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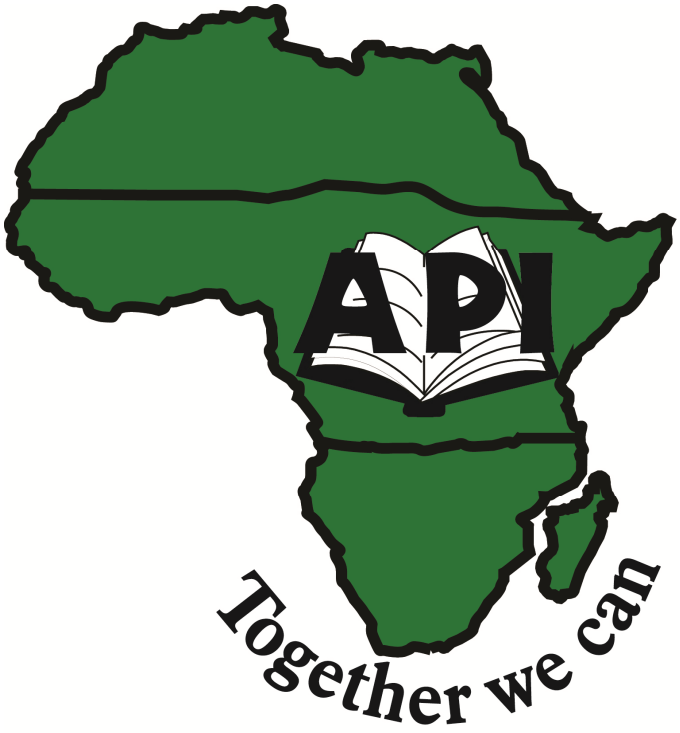

SOCIAL WORK AND SOCIAL ADMINISTRATION
TERM TWO STUDENT'S MODULES
(SWSA)
Contents

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Course Name	: Business Statistics

Course Description

The Course encompasses different forms of statistics, the appropriate methods of calculating the central tendency, understanding how to estimate various scales in determining range, use of variations and sequences, standard deviation and statistics related to cross tabulation.

Course objectives

- To equip students with analytical skills and statistical concepts useful in decision making.
- To improve their knowledge of describing and interpreting statistical records.
- To enable them get firm exposure to data collection, presentation, and analysis and interpretation for rational decisions on crucial matters.

Course Content

Introduction to statistics

- Definition of Statistics
- Common uses of statistics
- Relevance of statistics in an economy
- Types of statistics i.e descriptive, inferential statistics

Methods of calculating the central tendency

- Mean
- Mode
- Median
- Average

Estimates of scale

- Standard deviation
- Interquartile range
- Range
- Mean difference
- Median absolute deviation
- Average absolute deviation
- Sources of statistical dispersion

Statistics related to cross tabulation

- Chi-square
- Contingency coefficient
- Cramer's V
- Lambda coefficient
- Phi coefficient
- Kendall tau

Statistical Inference

- Definition of statistical inference
- Exploratory data analysis
- Exploratory data Analysis Development(EDAD)

Variance

- Definition of variance
- Forms of variance i.e continuous case, discrete case
- Approximating the variance of a function
- Distinguish between population and variance and sample variance
- Generalizations of variances

Skewness

- Definition of Skewness
- Forms of Skewness ie Sample Skewness, kurtosis
- Sample kurtosis
- Formulas for calculating kurtosis ie mean absolute error, interquartile range,

Standard deviation

- Definition of standard deviation
- Probability distribution or random variable
- Steps in calculating standard deviation
- Simplification of the formula
- Estimating population standard deviation

Mode of delivery Face to face lectures

Assessment

Course work 40%

Exams 60%

Total Mark 100%

Descriptive statistics

STATISTICS – a body of principles and methods of extracting inform action from numerical data. It is divided into two broad categories: inferential and descriptive statistics.

Descriptive statistics – the methods of organizing, summarizing and presenting data in convenient meaningful and easy to interpret forms e.g. tables, graphs, charts, averages, variations from averages. Are used to describe the main features of a collection of data in quantitative terms. Descriptive statistics are distinguished from inferential statistics (or inductive statistics), in that descriptive statistics aim to quantitatively summarize a data set, rather than being used to support inferential statements about the population that the data are thought to represent. Even when a data analysis draws its main conclusions using inductive statistical analysis, descriptive statistics are generally presented along with more formal analyses, to give the audience an overall sense of the data being analyzed.

Common uses

A common example of the use of descriptive statistics occurs in medical research studies. In a paper reporting on a study involving human subjects, there typically appears a table giving the overall sample size, sample sizes in important subgroups (e.g. for each treatment or exposure group), and demographic or clinical characteristics such as the average age, the proportion of subjects with each gender, and the proportion of subjects with related comorbidities.

In research involving comparisons between groups, a major emphasis is often placed on the significance level for the hypothesis that the groups being compared differ to a greater degree than would be expected by chance. This significance level is often represented as a p-value, or sometimes as the standard score of a test statistic. In contrast, an effect size is a descriptive statistic that conveys the estimated magnitude and direction of the difference between groups, without regard to whether the difference is statistically significant. Reporting significance levels without effect sizes is often criticized, since for large sample sizes even small effects of little practical importance can be highly statistically significant.

Examples of descriptive statistics

Most statistics can be used either as a descriptive statistic, or in an inductive analysis. For example, we can report the average reading test score for the students in each classroom in a school, to give a descriptive sense of the typical scores and their variation. If we perform a formal hypothesis test on the scores, we are doing inductive rather than descriptive analysis.

Some statistical summaries are especially common in descriptive analyses. Some examples follow.

- Measures of central tendency , Measures of dispersion , Measures of association , Cross-tab, contingency table , Histogram , Quantile, Q-Q plot , Scatterplot , Box plot .

INFERENTIAL STATISTICS – that body of methods used to draw conclusions about characteristics of a population based on information available from a sample taken scientifically from that population, e.g., given that UTL has 70,000 subscribers and 30,000 potential subscribers. If UTL wanted to introduce new communication methods, it my sample only 10% of its population. This leaves a chance of making errors.

However, statistical methods have ways of determining the reliability of statistical inference

Reliability: where a repeated measurement gives a similar if not exact value as before. This depends on: - the tool of measurement, -the competence of the person doing the measurement and -the consistency of the data.

The sample should be drawn using a probabilistic method (representative and luck of bias). Non probabilistic methods is not applicable in inferential statistics.

Population: is the total set of elements or characters under obsevation/study. It may consist of measurements, companies, a set of accounts, etc.

Sample:is a sub set of a population and a descriptive measure of the sample is known as a **statistic.**

ESTIMATION

Samples estimate parameters. Whereas a parameter for a specific population is a constant, a statistic is a variable.

The process of estimating, forecasting or making decisions about the population from sample information is called statistical inference and is the primary purpose of statistics. Populations are often large making it impractical to inquire from every member of a population.

Decision makers use statistics to estimate parameters. because of the uncertainty sorrounding the estimation techniques, each statistic must be acconpanied by a measure of reliability of inference.

Average

In mathematics, an **average**, **central tendency**[1] of a data set is a measure of the "middle" or "expected" value of the data set. There are many different descriptive statistics that can be chosen as a measurement of the central tendency of the data items. These include means, the median and the mode. Other statistical measures such as the standard deviation and the range are called measures of spread and describe how spread out the data is.

An average is a single value that is meant to typify a list of values. If all the numbers in the list are the same, then this number should be used. If the numbers are not all the same, an easy way to get a representative value from a list is to randomly pick any number from the list. However, the word 'average' is usually reserved for more sophisticated methods that are generally found to be more useful. In the latter case, the average is calculated by combining the values from the set in a specific way and computing a single number as being the average of the set.

The most common method is the arithmetic mean but there are many other types of averages, such as median (which is used most often when the distribution of the values is skewed with some small numbers of very high values, as seen with house prices or incomes).[2]

Calculation

Arithmetic mean

Main article: Arithmetic mean

If n numbers are given, each number denoted by a_i, where $i = 1, \ldots, n$, the arithmetic mean is the [sum] of the a_i's divided by n or

The arithmetic mean, often simply called the mean, of two numbers, such as 2 and 8, is obtained by finding a value A such that 2 + 8 = A + A. One may find that $A = (2 + 8)/2 = 5$. Switching the order of 2 and 8 to read 8 and 2 does not change the resulting value obtained for A. The mean 5 is not less than the minimum 2 nor greater than the maximum 8. If we increase the number of terms in the list for which we want an average, we get, for example, that the arithmetic mean of 2, 8, and 11 is found by solving for the value of A in the equation $2 + 8 + 11 = A + A + A$. One finds that $A = (2 + 8 + 11)/3 = 7$.

Changing the order of the three members of the list does not change the result: A $(8 + 11 + 2)/3 = 7$ and that 7 is between 2 and 11. This summation method is easily generalized for lists with any number of elements. However, the mean of a list of integers is not necessarily an integer. "The average family has 1.7 children" is a jarring way of making a statement that is more appropriately expressed by "the average number of children in the collection of families examined is 1.7".

Geometric mean

The geometric mean of n numbers is obtained by multiplying them all together and then taking the nth root. In algebraic terms, the geometric mean of $a_1, a_2, \ldots, a_n$ is defined as

Geometric mean can be thought of as the antilog of the arithmetic mean of the logs of the numbers.

Example: Geometric mean of 2 and 8 is

Harmonic mean

Harmonic mean for a set of numbers $a_1, a_2, \ldots, a_n$ is defined as the reciprocal of the arithmetic mean of the reciprocals of a_i's:

One example where it is useful is calculating the average speed. For example, if the speed for going from point A to B was 60 km/h, and the speed for returning from B to A was 40 km/h, then the average speed is given by

Inequality concerning AM, GM, and HM

A well known inequality concerning arithmetic, geometric, and harmonic means for any set of positive numbers is

It is easy to remember noting that the alphabetical order of the letters A, G, and H is preserved in the inequality. See Inequality of arithmetic and geometric means.

Mode and median

The most frequently occurring number in a list is called the mode. The mode of the list (1, 2, 2, 3, 3, 3, 4) is 3. The mode is not necessarily well defined, the list (1, 2, 2, 3, 3, 5) has the two modes 2 and 3. The mode can be subsumed under the general method of defining averages by understanding it as taking the list and setting each member of the list equal to the most common value in the list if there is a most common value. This list is then equated to the resulting list with all values replaced by the same value. Since they are already all the same, this does not require any change. The mode is more meaningful and potentially useful if there are many numbers in the list, and the frequency of the numbers progresses smoothly (e.g., if out of a group of 1000 people, 30 people weigh 61 kg, 32 weigh 62 kg, 29 weigh 63 kg, and all the other possible weights occur less frequently, then 62 kg is the mode).

The mode has the advantage that it can be used with non-numerical data (e.g., red cars are most frequent), whilst other averages cannot.

The median is the middle number of the group when they are ranked in order. (If there are an even number of numbers, the mean of the middle two is taken.)

Thus to find the median, order the list according to its elements' magnitude and then repeatedly remove the pair consisting of the highest and lowest values until either one or two values are left. If exactly one value is left, it is the median; if two values, the median is the arithmetic mean of these two. This method takes the list 1, 7, 3, 13 and orders it to read 1, 3, 7, 13. Then the 1 and 13 are removed to obtain the list 3, 7. Since there are two elements in this remaining list, the median is their arithmetic mean, $(3 + 7)/2 = 5$.

Definitions

Mean

Mode The most frequent value in the data set

Median The middle value that separates the higher half from the lower half of the data set

Truncated Mean The arithmetic mean of data values after a certain number or proportion of the highest and lowest data values have been discarded

Interquartile mean A special case of the truncated mean, using the interquartile range

Winsorized mean Similar to the truncated mean, but, rather than deleting the extreme values, they are set equal to the largest and smallest values that remain

Geometric mean A rotationinvariant extension of the median for points in R^n

Solutions to variational problems

Several measures of central tendency can be characterized as solving a variational problem, in the sense of the calculus of variations, namely minimizing variation from the center. That is, given a measure of statistical dispersion, one asks for a measure of central tendency that minimizes variation: such that variation from the center is

minimal among all choices of center. In a quip, "dispersion precedes location". In the sense of L^p spaces, the correspondence is:

L^p	Dispersion	central tendency
L^1	average absolute deviation	median
L^2	standard deviation	mean
L^∞	maximum deviation	midrange

Thus standard deviation about the mean is lower than standard deviation about any other point, and the maximum deviation about the midrange is lower than the maximum deviation about any other point. The uniqueness of this characterization of mean follows from convex optimization. Indeed, for a given (fixed) data set x, the function represents the dispersion about a constant value *c* relative to the L^2 norm. Because the function f_2 is a strictly convexcoercive function, the minimizer exists and is unique.

Note that the median in this sense is not in general unique, and in fact any point between the two central points of a discrete distribution minimizes average absolute deviation. The dispersion in the L^1 norm, given by

is not *strictly* convex, whereas strict convexity is needed to ensure uniqueness of the minimizer. In spite of this, the minimizer is unique for the L^∞ norm.

Miscellaneous types

Other more sophisticated averages are: trimean, trimedian, and normalized mean.

One can create one's own average metric using generalized f-mean:

where *f* is any invertible function. The harmonic mean is an example of this using $f(x) = 1/x$, and the geometric mean is another, using $f(x) = \log x$. Another example, expmean (exponential mean) is a mean using the function $f(x) = e^x$, and it is inherently biased towards the higher values. However, this method for generating means is not general enough to capture all averages. A more general method for defining an average, y, takes any function of a list $g(x_1, x_2, \ldots, x_n)$, which is symmetric under permutation of the members of the list, and equates it to the same function with the value of the average replacing each member of the list: $g(x_1, x_2, \ldots, x_n) = g(y, y, \ldots, y)$. This most general definition still captures the important property of all averages that the average of a list of identical elements is that element itself. The function $g(x_1, x_2, \ldots, x_n) = x_1 + x_2 + \ldots + x_n$ provides the arithmetic mean. The function $g(x_1, x_2, \ldots, x_n) = x_1 \cdot x_2 \cdot \ldots \cdot x_n$ provides the geometric mean. The function $g(x_1, x_2, \ldots, x_n) = x_1^{-1} + x_2^{-1} + \ldots + x_n^{-1}$ provides the harmonic mean. (See John Bibby (1974) “Axiomatisations of the average and a further generalisation of monotonic sequences,” Glasgow Mathematical Journal, vol. 15, pp. 63–65.)

In data streams

The concept of an average can be applied to a stream of data as well as a bounded set, the goal being to find a value about which recent data is in some way clustered. The stream may be distributed in time, as in samples taken by some data acquisition system from which we want to remove noise, or in space, as in pixels in an image from which we want to extract some property. An easy-to-understand and

widely used application of average to a stream is the simple moving average in which we compute the arithmetic mean of the most recent N data items in the stream. To advance one position in the stream, we add 1/N times the new data item and subtract 1/N times the data item N places back in the stream.

Averages of functions

The concept of average can be extended to functions.[3] In calculus, the average value of an integrable function f on an interval [a,b] is defined by

Etymology

An early meaning (c. 1500) of the word *average* is "damage sustained at sea". The root is found in Arabic as *awar*, in Italian as *avaria* and in French as *avarie*. Hence an *average adjuster* is a person who assesses an insurable loss.

Marine damage is either *particular average*, which is borne only by the owner of the damaged property, or general average, where the owner can claim a proportional contribution from all the parties to the marine venture. The type of calculations used in adjusting general average gave rise to the use of "average" to mean "arithmetic mean".

However, according to the Oxford English Dictionary, the earliest usage in English (1489 or earlier) appears to be an old legal term for a tenant's day labour obligation to a sheriff, probably anglicised from "avera" found in the English Domesday Book (1085). This pre-existing term thus lay to hand when an equivalent for *avarie* was wanted.

Statistical dispersion

In statistics, **statistical dispersion** (also called **statistical variability** or **variation**) is variability or spread in a variable or a probability distribution. Common examples of measures of statistical dispersion are the variance, standard deviation and interquartile range.

Dispersion is contrasted with location or central tendency, and together they are the most used properties of distributions.

Measures of statistical dispersion

A measure of statistical dispersion is a real number that is zero if all the data are identical, and increases as the data becomes more diverse. It cannot be less than zero.

Most measures of dispersion have the **same scale as the quantity being measured.** In other words, if the measurements have units, such as metres or seconds, the measure of dispersion has the same units. Such measures of dispersion include:

ESTIMATES OF SCALE

- Standard deviation
- Interquartile range
- Range
- Mean difference
- Median absolute deviation

- Average absolute deviation (or simply called average deviation)

These are frequently used (together with scale factors) as estimators of scale parameters, in which capacity they are called **estimates of scale.**

All the above measures of statistical dispersion have the useful property that they are **location-invariant**, as well as linear in scale. So if a random variable X has a dispersion of S_X then a linear transformation $Y = aX + b$ for real a and b should have dispersion $S_Y = |a|S_X$.

Other measures of dispersion are **dimensionless (scale-free)**. In other words, they have no units even if the variable itself has units. These include:

- Coefficient of variation
- Quartile coefficient of dispersion
- Relative mean difference, equal to twice the Gini coefficient

There are other measures of dispersion:

- Variance (the square of the standard deviation) — location-invariant but not linear in scale.
- Variance-to-mean ratio — mostly used for count data when the term coefficient of dispersion is used and when this ratio is dimensionless, as count data are themselves dimensionless: otherwise this is not scale-free.

Some measures of dispersion have specialized purposes, among them the Allan variance and the Hadamard variance.

For categorical variables, it is less common to measure dispersion by a single number. See qualitative variation. One measure which does so is the discrete entropy.

Sources of statistical dispersion

In the physical sciences, such variability may result only from random measurement errors: instrument measurements are often not perfectly precise, i.e., reproducible. One may assume that the quantity being measured is unchanging and stable, and that the variation between measurements is due to observational error.

In the biological sciences, this assumption is false: the variation observed might be *intrinsic* to the phenomenon: distinct members of a population differ greatly. This is also seen in the arena of manufactured products; even there, the meticulous scientist finds variation.

The simple model of a stable quantity is preferred when it is tenable. Each phenomenon must be examined to see if it warrants such a simplification.

Association (statistics)

In statistics, an **association** is any relationship between two measured quantities that renders them statistically dependent.[1] The term "association" refers broadly to any such relationship, whereas the narrower term "correlation" refers to a linear relationship between two quantities.

There are many statistical measures of association that can be used to infer the presence or absence of an association in a sample of data. Examples of such

measures include the product moment correlation coefficient, used mainly for quantitative measurements, and the odds ratio, used for dichotomous measurements. Other measures of association are the tetrachoric correlation coefficient and Goodman and Kruskal's lambda

In quantitative research, the term "association" is often used to emphasize that a relationship being discussed is not necessarily causal (see correlation does not imply causation).

Cross tabulation

A **cross tabulation** (often abbreviated as **cross tab**) displays the joint distribution of two or more variables. They are usually presented as a contingency table in a matrix format. Whereas a frequency distribution provides the distribution of one variable, a contingency table describes the distribution of two or more variables simultaneously.

The following is a fictitious example of a 3 × 2 contingency table. The variable “Wikipedia usage” has three categories: heavy user, light user, and non user. These categories are all inclusive so the columns sum to 100%. The other variable "underpants" has two categories: boxers, and briefs. These categories are not all inclusive so the rows need not sum to 100%. Each cell gives the percentage of subjects who share that combination of traits.

	boxers	briefs
heavy Wiki user	70%	5%
light Wiki user	25%	35%
non Wiki user	5%	60%

Cross tabs are frequently used because:

1. They are easy to understand. They appeal to people who do not want to use more sophisticated measures.
2. They can be used with any level of data: nominal, ordinal, interval, or ratio - cross tabs treat all data as if it is nominal.
3. A table can provide greater insight than single statistics.
4. It solves the problem of empty or sparse cells.
5. They are simple to conduct.

Statistics related to cross tabulations

The following list is not comprehensive.

- Chi-square - This tests the statistical significance of the cross tabulations. Chi-squared should not be calculated for percentages. The cross tabs must be converted back to absolute counts (numbers) before calculating chi-squared. Chi-squared is also problematic when any cell has a joint frequency of less

than five. For an in-depth discussion of this issue see Fienberg, S.E. (1980). "The Analysis of Cross-classified Categorical Data." 2nd Edition. M.I.T. Press, Cambridge, MA.

- Contingency coefficient - This tests the strength of association of the cross tabulations. It is a variant of the phi coefficient that adjusts for statistical significance. Values range from 0 (no association) to 1 (the theoretical maximum possible association).
- **Cramer's V** - This tests the strength of association of the cross tabulations. It is a variant of the **phi coefficient** that adjusts for the number of rows and columns. Values range from 0 (no association) to 1 (the theoretical maximum possible association).
- Lambda coefficient — This tests the strength of association of the cross tabulations when the variables are measured at the nominal level. Values range from 0 (no association) to 1 (the theoretical maximum possible association). **Asymmetric lambda** measures the percentage improvement in predicting the dependent variable. **Symmetric lambda** measures the percentage improvement when prediction is done in both directions.
- phi coefficient - If both variables instead are nominal and dichotomous, phi coefficient is a measure of the degree of association between two binary variables. This measure is similar to the correlation coefficient in its interpretation. Two binary variables are considered positively associated if most of the data falls along the diagonal cells. In contrast, two binary variables are considered negatively associated if most of the data falls off the diagonal.
- Kendall tau:
    - **Tau b** - This tests the strength of association of the cross tabulations when both variables are measured at the ordinal level. It makes adjustments for ties and is most suitable for square tables. Values range from -1 (100% negative association, or perfect inversion) to +1 (100% positive association, or perfect agreement). A value of zero indicates the absence of association.
    - **Tau c** - This tests the strength of association of the cross tabulations when both variables are measured at the ordinal level. It makes adjustments for ties and is most suitable for rectangular tables. Values range from -1 (100% negative association, or perfect inversion) to +1 (100% positive association, or perfect agreement). A value of zero indicates the absence of association.
- Gamma - This tests the strength of association of the cross tabulations when both variables are measured at the ordinal level. It makes no adjustment for either table size or ties. Values range from -1 (100% negative association, or perfect inversion) to +1 (100% positive association, or perfect agreement). A value of zero indicates the absence of association.
- **Uncertainty coefficient**, **entropy coefficient** or **Theil's U**

Histogram

In statistics, a **histogram** is a graphical display of tabulated frequencies, shown as bars. It shows what proportion of cases fall into each of several categories: it is a form of data binning. The categories are usually specified as non-overlapping intervals of some variable. The categories (bars) must be adjacent. The intervals (or bands, or bins) are generally of the same size.

Histograms are used to plot density of data, and often for density estimation: estimating the probability density function of the underlying variable. The total area of a histogram used for probability density is always normalized to 1. If the length of the intervals on the x-axis are all 1, then a histogram is identical to a relative frequency plot.

An alternative to the histogram is kernel density estimation, which uses a kernel to smooth samples. This will construct a smooth probability density function, which will in general more accurately reflect the underlying variable.

The histogram is one of the seven basic tools of quality control, which also include the Pareto chart, check sheet, control chart, cause-and-effect diagram, flowchart, and scatter diagram.

Etymology

The word *histogram* derived from the Greek*histos* 'anything set upright' (as the masts of a ship, the bar of a loom, or the vertical bars of a histogram); and *gramma* 'drawing, record, writing'. The term was introduced by Karl Pearson in 1895.[2]Examples

As an example we consider data collected by the U.S. Census Bureau on time to travel to work (2000 census, [1], Table 2). The census found that there were **124 million people** who work outside of their homes. This rounding is a common phenomenon when collecting data from people.

This histogram shows the number of cases per unit interval so that the height of each bar is equal to the proportion of total people in the survey who fall into that category. The area under the curve represents the total number of cases (124 million). This type of histogram shows absolute numbers.

In other words a histogram represents a frequency distribution by means of rectangles whose widths represent class intervals and whose areas are proportional to the corresponding frequencies. They only place the bars together to make it easier to compare data.

Activities and demonstrations

The SOCR resource pages contain a number of hands-on interactive activities demonstrating the concept of a histogram, histogram construction and manipulation using Java applets and charts.

Mathematical definition

An ordinary and a cumulative histogram of the same data. The data shown is a random sample of 10,000 points from a normal distribution with a mean of 0 and a standard deviation of 1.

In a more general mathematical sense, a histogram is a mapping m_i that counts the number of observations that fall into various disjoint categories (known as *bins*), whereas the graph of a histogram is merely one way to represent a histogram. Thus, if we let n be the total number of observations and k be the total number of bins, the histogram m_i meets the following conditions:

Cumulative histogram

A cumulative histogram is a mapping that counts the cumulative number of observations in all of the bins up to the specified bin. That is, the cumulative histogram M_i of a histogram m_i is defined as:

Number of bins and width

There is no "best" number of bins, and different bin sizes can reveal different features of the data. Some theoreticians have attempted to determine an optimal number of bins, but these methods generally make strong assumptions about the shape of the distribution. You should always experiment with bin widths before choosing one (or more) that illustrate the salient features in your data.

The number of bins k can be calculated directly, or from a suggested bin width h:

The braces indicate the ceiling function.

Sturges' formula[3]

,

which implicitly bases the bin sizes on the range of the data, and can perform poorly if $n < 30$.

Scott's choice[4]

,

where σ is the sample standard deviation.

Freedman-Diaconis' choice[5]

,

which is based on the interquartile range.

Continuous data

The idea of a histogram can be generalized to continuous data. Let (see Lebesgue space), then the cumulative histogram operator H can be defined by:

$H(f)(y) =$ with only finitely many intervals of monotony this can be rewritten as

$h(f)(y)$ is undefined if y is the value of a stationary point.

Density estimation

- Kernel density estimation, a smoother but more complex method of density estimation

Quantile

Quantiles are points taken at regular intervals from the cumulative distribution function (CDF) of a random variable. Dividing ordered data into q essentially equal-sized data subsets is the motivation for q-quantiles; the quantiles are the data values marking the boundaries between consecutive subsets. Put another way, the kth q-quantile for a random variable is the value x such that the probability that the random variable will be less than x is at most $k\ /\ q$ and the probability that the random variable will be more than x is at most $(q - k)\ /\ q$. There are $q - 1$ quantiles, with k an integer satisfying $0 < k < q$.

Median of the order statistics

Alternatively, one may use estimates of the *median* of the order statistics, which one can compute based on estimates of the median of the order statistics of a uniform distribution and the quantile function of the distribution; this was suggested by (Filliben 1975).[3]

This can be easily generated for any distribution for which the quantile function can be computed, but conversely the resulting estimates of location and scale are no longer precisely the least squares estimates, though these only differ significantly for n small.

Statistical inference

Statistical inference or **statistical induction** comprises the use of statistics and random sampling to make inferences concerning some unknown aspect of a population. It is distinguished from descriptive statistics.

Two schools of statistical inference are frequency probability and Bayesian inference.

Definition

Statistical inference is inference about a population from a random sample drawn from it or, more generally, about a random process from its observed behavior during a finite period of time. It includes:

1. Point estimation
2. Interval estimation
3. Hypothesis testing (or statistical significance testing)
4. Prediction – see predictive inference

There are several distinct schools of thought about the justification of statistical inference. All are based on some idea of what real world phenomena can be reasonably modeled as probability.

1. Frequency probability
2. Bayesian probability
3. Fiducial probability

The topics below are usually included in the area of **statistical inference**.

1. Statistical assumptions
2. Statistical decision theory
3. Estimation theory
4. Statistical hypothesis testing
5. Revising opinions in statistics
6. Design of experiments, the analysis of variance, and regression
7. Survey sampling
8. Summarizing statistical data

Exploratory data analysis

Exploratory data analysis (EDA) is an approach to analyzing data for the purpose of formulating hypotheses worth testing, complementing the tools of conventional statistics for testing hypotheses[1]. It was so named by John Tukey to contrast with Confirmatory Data Analysis, the term used for the set of ideas about hypothesis testing, p-values, confidence intervals etc. which formed the key tools in the arsenal of practicing statisticians at the time.

EDA development

Tukey held that too much emphasis in statistics was placed on statistical hypothesis testing (confirmatory data analysis); more emphasis needed to be placed on using data to suggest hypotheses to test. In particular, he held that confusing the two types of analyses and employing them on the same set of data can lead to systematic bias owing to the issues inherent in testing hypotheses suggested by the data.

The objectives of EDA are to:

- Suggest hypotheses about the causes of observed phenomena
- Assess assumptions on which statistical inference will be based
- Support the selection of appropriate statistical tools and techniques
- Provide a basis for further data collection through surveys or experiments

Many **EDA** techniques have been adopted into data mining and are being taught to young students as a way to introduce them to statistical thinking.[2]

Variance

In probability theory and statistics, the **variance** of a random variable, probability distribution, or sample is a measure of statistical dispersion, averaging the squares of the deviations of its possible values from its expected value (mean). Whereas the mean is a way to describe the location of a distribution, the variance is a way to capture its scale or degree of being spread out. The unit of variance is the square of the unit of the original variable. The positive square root of the variance, called the standard deviation, has the same units as the original variable and can be easier to interpret for this reason.

The variance of a real-valued random variable is its second central moment, and it also happens to be its second cumulant. Just as some distributions do not have a mean, some do not have a variance. The mean exists whenever the variance exists, but not vice versa.

Definition

If a random variable X has expected value (mean) $\mu = \mathrm{E}(X)$, then the variance $\mathrm{Var}(X)$ of X is given by:

This definition encompasses random variables that are discrete, continuous, or neither. Of all the points about which squared deviations could have been calculated, the mean produces the minimum value for the averaged sum of squared deviations.

This definition is expanded as follows:

The variance of random variable X is typically designated as $\mathrm{Var}(X)$, , or simply σ^2 (pronounced "sigma squared"). If a distribution does not have an expected value, as is the case for the Cauchy distribution, it does not have a variance either. Many other distributions for which the expected value does exist do not have a finite variance because the relevant integral diverges. An example is a Pareto distribution whose Pareto index$k$ satisfies $1 < k \leq 2$.

Continuous case

If the random variable X is continuous with probability density function$p(x)$,

where

and where the integrals are definite integrals taken for x ranging over the range of X.

Discrete case

If the random variable X is discrete with probability mass

function$x_1 \mapsto p_1, \ldots, x_n \mapsto p_n$, then

(When such a discrete weighted variance is specified by weights whose sum is not 1, then one divides by the sum of the weights.) That is, it is the expected value of the square of the deviation of X from its own mean. In plain language, it can be expressed as "The average of the square of the distance of each data point from the mean". It is thus the *mean squared deviation*.

Examples

Exponential distribution

The exponential distribution with parameter λ is a continuous distribution whose support is the semi-infinite interval $[0,\infty)$. Its probability density function is given by:

and it has expected value $\mu = \lambda^{-1}$. Therefore the variance is equal to:

So for an exponentially distributed random variable $\sigma^2 = \mu^2$.

Fair die

A six-sided fair die can be modelled with a discrete random variable with outcomes 1 through 6, each with equal probability $1/6$. The expected value is $(1+2+3+4+5+6)/6 = 3.5$. Therefore the variance can be computed to be:

Properties

Variance is non-negative because the squares are positive or zero. The variance of a constant random variable is zero, and the variance of a variable in a data set is 0 if and only if all entries have the same value.

Variance is invariant with respect to changes in a location parameter. That is, if a constant is added to all values of the variable, the variance is unchanged. If all values are scaled by a constant, the variance is scaled by the square of that constant. These two properties can be expressed in the following formula:

The variance of a finite sum of **uncorrelated** random variables is equal to the sum of their variances. This stems from the identity:

and that for uncorrelated variables covariance is zero.

In general, for the sum of N variables: , we have:

1. Suppose that the observations can be partitioned into equal-sized **subgroups** according to some second variable. Then the variance of the total group is equal to the mean of the variances of the subgroups plus the variance of the means of the subgroups. This property is known as variance decomposition or the law of total variance and plays an important role in the analysis of variance. For example, suppose that a group consists of a subgroup of men and an equally large subgroup of women. Suppose that the men have a mean body length of 180 and that the variance of their lengths is 100. Suppose that the women have a mean length of 160 and that the variance of their lengths is 50. Then the mean of the variances is (100 + 50) / 2 = 75; the variance of the means is the variance of 180, 160 which is 100. Then, for the total group of men and women combined, the variance of the body lengths will be 75 + 100 = 175. Note that this uses N for the denominator instead of N − 1.

   In a more general case, if the subgroups have unequal sizes, then they must be weighted proportionally to their size in the computations of the means and variances. The formula is also valid with more than two groups, and even if the grouping variable is continuous.

   This formula implies that the variance of the total group cannot be smaller than the mean of the variances of the subgroups. Note, however, that the total variance is not necessarily larger than the variances of the subgroups. In the above example, when the subgroups are analyzed separately, the variance is

influenced only by the man-man differences and the woman-woman differences. If the two groups are combined, however, then the men-women differences enter into the variance also.

2. Many computational formulas for the variance are based on this equality: **The variance is equal to the mean of the squares minus the square of the mean.** For example, if we consider the numbers 1, 2, 3, 4 then the mean of the squares is (1 × 1 + 2 × 2 + 3 × 3 + 4 × 4) / 4 = 7.5. The mean is 2.5, so the square of the mean is 6.25. Therefore the variance is 7.5 − 6.25 = 1.25, which is indeed the same result obtained earlier with the definition formulas. Many pocket calculators use an algorithm that is based on this formula and that allows them to compute the variance while the data are entered, without storing all values in memory. The algorithm is to adjust only three variables when a new data value is entered: The number of data entered so far (*n*), the sum of the values so far (*S*), and the sum of the squared values so far (*SS*). For example, if the data are 1, 2, 3, 4, then after entering the first value, the algorithm would have *n* = 1, *S* = 1 and *SS* = 1. After entering the second value (2), it would have *n* = 2, *S* = 3 and *SS* = 5. When all data are entered, it would have *n* = 4, *S* = 10 and *SS* = 30. Next, the mean is computed as *M* = *S* / *n*, and finally the variance is computed as *SS* / *n* − *M* × *M*. In this example the outcome would be 30 / 4 − 2.5 × 2.5 = 7.5 − 6.25 = 1.25. If the unbiased sample estimate is to be computed, the outcome will be multiplied by *n* / (*n* − 1), which yields 1.667 in this example.

Properties, formal

Sum of uncorrelated variables (Bienaymé formula)

One reason for the use of the variance in preference to other measures of dispersion is that the variance of the sum (or the difference) of uncorrelated random variables is the sum of their variances:

This statement is called the Bienaymé formula.[1] and was discovered in 1853. It is often made with the stronger condition that the variables are independent, but uncorrelatedness suffices. So if the variables have the same variance σ^2, then, since division by *n* is a linear transformation, this formula immediately implies that the variance of their mean is

That is, the variance of the mean decreases with *n*. This fact is used in the definition of the standard error of the sample mean, which is used in the central limit theorem.

Sum of correlated variables

In general, if the variables are correlated, then the variance of their sum is the sum of their covariances:

(Note: This by definition includes the variance of each variable, since Cov(*X*,*X*)=Var(*X*).)

Here Cov is the covariance, which is zero for independent random variables (if it exists). The formula states that the variance of a sum is equal to the sum of all elements in the covariance matrix of the components. This formula is used in the theory of Cronbach's alpha in classical test theory.

So if the variables have equal variance σ^2 and the average correlation of distinct variables is ρ, then the variance of their mean is

This implies that the variance of the mean increases with the average of the correlations. Moreover, if the variables have unit variance, for example if they are standardized, then this simplifies to

This formula is used in the Spearman-Brown prediction formula of classical test theory. This converges to ρ if n goes to infinity, provided that the average correlation remains constant or converges too. So for the variance of the mean of standardized variables with equal correlations or converging average correlation we have

Therefore, the variance of the mean of a large number of standardized variables is approximately equal to their average correlation. This makes clear that the sample mean of correlated variables does generally not converge to the population mean, even though the Law of large numbers states that the sample mean will converge for independent variables.

Weighted sum of variables

Properties 6 and 8, along with this property from the covariance page: $\operatorname{Cov}(aX, bY) = ab \operatorname{Cov}(X, Y)$ jointly imply that

This implies that in a weighted sum of variables, the variable with the largest weight will have a disproportionally large weight in the variance of the total. For example, if X and Y are uncorrelated and the weight of X is two times the weight of Y, then the weight of the variance of X will be four times the weight of the variance of Y.

Decomposition

The general formula for variance decomposition or the law of total variance is: If X and Y are two random variables and the variance of X exists, then

Here, $\operatorname{E}(X|Y)$ is the conditional expectation of X given Y, and $\operatorname{Var}(X|Y)$ is the conditional variance of X given Y. (A more intuitive explanation is that given a particular value of Y, then X follows a distribution with mean $\operatorname{E}(X|Y)$ and variance $\operatorname{Var}(X|Y)$. The above formula tells how to find $\operatorname{Var}(X)$ based on the distributions of these two quantities when Y is allowed to vary.) This formula is often applied in analysis of variance, where the corresponding formula is

$$SS_{\text{Total}} = SS_{\text{Between}} + SS_{\text{Within}}.$$

It is also used in linear regression analysis, where the corresponding formula is

$$SS_{\text{Total}} = SS_{\text{Regression}} + SS_{\text{Residual}}.$$

This can also be derived from the additivity of variances (property 8), since the total (observed) score is the sum of the predicted score and the error score, where the latter two are uncorrelated.

Computational formula

The **computational formula for the variance** follows in a straightforward manner from the linearity of expected values and the above definition:

This is often used to calculate the variance in practice, although it suffers from catastrophic cancellation if the two components of the equation are similar in magnitude.

Characteristic property

The second moment of a random variable attains the minimum value when taken around the first moment (i.e., mean) of the random variable, i.e. . Conversely, if a continuous function satisfies for all random variables X, then it is necessarily of the form , where $a > 0$. This also holds in the multidimensional case.[2]

Calculation from the CDF

The population variance for a non-negative random variable can be expressed in terms of the cumulative distribution function$F$ using

where $H(u) = 1 - F(u)$ is the right tail function. This expression can be used to calculate the variance in situations where the CDF, but not the density, can be conveniently expressed.

Approximating the variance of a function

The delta method uses second-order Taylor expansions to approximate the variance of a function of one or more random variables. For example, the approximate variance of a function of one variable is given by

provided that f is twice differentiable and that the mean and variance of X are finite.[*citation needed*]

Population variance and sample variance

In general, the population variance of a *finite*population of size N is given by

or if the population is an abstract population with probability distribution Pr:

where is the population mean. This is merely a special case of the general definition of variance introduced above, but restricted to finite populations.

In many practical situations, the true variance of a population is not known *a priori* and must be computed somehow. When dealing with infinite populations, this is generally impossible.

A common task is to estimate the variance of a population from a sample. We take a sample with replacement of n values from the population, and estimate the variance on the basis of this sample. There are several good estimators. Two of them are well known: and

Both are referred to as ***sample variance***.

The two estimators only differ slightly as we see, and for larger values of the sample size$n$ the difference is negligible. While the first one may be seen as the variance of the sample considered as a population, the second one is the unbiased estimator of the population variance, meaning that its expected value $E[s^2]$ is equal to the true variance of the sampled random variable; the use of the term $n - 1$ is called Bessel's correction. The sample variance with $n - 1$ is a U-statistic for the function $f(x_1,x_2) = (x_1 - x_2)^2 / 2$ meaning that it is obtained by averaging a 2-sample statistic over 2-element subsets of the population.

While,

Distribution of the sample variance

Being a function of random variables, the sample variance is itself a random variable, and it is natural to study its distribution. In the case that y_i are independent observations from a normal distribution, Cochran's theorem shows that s^2 follows a scaled chi-square distribution:

As a direct consequence, it follows that

If the y_i are independent and identically distributed, but not necessarily normally distributed, then s^2 is unbiased for σ^2. If the conditions of the law of large numbers hold, s^2 is a consistent estimator of σ^2.

Generalizations

Unbiased estimate for expected error in the mean of A for a sample of M data points with sample bias coefficient ρ. The log-log slope -½ line for ρ=0 is the unbiased standard error.

If X is a vector-valued random variable, with values in , and thought of as a column vector, then the natural generalization of variance is , where and is the transpose of X, and so is a row vector. This variance is a positive semi-definite square matrix, commonly referred to as the covariance matrix.

If X is a complex-valued random variable, with values in , then its variance is , where X^* is the complex conjugate of X. This variance is also a positive semi-definite square matrix.

If one's (real) random variables are defined on an n-dimensional continuum**x**, the cross-covariance of variables A[**x**] and B[**x**] as a function of n-dimensional vector displacement (or lag) **Δx** may be defined as $\sigma_{AB}[\mathbf{\Delta x}] \equiv \langle (A[\mathbf{x}+\mathbf{\Delta x}]-\mu_A)(B[\mathbf{x}]-\mu_B)\rangle_{\mathbf{x}}$. Here the population (as distinct from sample) average over **x** is denoted by angle brackets $\langle\rangle_{\mathbf{x}}$ or the Greek letter μ.

This quantity, called a second-moment correlation measure because it's a generalization of the second-moment statistic *variance*, is sometimes put into dimensionless form by normalizing with the population standard deviations of A and B (e.g. $\sigma_A \equiv \mathrm{Sqrt}[\sigma_{AA}[0]]$). This results in a correlation coefficient $\rho_{AB}[\mathbf{\Delta x}] \equiv \sigma_{AB}[\mathbf{\Delta x}]/(\sigma_A\sigma_B)$ that takes on values between plus and minus one. When A is the same as B, the foregoing expressions yield values for autocovariance, a quantity also known in scattering theory as the pair-correlation (or Patterson) function.

If one defines *sample bias coefficient* ρ as an average of the autocorrelation-coefficient $\rho_{AA}[\mathbf{\Delta x}]$ over all point pairs in a set of M sample points[3], an unbiased estimate for *expected error in the mean* of A is the square root of: sample variance (taken as a population) times $(1+(M-1)\rho)/((M-1)(1-\rho))$. When ρ is much greater than 1/(M-1), this reduces to the square root of: sample variance (taken as a population) times $\rho/(1-\rho)$. When $|\rho|$ is much less than 1/(M-1) this yields the more familiar expression for standard error, namely the square root of: sample variance (taken as a population) over (M-1).

Moment of inertia

The variance of a probability distribution is analogous to the moment of inertia in classical mechanics of a corresponding mass distribution along a line, with respect to rotation about its center of mass. It is because of this analogy that such things as the variance are called *moments* of probability distributions. The covariance matrix is related to the moment of inertia tensor for multivariate distributions. The moment of inertia of a cloud of n points with a covariance matrix of Σ is given by

This difference between moment of inertia in physics and in statistics is clear for points that are gathered along a line. Suppose many points are close to the x and distributed along it. The covariance matrix might look like

That is, there is the most variance in the x direction. However, physicists would consider this to have a low moment *about* the x axis so the moment-of-inertia tensor is

Skewness

Example of experimental data with non-zero skewness (gravitropic response of wheatcoleoptiles, 1,790)

In probability theory and statistics, **skewness** is a measure of the asymmetry of the probability distribution of a real-valued random variable.

Introduction

Consider the distribution in the figure. The bars on the right side of the distribution taper differently than the bars on the left side. These tapering sides are called *tails*, and they provide a visual means for determining which of the two kinds of skewness a distribution has:

1. **negative skew**: The left tail is longer; the mass of the distribution is concentrated on the right of the figure. It has relatively few low values. The distribution is said to be *left-skewed*. Example (observations): 1,1000,1001,1002,1003
2. **positive skew**: The right tail is longer; the *mass* of the distribution is concentrated on the left of the figure. It has relatively few high values. The distribution is said to be *right-skewed*. Example (observations): 1,2,3,4,100.

In a skewed (unbalanced, lopsided) distribution, the mean is farther out in the long tail than is the median. If there is no skewness or the distribution is symmetric like the bell-shapednormal curve then the mean = median = mode.

Many textbooks teach a rule of thumb stating that the mean is right of the median under right skew, and left of the median under left skew. This rule fails with surprising frequency. It can fail in multimodal distributions, or in distributions where one tail is long but the other is heavy. Most commonly, though, the rule fails in discrete distributions where the areas to the left and right of the median are not equal. Such distributions not only contradict the textbook relationship between mean, median, and skew, they also contradict the textbook interpretation of the median.

Definition

Skewness, the third standardized moment, is written as γ_1 and defined as

where μ_3 is the third moment about the mean and σ is the standard deviation. Equivalently, skewness can be defined as the ratio of the third cumulant κ_3 and the third power of the square root of the second cumulant κ_2:

This is analogous to the definition of kurtosis, which is expressed as the fourth cumulant divided by the fourth power of the square root of the second cumulant.

The skewness of a random variable *X* is sometimes denoted Skew[*X*].

Sample skewness

For a sample of *n* values the *sample skewness* is

where x_i is the i^{th} value, is the sample mean, m_3 is the sample third central moment, and m_2 is the sample variance.

Given samples from a population, the equation for the sample skewness g_1 above is a biased estimator of the population skewness. The usual estimator of skewness is

where k_3 is the unique symmetric unbiased estimator of the third cumulant and k_2 is the symmetric unbiased estimator of the second cumulant. Unfortunately G_1 is, nevertheless, generally biased. Its expected value can even have the opposite sign from the true skewness; compare unbiased estimation of standard deviation.

Properties

If *Y* is the sum of *n* independent random variables, all with the same distribution as *X*, then it can be shown that Skew[*Y*] = Skew[*X*] / $\sqrt{n}$.

Kurtosis

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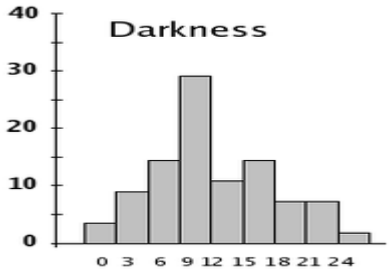
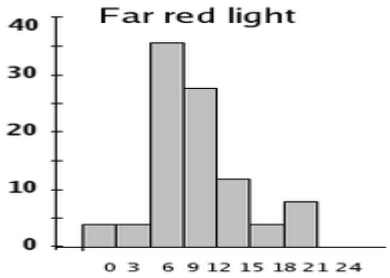
In probability theory and statistics, **kurtosis** (from the Greek word κυρτός, *kyrtos* or *kurtos*, meaning bulging) is a measure of the "peakedness" of the probability distribution of a real-valued random variable. Higher kurtosis means more of the variance is due to infrequent extreme deviations, as opposed to frequent modestly-sized deviations.





The far red light has no effect on the average speed of the gravitropic reaction in wheatcoleoptiles, but it changes kurtosis from platykurtic to leptokurtic (−0.194 → 0.055)

Definition

The fourth standardized moment is defined as

$$\frac{\mu_4}{\sigma^4},$$

where μ_4 is the fourth moment about the mean and σ is the standard deviation. This is sometimes used as the definition of kurtosis in older works, but is not the definition used here.

Kurtosis is more commonly defined as the fourth cumulant divided by the square of the second cumulant, which is equal to the fourth moment around the mean divided by the square of the variance of the probability distribution minus 3,

$$\gamma_2 = \frac{\kappa_4}{\kappa_2^2} = \frac{\mu_4}{\sigma^4} - 3,$$

which is also known as **excess kurtosis**. The "minus 3" at the end of this formula is often explained as a correction to make the kurtosis of the normal distribution equal to zero. Another reason can be seen by looking at the formula for the kurtosis of the sum of random variables. Because of the use of the cumulant, if *Y* is the sum of *n*independent random variables, all with the same distribution as *X*, then Kurt[*Y*] = Kurt[*X*] / *n*, while the formula would be more complicated if kurtosis were defined as μ_4 / σ^4.

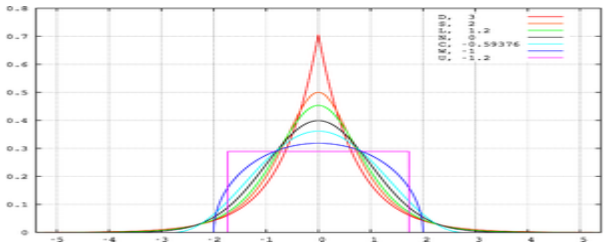
More generally, if X_1, ..., X_n are independent random variables all *having the same variance*, then

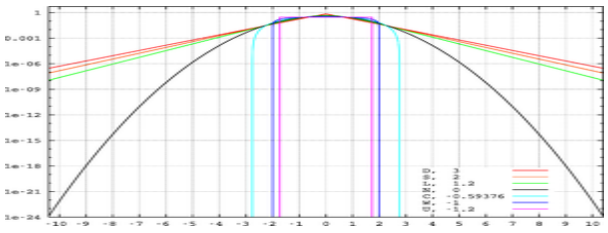
$$\operatorname{Kurt}\left(\sum_{i=1}^{n} X_i\right) = \frac{1}{n^2}\sum_{i=1}^{n}\operatorname{Kurt}(X_i),$$

whereas this identity would not hold if the definition did not include the subtraction of 3.

The fourth standardized moment must be at least 1, so the excess kurtosis must be −2 or more (the lower bound is realized by the Bernoulli distribution with p = ½, or "coin toss"); there is no upper limit and it may be infinite.

Kurtosis of well-known distributions





In this example we compare several well-known distributions from different parametric families. All densities considered here are unimodal and symmetric. Each has a mean and skewness of zero. Parameters were chosen to result in a variance of unity in each case. The images on the right show curves for the following seven densities, on a linear scale and logarithmic scale:

- D: Laplace distribution, a.k.a. double exponential distribution, red curve (two straight lines in the log-scale plot), excess kurtosis = 3
- S: hyperbolic secant distribution, orange curve, excess kurtosis = 2
- L: logistic distribution, green curve, excess kurtosis = 1.2
- N: normal distribution, black curve (inverted parabola in the log-scale plot), excess kurtosis = 0
- C: raised cosine distribution, cyan curve, excess kurtosis = −0.593762...
- W: Wigner semicircle distribution, blue curve, excess kurtosis = −1
- U: uniform distribution, magenta curve (shown for clarity as a rectangle in both images), excess kurtosis = −1.2.

Note that in these cases the platykurtic densities have bounded support, whereas the densities with positive or zero excess kurtosis are supported on the whole real line.

There exist platykurtic densities with infinite support,

- e.g., exponential power distributions with sufficiently large shape parameter b

and there exist leptokurtic densities with finite support.

- e.g., a distribution that is uniform between −3 and −0.3, between −0.3 and 0.3, and between 0.3 and 3, with the same density in the (−3, −0.3) and (0.3, 3) intervals, but with 20 times more density in the (−0.3, 0.3) interval

Sample kurtosis

For a sample of *n* values the **sample kurtosis** is

$$g_2 = \frac{m_4}{m_2^2} - 3 = \frac{\frac{1}{n}\sum_{i=1}^{n}(x_i - \overline{x})^4}{\left(\frac{1}{n}\sum_{i=1}^{n}(x_i - \overline{x})^2\right)^2} - 3$$

where m_4 is the fourth sample moment about the mean, m_2 is the second sample moment about the mean (that is, the sample variance), x_i is the i^{th} value, and $\overline{x}$ is the sample mean.

The formula

$$D = \frac{1}{n}\sum_{i=1}^{n}(x_i - \bar{x})^2$$

,

$$E = \frac{1}{nD^2}\sum_{i=1}^{n}(x_i - \bar{x})^4 - 3$$

is also used, where n—the sample size, *D*—the pre-computed variance, x_i—the value of the x'th measurement and $\bar{x}$—the pre-computed arithmetic mean.

Mean absolute error

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In statistics, the **mean absolute error** is a quantity used to measure how close forecasts or predictions are to the eventual outcomes. The mean absolute error (MAE) is given by

As the name suggests, the mean absolute error is an average of the absolute errors $e_i = f_i - y_i$, where f_i is the prediction and y_i the true value. Note that alternative formulations may include relative frequencies as weight factors.

The mean absolute error is a common measure of forecast error in time series analysis, where the terms "mean absolute deviation" is sometimes used in confusion with the more standard definition of mean absolute deviation. The same confusion exists more generally.

Interquartile range

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In descriptive statistics, the **interquartile range** (**IQR**), also called the **midspread** or **middle fifty**, is a measure of statistical dispersion, being equal to the difference between the third and first quartiles.

Unlike the (total) range, the interquartile range is a robust statistic, having a breakdown point of 25%, and is thus often preferred to the total range.

The IQR is used to build box plots, simple graphical representations of a probability distribution.

For a symmetric distribution (so the median equals the midhinge, the average of the first and third quartiles), half the IQR equals the median absolute deviation (MAD).

The median is the corresponding measure of central tendency.

From this table, the width of the interquartile range is 115 − 105 = 10.

Data set in a plain-text box plot

```
                    +-----+-+
 o        *     |-------|     | |---|
                    +-----+-+


+---+---+---+---+---+---+---+---+---+---+---+---+---+   number line
0   1   2   3   4   5   6   7   8   9  10  11  12
```

For this data set:

- lower (first) quartile ($Q1$, $x_{.25}$) = 7
- median (second quartile) (Med, $x_{.5}$) = 8.5
- upper (third) quartile ($Q3$, $x_{.75}$) = 9
- interquartile range, $\mathrm{IQR} = Q3 - Q1 = 2$

Interquartile range of distributions

The interquartile range of a continuous distribution can be calculated by integrating the probability density function (which yields the cumulative distribution function—any other means of calculating the CDF will also work). The lower quartile, Q1, is a number such that integral of the PDF from $-\infty$ to Q1 equals 0.25, while the upper quartile, Q3, is such a number that the integral from Q3 to ∞ equals 0.25; in terms of the CDF, the quartiles can be defined as follows:

$$Q1 = \mathrm{CDF}^{-1}(0.25)$$

$$Q3 = \mathrm{CDF}^{-1}(0.75)$$

The interquartile range and median of some common distributions are shown below

Distribution	Median	IQR
Normal	μ	$2\,\Phi^{-1}(0.75) \approx 1.349$
Laplace	μ	$2b\ln(2)$

Cauchy	μ	

Range (statistics)

In descriptive statistics, the **range** is the length of the smallest interval which contains all the data. It is calculated by subtracting the smallest observation (sample minimum) from the greatest (sample maximum) and provides an indication of statistical dispersion.

It is measured in the same units as the data. Since it only depends on two of the observations, it is a poor and weak measure of dispersion except when the sample size is large.

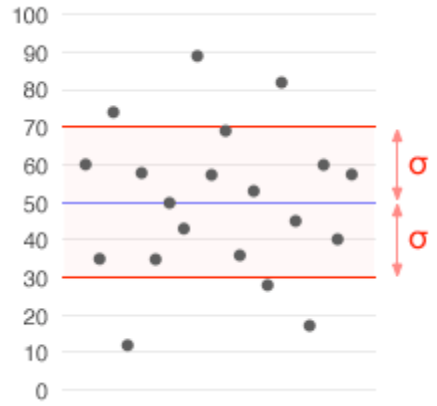
For a population, the range is greater than or equal to twice the standard deviation, which equality only for the coin toss (Bernoulli distribution with $p = ½$).

The range, in the sense of the difference between the highest and lowest scores, is also called the **crude range**. When a new scale for measurement is developed, then a potential maximum or minimum will emanate from this scale. This is called the **potential (crude) range**. Of course this range should not be chosen too small, in order to avoid a ceiling effect. When the measurement is obtained, the resulting smallest or greatest observation, will provide the **observed (crude) range**.

The *midrange* point, i.e. the point halfway between the two extremes, is an indicator of the central tendency of the data. Again it is not particularly robust for small samples.

Standard deviation

A plot of a normal distribution (or bell curve). Each colored band has a width of one standard deviation.



A data set with a mean of 50 (shown in blue) and a standard deviation (σ) of 20.

In probability theory and statistics, **standard deviation** is a measure of the variability or dispersion of a statistical population, a data set, or a probability distribution. A low standard deviation indicates that the data points tend to be very

close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values.

For example, the average height for adult men in the United States is about 70 inches (178 cm), with a standard deviation of around 3 in (8 cm). This means that most men (about 68 percent, assuming a normal distribution) have a height within 3 in (8 cm) of the mean (67–73 in (170–185 cm)), whereas almost all men (about 95%) have a height within 6 in (15 cm) of the mean (64–76 in (163–193 cm)). If the standard deviation were zero, then all men would be exactly 70 in (178 cm) high. If the standard deviation were 20 in (51 cm), then men would have much more variable heights, with a typical range of about 50 to 90 in (127 to 229 cm).

In addition to expressing the variability of a population, standard deviation is commonly used to measure confidence in statistical conclusions. For example, the margin of error in polling data is determined by calculating the expected standard deviation in the results if the same poll were to be conducted multiple times. The reported margin of error is typically about twice the standard deviation – the radius of a 95% confidence interval. In science, researchers commonly report the standard deviation of experimental data, and only effects that fall far outside the range of standard deviation are considered statistically significant—normal random error or variation in the measurements is in this way distinguished from causal variation. Standard deviation is also important in finance, where the standard deviation on the rate of return on an investment is a measure of the volatility of the investment.

The term *standard deviation* was first used[1] in writing by Karl Pearson[2] in 1894, following his use of it in lectures. This was as a replacement for earlier alternative names for the same idea: for example Gauss used "mean error".[3] A useful property of standard deviation is that, unlike variance, it is expressed in the same units as the data.

When only a sample of data from a population is available, the population standard deviation can be estimated by a modified quantity called the sample standard deviation, explained below.

Basic example

Consider a population consisting of the following values:

There are eight data points in total, with a mean (or average) value of 5:

To calculate the population standard deviation, we compute the difference of each data point from the mean, and square the result:

Next we average these values and take the square root, which gives the standard deviation:

Therefore, the above has a population standard deviation of 2.

Note that we are assuming that we are dealing with a complete population. If our 8 values are obtained by random sampling from some parent population, we might prefer to compute the **sample standard deviation** using a denominator of 7 instead of 8. See below for an explanation.

Definition

Probability distribution or random variable

Let X be a random variable with mean value μ:

Here the operator E denotes the average or expected value of X. Then the **standard deviation** of X is the quantity

That is, the standard deviation σ (sigma) is the square root of the average value of $(X - \mu)^2$.

In the case where X takes random values from a finite data set , with each value having the same probability, the standard deviation is

or, using summation notation,

The standard deviation of a (univariate) probability distribution is the same as that of a random variable having that distribution. Not all random variables have a standard deviation, since these expected values need not exist. For example, the standard deviation of a random variable which follows a Cauchy distribution is undefined because its expected value is undefined.

[edit]Continuous random variable

Continuous distributions usually give a formula for calculating the standard deviation as a function of the parameters of the distribution. In general, the standard deviation of a continuous real-valued random variable X with probability density function$p(x)$ is

where

and where the integrals are definite integrals taken for x ranging over the range of X.

Discrete random variable or data set

The standard deviation of a discrete random variable is the root-mean-square (RMS) deviation of its values from the mean.

If the random variable X takes on N values (which are real numbers) with equal probability, then its standard deviation σ can be calculated as follows:

1. Find the mean, , of the values.
2. For each value X_i calculate its deviation () from the mean.
3. Calculate the squares of these deviations.
4. Find the mean of the squared deviations. This quantity is the varianceσ^2.
5. Take the square root of the variance.

This calculation is described by the following formula:

where is the arithmetic mean of the values x_i, defined as:

If not all values have equal probability, but the probability of value x_i equals p_i, the standard deviation can be computed by:

and

where

and N' is the number of non-zero weight elements.

The standard deviation of a data set is the same as that of a discrete random variable that can assume precisely the values from the data set, where the point mass for each value is proportional to its multiplicity in the data set.

Example

Suppose we wished to find the standard deviation of the data set consisting of the values 3, 7, 7, and 19.

Step 1: find the arithmetic mean (average) of 3, 7, 7, and 19,

Step 2: find the deviation of each number from the mean,

Step 3: square each of the deviations, which amplifies large deviations and makes negative values positive,

Step 4: find the mean of those squared deviations,

Step 5: take the non-negative square root of the quotient (converting squared units back to regular units),

So, the standard deviation of the set is 6. This example also shows that, in general, the standard deviation is different from the mean absolute deviation (which is 5 in this example).

Note that if the above data set represented only a sample from a greater population, a modified standard deviation would be calculated (explained below) to estimate the population standard deviation, which would give 6.93 for this example.

Simplification of formula

The calculation of the sum of squared deviations can be simplified as follows:

Applying this to the original formula for standard deviation gives:

This can be memorized as taking the square root of (the average of the squares less the square of the average).

Estimating population standard deviation

In the real world, finding the standard deviation of an entire population is unrealistic except in certain cases, (such as standardized testing), where every member of a population is sampled. In most cases, the standard deviation σ is estimated by examining a random sample taken from the population. Some estimators are given below:

With standard deviation of the sample

An estimator for σ sometimes used is the **standard deviation of the sample**, denoted by "s_n" and defined as follows:

This estimator has a uniformly smaller mean squared error than the "sample standard deviation" (see below), and is the maximum-likelihood estimate when the population is normally distributed. But this estimator, when applied to a small or moderately-sized sample, tends to be too low: it is a biased estimator.

With sample standard deviation

The most common estimator for σ used is an adjusted version, the **sample standard deviation,** denoted by "s" and defined as follows:

where is the sample and is the mean of the sample. This correction (the use of $N - 1$ instead of N) is known as Bessel's correction. The reason for this correction is that s^2 is an unbiased estimator for the variance σ^2 of the underlying population, if that variance exists and the sample values are drawn independently with replacement. However, s is *not* an unbiased estimator for the standard deviation σ; it tends to underestimate the population standard deviation.

Note that the term "standard deviation of the sample" is used for the *uncorrected* estimator (using N) whilst the term "sample standard deviation" is used for the *corrected* estimator (using $N - 1$). The denominator $N - 1$ is the number of degrees of freedom in the vector of residuals, .

With interquartile range

The statistic

(1.35 is an approximation) where IQR is the interquartile range of the sample, is a consistent estimate of σ. The interquartile range IQR is the difference of the 3rd quartile of the data and the 1st quartile of the data. The asymptotic relative efficiency (ARE) of this estimator with respect to the one from sample standard deviation is 0.37. Hence, for normal data, it is better to use the one from sample standard deviation; when data is with thicker tails, this estimator can be more efficient.[4][*not in citation given*][*dubious– discuss*]

Other estimators

Further information: Unbiased estimation of standard deviation

Although an unbiased estimator for σ is known when the random variable is normally distributed, the formula is complicated and amounts to a minor correction: see Unbiased estimation of standard deviation for more details. Moreover, unbiasedness, (in this sense of the word), is not always desirable: see bias of an estimator.

if we take all weights equal to 1.

Mean difference

The **mean difference** is a measure of statistical dispersion equal to the average absolute difference of two independent values drawn from a probability distribution. A related statistic is the relative mean difference, which is the mean difference divided by the arithmetic mean. An important relationship is that the relative mean difference is equal to twice the Gini coefficient, which is defined in terms of the Lorenz curve.

The mean difference is also known as the **absolute mean difference** and the Gini **mean difference**. The mean difference is sometimes denoted by Δ or as MD. The mean deviation is a different measure of dispersion.

Calculation

For a population of size n, with a sequence of values y_i, $i = 1$ to n:

$$MD = \frac{1}{n(n-1)} \Sigma_{i=1}^{n} \Sigma_{j=1}^{n} |y_i - y_j|$$

For a discrete probability function $f(y)$, where y_i, i = 1 to n, are the values with nonzero probabilities:

$$MD = \Sigma_{i=1}^{n} \Sigma_{j=1}^{n} f(y_i) f(y_j) |y_i - y_j|$$

For a probability density function $f(x)$:

$$MD = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} f(x)\, f(y)\, |x - y|\, dx\, dy$$

For a cumulative distribution function F(x) with inverse x(F):

$$MD = \int_{0}^{1} \int_{0}^{1} |x(F_1) - x(F_2)|\, dF_1\, dF_2$$

The inverse $x(F)$ may not exist because the cumulative distribution function has jump discontinuities or intervals of constant values. However, the previous formula can still apply by generalizing the definition of $x(F)$:

$x(F_1) = \inf \{y : F(y) \geq F_1\}$.

Relative mean difference

When the probability distribution has a finite and nonzero arithmetic mean, the relative mean difference, sometimes denoted by ∇ or RMD, is defined by

$$RMD = \frac{MD}{\text{arithmetic mean}}.$$

The relative mean difference quantifies the mean difference in comparison to the size of the mean and is a dimensionless quantity. The relative mean difference is equal to twice the Gini coefficient which is defined in terms of the Lorenz curve. This relationship gives complementary perspectives to both the relative mean difference and the Gini coefficient, including alternative ways of calculating their values.

Compared to standard deviation

Both the standard deviation and the mean difference measure dispersion -- how spread out are the values of a population or the probabilities of a distribution. The mean difference is not defined in terms of a specific measure of central tendency, whereas the standard deviation is defined in terms of the deviation from the arithmetic mean. Because the standard deviation squares its differences, it tends to give more weight to larger differences and less weight to smaller differences compared to the mean difference. When the arithmetic mean is finite, the mean difference will also be finite, even when the standard deviation is infinite. See the examples for some specific comparisons.

Sample estimators

For a random sample *S* from a random variable ***X***, consisting of *n* values y_i, the statistic

$$MD(S) = \frac{\sum_{i=1}^{n} \sum_{j=1}^{n} |y_i - y_j|}{n(n-1)}$$

is a consistent and unbiasedestimator of MD(***X***).

The statistic:

$$RMD(S) = \frac{\sum_{i=1}^{n} \sum_{j=1}^{n} |y_i - y_j|}{(n-1)\sum_{i=1}^{n} y_i}$$

is a consistentestimator of RMD(***X***), but is not, in general, unbiased.

Confidence intervals for RMD(***X***) can be calculated using bootstrap sampling techniques.

There does not exist, in general, an unbiased estimator for RMD(***X***), in part because of the difficulty of finding an unbiased estimation for multiplying by the inverse of the mean. For example, even where the sample is known to be taken from a random variable ***X***(*p*) for an unknown *p*, and ***X***(*p*) - 1 has the Bernoulli distribution, so that Pr(***X***(*p*) = 1) = 1 − *p* and Pr(***X***(*p*) = 2) = *p*, then

RMD(***X***(*p*)) = 2*p*(1 − *p*)/(1 + *p*).

But the expected value of any estimator *R*(***S***) of RMD(***X***(*p*)) will be of the form:

$$E(R(S)) = \sum_{i=0}^{n} p^i (1-p)^{n-i} r_i$$

where the r_i are constants. So E(R(**S**)) can never equal RMD(***X***(*p*)) for all *p* between 0 and 1.

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Course Name: RURAL SOCIOLOGY

Rural sociology is a field of sociology associated with the study of social life in non-metropolitan areas. It is the scientific study of social arrangements and behaviour amongst people distanced from points of concentrated population or economic activity. Like any sociological discipline, rural sociology involves the examination of statistical data, interviews, social theory, observation, survey research, and many other techniques.

In contrast to rural sociology, urban sociology is the study of urban social life.

Agribusiness is one focus of rural sociology and much of the field is dedicated to the economics of farm production. Other areas of study include rural migration and other demographic patterns, environmental sociology, amenity-led development, public lands policies, so-called "boomtown" development, social disruption, rural health care and education polices, and etc.

Definition of "rural"

Sociologists define "rural" as those areas which are not urban in nature. The line between urban and rural is quite arbitrary, although rural sociologists in America often use the U.S. Census Bureau's definition of rural as being an area of fewer than 1000 people per square mile.[1] The 2000 Census reported that rural America was home to nearly 21% of the U.S. population (59,274,000 people).

History of rural sociology

Rural sociology became prominent during the late industrial revolution in France, Ireland, Prussia, Scandinavia, and the US. As urban incomes and quality of life rose, a social gap appeared between urban and rural dwellers.

Early works of Max Weber in the late 19th century has been concerned with rural sociology. In the 1920s, Edmund deS. Brunner studied some 140 villages as director of the Institute for Social and Religious Research, he reported that as agriculture mechanized, farms were growing larger.

After World War II, modern rural sociology began to appear in France, Germany, Italy, the Netherlands, and the UK.

Issues in rural America

Rural economic trends in the United States are complex, as many regions are facing economic decline and rural exodus, while other regions -- in particular, coastal and mountainous areas -- are facing increased economic stimulus and an influx of new residents. Many traditionally rural industries such as mining, ranching, and agriculture are no longer economically viable, although in some regions these industries are being replaced by new, non-traditional industries such as information technology, resort towns, tourism, and art. These industries are providing economic

growth and social diversity to areas that were otherwise declining.The Rural Rebound: Recent Nonmetropolitan Demographic Trends in the United StatesAmerican Center for the West

Currently, rural capital is flowing into either urban areas or a cluster of some 33-40% of rural counties, namely the intermountain West, the Ozarks, coastal regions, counties along I-80 in Nebraska, and the Kansas City Metropolitan Area. This growth of wealth is concentrated near urban areas, transportation corridors, and scenic amenities (Drabenstott, 1999.

Many parts of rural America are experiencing an economic slump, especially those economically dependent on agribusiness. For instance in 1999 the prices for corn, wheat, and soybeans were all down approx. 33% from the 1995-1998 average. Food production is being subsidized by off-farm income. Some farmers are working second and third jobs to support their farms. In 1974 80% of farm operators were primarily farmers. By 1997 that had dropped to 60% (McDaniel, 2000), (Lee, 2000).

Some natural resource-based industries within rural areas are experiencing resource depletion, whereas other rural areas in states such as Wyoming, Colorado, and New Mexico are seeing huge economic growth due to the extraction of natural gas and other minerals.

Rural society is faced with various problems including the environmental degradation and overuse of water resources, the establishment and inadequate regulation of toxic waste dumps, and poverty. The loss of rural population to urban areas is also an area of concern, especially in northern states, such as North Dakota.

Key topics in rural sociology

- agribusiness
- Diffusion of innovations
- role homogeneity
- rural exodus
- types of rural communities
- Rural community development

.A **metropolitan area** is a large population center consisting of a large metropolis and its adjacent zone of influence, or of more than one closely adjoining neighboring central cities and their zone of influence. One or more large cities may serve as its hub or hubs, and the metropolitan area is normally named after either the largest or most important central city within it.

General definition

There has been no significant change in the basic metropolitan area "concept" since its adoption in 1950 [1], though significant changes in geographic distributions have occurred since, and is expected to further evolve through time. [2] Because of the fluidity and evolution of the "term" metropolitan statistical areas, the colloquial reference by the general population and media to define an MSA is with a more

familiar reference to "metro service area, metro area, metro, or MSA" and widely intimated to mean the aggregate geographic area inclusive of not only a well known city population, but also its inner city, suburban, exurban and sometimes rural surrounding populations, all of which are influenced by employment, transportation, and commerce of the more largely well known urban city.

A metropolitan area usually combines an agglomeration (the contiguous built-up area) with peripheral zones not themselves necessarily urban in character, but closely bound to the center by employment or commerce. These zones are also sometimes known as a **commuter belt**, and may extend well beyond the urban periphery depending on the definition used. It is mainly the area that is not part of the city but is connected to the city. For example, Pasadena, California would be added to Los Angeles' metro area. While it isn't the same city, it is connected, and Pasadena is also located in Los Angeles County.

The core cities in a polycentric metropolitan area need not be physically connected by continuous built-up development, distinguishing the concept from conurbation, which requires urban contiguity. In a metropolitan area, it is sufficient that central cities together constitute a large population nucleus with which other constituent parts have a high degree of integration.

In practice the parameters of metropolitan areas, in both official and unofficial usage, are not consistent. Sometimes they are little different from an urban area, and in other cases they cover broad regions that have little relation to the traditional concept of a city as a single urban settlement. Thus all metropolitan area figures should be treated as interpretations rather than as hard facts. Metro area population figures given by different sources for the same place can vary by millions, and there is a tendency for people to promote the highest figure available for their own "city". However the most ambitious metropolitan area population figures are often better seen as the population of a "metropolitan region" than of a "city".[*citation needed*]

Differences in terminology by country

The term metropolitan area is sometimes abbreviated to 'metro', for example in Metro Manila and Washington, DC Metro Area, which in the latter case should not be mistaken to mean the metro rail system of the city. Although it can be compared in composition to many of the world's metropolitan areas, in France the term for the region around an urban core linked by commuting ties is an *aire urbaine* (officially translated as "urban area"). In Japan that would be *toshiken* (都市圏?, lit. bloc of cities).

Country official unique definitions

Australia areas under the unifying influence of one or more major towns or cities. Each capital city forms its own Statistical Division, and the population of the SD is the most-often quoted figure for that city's population. Statistical Districts are defined as non-capital but predominantly urban areas. The statistical divisions that encompass the capital cities are commonly though unofficially called 'metropolitan areas'.[3]

european Union

The European Union's statistical agency, Eurostat, has created a concept named Larger Urban Zone (LUZ). The LUZ represents an attempt at a harmonised definition of the metropolitan area, and the goal was to have an area from a significant share of the resident commute into the city, a concept known as the “functional urban region”.

Republic of India

In India, the Census Commission defines a metropolitan city as one having a population of over 40 lakh (4 million).[5] Mumbai, Delhi, Chennai, Kolkata, Bengaluru, Hyderabad, are the six cities that qualify. Residents of these cities are also entitled to a higher House rent allowance. The figure only applies to the city region and not the conurbation.

United States

The Office of Management and Budget defines "Core Based Statistical Areas" used for statistics purposes among federal agencies. Each CBSA is based on a core urban area and is composed of the counties which comprise that core as well as any surrounding counties that are tightly socially or economically integrated with it. These areas are designated as either metropolitan or micropolitan statistical areas, based on population size; a "metro" area has an urban core of at least 50,000 residents, while a "micro" area has less than 50,000 but at least 10,000.[6]

Additional terms

At the turn of the 19th century only 3 percent of the world's population was urbanized. During the 20th and into the 21st century the presence of humans in urban areas has increased dramatically. Within the first quarter of the 21st century it is expected that more than half of the world's population will live in urban areas, if this is not already the case.[7]

By 2025, according to the *Far Eastern Economic Review*, Asia alone will have at least 10 hypercities, those with 20 million or more, including Delhi (~20 million), Jakarta (24.9 million people), Dhaka (25 million), Karachi (26.5 million), Shanghai (27 million) and Mumbai (33 million).[8] Lagos has grown from 300,000 in 1950 to an estimated 15 million today, and the Nigerian government estimates that city will have expanded to 25 million residents by 2015.[9]

If several metropolitan areas are located in succession, metropolitan areas are sometimes grouped together as a **megalopolis** (plural *megalopoleis*, also *megalopolises*). A megalopolis consists of several interconnected cities (and their suburbs), between which people commute, and which are so close together that suburbs can claim to be suburbs of more than one city. Another name for a megalopolis is a metroplex (short for metropolitan complex) or conurbation.

This concept was first proposed by the French geographer Jean Gottmann in his book *Megalopolis*, a study of the northeastern United States. One famous example is the BosWash megalopolis consisting of Boston, Providence, Hartford, New York City, Newark, Philadelphia, Wilmington, Baltimore, Washington, and vicinity.

The biggest one is the Taiheiyō Belt (the Pacific Megalopolis) in Japan consisting of Tokyo, Shizuoka, Nagoya, Osaka, Okayama, Hiroshima, Fukuoka and vicinity. The main transportation such as Shinkansen and expressways is constructed along these cities. The population of this megalopolis is around 82.9 million.

Guangdong Province's Pearl River Delta is a huge megalopolis with a population of 48 million that extends from Hong Kong and Shenzhen to Guangzhou. Some projections assume that by 2030 up to 1 billion people will live in China's urban areas. Even rather conservative projections predict an urban population of up to 800 million people. In its most recent assessment, the UN Population Division estimated an urban population of 1 billion in 2050.[10]

The megalopolises in Europe are the Milan metropolitan area (pop. 7.4 million) in Italy, Ruhr Area (pop. 5.3 million) in Germany, the Randstad (Knooppunt Arnhem-Nijmegen and Brabantse Stedenrij are counted with the Randstad) in the Netherlands (pop. 7.4 million), the Flemish Diamond in Belgium (pop. 5.5 million), Ile de France in France and the metropolitan area of London and Moscow, as well as several 'smaller' agglomerations, such as the Meuse-Rhine Euregion, the Ems-Dollart Euregion, the Lille-Kortrijk-Tournai Euregion and Metropoly of Upper Silesia in Poland (17 cities around Katowice with a total population of over 2 million). Together this megalopolis has an estimated population of around 50 million.

Africa's first megalopolis is situated in the urban portion of Gauteng Province in South Africa, comprising the conurbation of Johannesburg, and the metropolitan areas of Pretoria and the Vaal Triangle, otherwise known as the PWV.

It has been suggested that the whole of south-eastern, Midland and parts of northern England will evolve into a megalopolis dominated by London. Clearly when usage is stretched this far, it is remote from the traditional conception of a city.

Megacity is a general term for agglomerations or metropolitan areas which usually have a total population in excess of 10 million people. In Canada, "megacity" can also refer informally to the results of merging a central city with its suburbs to form one large municipality. A Canadian "megacity", however, is not necessarily an entirely urbanized area, as many cities so named have both rural and urban portions. It also doesn't need 10 million inhabitants to bear the designation. Moreover, Canadian "megacities" do not constitute large metropolitan areas in a global sense. For example, Toronto has a metropolitan population of 5.5 million but is part of a much larger metropolitan area home to over 8.1 million people.

Census population of a metro area is not the city population. However, it better demonstrates the population of the city. Los Angeles may only have a city population of near 4,000,000, but has two metropolitan area populations, depending on

definition, 13 million in the core area and 18 million in the Combined statistical area.

Social theory

Social theory is the use of theoretical frameworks to study and interpret social structures and phenomena within a particular school of thought.

An essential tool used by scholars in the analysis of society, social theories are interdisciplinary, drawing ideas from and contributing to such disciplines as anthropology, economics, history, human geography, literary theory, mass communications, philosophy, sociology, and theology.

The origins of social theory are difficult to pinpoint, but many arguments return to Ancient Greece. Berch Berberoglu cites Plato, Socrates and Aristotle as influencing social theory throughout the enlightenment up to the late nineteenth and early twentieth century (Berberoglu 2005, p. xi). "Critical" social theories, such as neomarxist theories and feminist theories, argue that because theories are generally based on premises that entail normative positions, it is necessary to critique the ideological aspects of theories and related oppressive social relations.

Social theory as a discipline

Harrington discusses the etymology of social theory, stating that while the term did not exist in any language before the twentieth century, its origins are ancient and lie in two words; 'social' from the Latin *socius* and 'theory' from the Greek *theoria* (Harrington 2005). Social theorising aided the Greeks in making sense of their lives, and in questioning the value and meaning of things around them.

Social theory as a distinct discipline emerged in the 20th century and was largely equated with an attitude of critical thinking, based on rationality, logic and objectivity, and the desire for knowledge through aposteriori methods of discovery, rather than apriori methods of tradition. With this in mind it is easy to link social theory to deeper seated philosophical discussions.

Social theory in relation to the natural sciences

Compared to disciplines within the objective natural sciences -- such as physics or chemistry -- social theorists may make less use of the scientific method, and their conclusions and data can be interpreted more subjectively. While standards of rigor do exist within quantitative social science methodologies, their precision is bounded by a degree of uncertainty inherent in human behavior. However, because experiments in the natural sciences are necessarily social artifacts, and social theory treats social artifacts as being constructed, social theorists posit that even experiments in the natural sciences and their concomitant results are social constructions. Social theories can complement research in the natural sciences and vice-versa.

The concept that social theory may supersede certain aspects of the natural sciences is called the social construction of reality. Social theory takes knowledge, the manner in which we acquire knowledge, and the institutions by which knowledge is reified and disseminated among a human collectivity to be socially constructed. In effect, the laws of nature can only be derived using social tools within a social context. According to social theory, the understanding of natural phenomena is predicated on the understanding of social phenomena, as the interpretation of natural phenomena is a social activity.

This interpretation of the natural sciences leads to some deeper epistemological questions. By questioning the methods by which we deem knowledge to be "objective," we necessarily put into question any scientific knowledge whatsoever. Social theory does not exist in mutual exclusion to the natural sciences; one is often complementary to the other. Rather, social theory calls for natural scientists to examine their methodologies with a critical eye by situating said methodologies within a social context.

History

Pre-classical social theorists

Prior to 19th century, social theory took largely narrative and normative traits. Expressed in story form, it both assumed ethical principles and recommended moral acts. Thus one can regard religious figures as the earliest social theorists.

Saint Augustine (354 - 430) and St. Thomas Aquinas (*circa* 1225 - 1274) concerned themselves exclusively with a just society. St. Augustine describes late Ancient Roman society but through a lens of hatred and contempt for what he saw as false Gods, and in reaction theorized The City of God. Similarly, in China, Master Kong (otherwise known as Confucius) (551 - 479 BCE) envisaged a just society that went beyond his contemporary society of the Warring States. Later on, also in China, Mozi (*circa* 470 - *circa* 390 BCE) recommended a more pragmatic sociology, but ethical at base.

In the 18th century, after Montesquieu's The Spirit of Law established that social elements influences human nature, pre-classical period of social theories have changed to a new form that provide the basic ideas for social theory. Such as: evolution, philosophy of history, social life and social contract, public and general will, competition in social space, organistic pattern for social description and ... Jean-Jacques Rousseau in this time played a significant role in social theory. He revealed the origin of inequality, analyzed the social contract(and social compact) that forms social integration and defined the social sphere or civil society. He also emphasized that man has the liberty to change his world, a revolutionary assertion that made it possible to program and change society.

Classical social theory

The first “modern” social theories (known as classical theories) that begin to resemble the analytic social theory of today developed almost simultaneously with

the birth of the science of sociology. Auguste Comte (1798 - 1857), known as the 'father of sociology', laid the groundwork for one of the first social theories - social evolutionism. In the 19th century three great classical theories of social and historical change emerged: the social evolutionism theory (of which Social Darwinism forms a part), the social cycle theory and the Marxist historical materialism theory.

Another early modern theorist, Herbert Spencer (1820 - 1903), coined the term "survival of the fittest" (and incidentally recommended avoidance of governmental action on behalf of the poor). Some Post-Modern social theorists like Shepard Humphries, draw heavily upon Spencer's work and argue that many of his observations are timeless (just as relevant in 2008 as 1898). Vilfredo Pareto (1848 - 1923) and Pitirim A. Sorokin argued that 'history goes in cycles', and presented the social cycle theory to illustrate their point. Ferdinand Tönnies (1855 - 1936) made *community* and *society* (*Gemeinschaft and Gesellschaft*, 1887) the special topics of the new science of "sociology", both of them based on different modes of will of social actors. Emile Durkheim postulated a number of major theories regarding anomie and functionalism. Max Weber theorized on bureaucracy, religion, and authority. Karl Marx theorized on the class struggle and social progress towards communism and laid the groundwork for the theory that became known as Marxism. Marxism became more than a theory, of course, carrying deep implications over the course of 20th century history (including the Russian Revolution of 1917).

Most of the 19th century pioneers of social theory and sociology, like Saint-Simon, Comte, Marx, John Stuart Mill or Spencer, never held university posts. Most people regarded them as philosophers, because much of the their thinking was interdisciplinary and "outside the box" of the existing disciplines of their time (eg:, philology, law, and history).

Many of the classical theories had one common factor: they all agreed that the history of humanity is pursuing a certain fixed path. They differed on where that path would lead: social progress, technological progress, decline or even fall, etc. Social cycle theorists were much more skeptical of the Western achievements and technological progress, however, arguing that progress is but an illusion in of the ups and downs of the historical cycles. The classical approach has been criticized by many modern sociologists and theorists, among them Karl Popper, Robert Nisbet, Charles Tilly and Immanuel Wallerstein.

Modern social theory

Much of 19th-century classical social theory has been expanded upon to create newer, more contemporary social theories such as Multilineal theories of evolution (neoevolutionism, sociobiology, theory of modernization, theory of post-industrial society) and various strains of Neo-Marxism.

In the late 19th and early 20th centuries, social theory became most closely related to academic sociology while other related studies such as anthropology, philosophy, and social work branched out into their own disciplines. Such subjects as "philosophy of history" and other such multi-disciplinary subject matter became part of social theory as taught under sociology.

Attempts to recapture a space for discussion free of disciplines began in earnest in the late 1920s and early 1930s. The Frankfurt Institute for Social Research provides the most successful historical example. The Committee on Social Thought at the University of Chicago followed in the 1940s. In the 1970s, programs in Social and Political Thought were established at Sussex and York. Others followed, with various different emphases and structures, such as Social Theory and History (University of California, Davis). Cultural Studies programs, notably that of Birmingham University, extended the concerns of social theory into the domain of culture and thus anthropology. A chair and undergraduate program in social theory was established at the University of Melbourne and a number of universities now specialize in social theory (UC-Santa Cruz is one example). Social theory at present seems to be gaining more acceptance as a classical academic discipline.

In modern times, generally speaking, social theory began to stress free will, individual choice, subjective reasoning, and the importance of unpredictable events in place of the classic determinism – thus social theory become much more complex. Rational Choice Theory and Symbolic Interactionism furnish two examples. Most modern sociologists deem there are no great unifying 'laws of history', but rather smaller, more specific, and more complex laws that govern society.

Post-modern social theory

Scholars and historians most commonly hold postmodernism to be a movement of ideas arising from, but also critical of elements of modernism[*citation needed*]. Because of the wide range of uses of the term, different elements of modernity are chosen as being continuous, and different elements of modernity are held to be critiqued. Each of the different uses also is rooted in some argument about the nature of knowledge, known in philosophy as epistemology. Individuals who use the term are arguing that either there is something fundamentally different about the transmission of meaning, or that modernism has fundamental flaws in its system of knowledge].

The argument for the necessity of the term states that economic and technological conditions of our age have given rise to a decentralized, media-dominated society in which ideas are simulacra and only inter-referential representations and copies of each other, with no real original, stable or objective source for communication and meaning. Globalization, brought on by innovations in communication, manufacturing and transportation, is often[*citation needed*] cited as one force which has driven the decentralized modern life, creating a culturally pluralistic and interconnected global society lacking any single dominant center of political power, communication, or intellectual production. The postmodern view is that inter-subjective knowledge, and not objective knowledge is the dominant form of discourse under such conditions, and the ubiquity of copies and dissemination fundamentally alters the relationship between reader and what is read, between observer and the observed, between those who consume and those who produce. Not all people who use the term postmodern or postmodernism see these developments as positive.[*citation needed*] Users of the term often argue[*citation needed*] that their ideals have arisen as the result of particular economic and social conditions, including what is described as "late capitalism" and the growth of broadcast media, and that such conditions have pushed society into a new historical period.

The term "postmodernism" was brought into social theory in 1971 by the Arab American Theorist Ihab Hassan in his book: The Dismemberment of Orpheus: Toward a Postmodern Literature. In 1979 Jean-François Lyotard wrote a short but influential work *The Postmodern Condition: A report on knowledge*. Jean Baudrillard, Michel Foucault, and Roland Barthes were influential in 1970s in developing postmodern theory.

Theory construction

Almost all good research is guided by theory. Selecting or creating appropriate theory for use in examining an issue is thus an important skill for any researcher. Important distinctions: a **theoretical orientation** (or paradigm) is a worldview, the lens through which one organizes experience (i.e. thinking of human interaction in terms of power or exchange); a **theory** is an attempt to explain and predict behavior in particular contexts. A theoretical orientation cannot be proven or disproven; a theory can. Having a theoretical orientation that sees the world in terms of power and control, I could create a theory about violent human behavior which includes specific causal statements (e.g. being the victim of physical abuse leads to psychological problems). This could lead to an **hypothesis** (prediction) about what I expect to see in a particular sample, e.g. “a battered child will grow up to be shy or violent.” I can then test my hypothesis by looking to see if it is consistent with **data** in the real world. I might, for instance, review hospital records to find children who were abused, then track them down and administer a personality test to see if they show signs of being violent or shy. The selection of an appropriate (i.e. useful) theoretical orientation within which to develop a potentially helpful theory is the bedrock of social science.

In agriculture, **agribusiness** is a generic term for the various businesses involved in food production, including farming and contract farming, seed supply, agrichemicals, farm machinery, wholesale and distribution, processing, marketing, and retail sales. The term has two distinctly different connotations depending on context.

Within the agriculture industry, agribusiness is widely used simply as a convenient portmanteau of agriculture and business, referring to the range of activities and disciplines encompassed by modern food production. There are academic degrees in and departments of agribusiness, agribusiness trade associations, agribusiness publications, and so forth, worldwide. Here, the term is only descriptive, and is synonymous in the broadest sense with food industry.

Among critics of large-scale, industrialized, vertically integrated food production, the term *agribusiness* is used negatively, synonymous with *corporate farming*. As such, it is often contrasted with smaller family-owned farms. Negative connotations are also derived from the negative associations of "business" and "corporation" by critics of capitalism or corporate excess. As concern over global warming intensifies, biofuels derived from food crops quickly emerged as a practical answer to the energy crisis. Adding corn ethanol to gasoline or using palm oil for biodiesel makes the fuel burn more cleanly, stretches oil supplies, and perhaps most attractive to some politicians,

provides a nice boost to big agribusiness. In Europe and in the US, increasing biofuels was mandated by law.[1]

An example of an agribusiness was the Old North State Winegrowers Cooperative in North Carolina. Wine grape farmers came together to not only sell their grapes but to share a winery, winemaker and marketing brand together. The cooperative failed in 2006, three years after opening its winery. [2] [3]

Many progressive agribusinesses are now operating online businesses. Rising fuel costs are increasingly adding financial burdens on the day to day running of agricultural companies. An example of an online agribusiness is FarmingPages.com[1].

Agriculture is the production of food and goods through farming and forestry. Agriculture was the key development that led to the rise of human civilization, with the husbandry of domesticated animals and plants (i.e. crops) creating food surpluses that enabled the development of more densely populated and stratified societies. The study of agriculture is known as agricultural science.

Agriculture encompasses a wide variety of specialties and techniques, including ways to expand the lands suitable for plant raising, by digging water-channels and other forms of irrigation. Cultivation of crops on arable land and the pastoral herding of livestock on rangeland remain at the foundation of agriculture. In the past century there has been increasing concern to identify and quantify various forms of agriculture. In the developed world the range usually extends between sustainable agriculture (e.g. permaculture or organic agriculture) and intensive farming (e.g. industrial agriculture).

Modern agronomy, plant breeding, pesticides and fertilizers, and technological improvements have sharply increased yields from cultivation, and at the same time have caused widespread ecological damage and negative human health effects.[*citation needed*] Selective breeding and modern practices in animal husbandry such as intensive pig farming (and similar practices applied to the chicken) have similarly increased the output of meat, but have raised concerns about animal cruelty and the health effects of the antibiotics, growth hormones, and other chemicals commonly used in industrial meat production.[*citation needed*]

The major agricultural products can be broadly grouped into foods, fibers, fuels, raw materials, pharmaceuticals and stimulants, and an assortment of ornamental or exotic panget products. In the 2000s, plants have been used to grow biofuels, biopharmaceuticals, bioplastics,[1] and pharmaceuticals.[2] Specific foods include cereals, vegetables, fruits, and meat. Fibers include cotton, wool, hemp, silk and flax. Raw materials include lumber and bamboo. Stimulants include tobacco, alcohol, opium, cocaine,and digitalis. Other useful materials are produced by plants, such as resins. Biofuels include methane from biomass, ethanol, and biodiesel. Cut flowers, nursery plants, tropical fish and birds for the pet trade are some of the ornamental products.

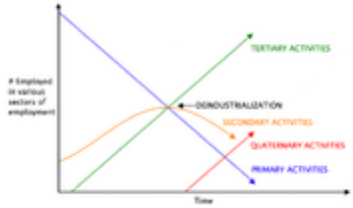
In 2007, about one third of the world's workers were employed in agriculture. Though in 2003 agricultural employees were fewer but due to the agricultural awareness it increased rapidly in 2008– the services sector overtook agriculture as the economic sector employing the most people worldwide.[3] Despite the fact that agriculture employs over one-third of the world's population, agricultural production accounts for less than five percent of the gross world product (an aggregate of all gross domestic products).

Etymology

The word *agriculture* is the English adaptation of Latin *agricultūra*, from *ager*, "a field",[4] and *cultūra*, "cultivation" in the strict sense of "tillage of the soil".[5] Thus, a literal reading of the word yields "tillage of a field / of fields"...

Overview

Agriculture has played a key role in the development of human civilization. Until the Industrial Revolution, the vast majority of the human population labored in agriculture. Development of agricultural techniques has steadily increased agricultural productivity, and the widespread diffusion of these techniques during a time period is often called an agricultural revolution. A remarkable shift in agricultural practices has occurred over the past century in response to new technologies. In particular, the Haber-Bosch method for synthesizing ammonium nitrate made the traditional practice of recycling nutrients with crop rotation and animal manure less necessary.



The percent of the human population working in agriculture has decreased over time.

Synthetic nitrogen, along with mined rock phosphate, pesticides and mechanization, have greatly increased crop yields in the early 20th century. Increased supply of grains has led to cheaper livestock as well. Further, global yield increases were experienced later in the 20th century when high-yield varieties of common staple grains such as rice, wheat, and corn (maize) were introduced as a part of the Green Revolution. The Green Revolution exported the technologies (including pesticides and synthetic nitrogen) of the developed world to the developing world. Thomas Malthus famously predicted that the Earth would not be able to support its growing population, but technologies such as the Green Revolution have allowed the world to produce a surplus of food.[6]

Many governments have subsidized agriculture to ensure an adequate food supply. These agricultural subsidies are often linked to the production of certain

commodities such as wheat, corn (maize), rice, soybeans, and milk. These subsidies, especially when instituted by developed countries have been noted as protectionist, inefficient, and environmentally damaging.[7] In the past century agriculture has been characterized by enhanced productivity, the use of synthetic fertilizers and pesticides, selective breeding, mechanization, water contamination, and farm subsidies. Proponents of organic farming such as Sir Albert Howard argued in the early 1900s that the overuse of pesticides and synthetic fertilizers damages the long-term fertility of the soil. While this feeling lay dormant for decades, as environmental awareness has increased in the 2000s there has been a movement towards sustainable agriculture by some farmers, consumers, and policymakers. In recent years there has been a backlash against perceived external environmental effects of mainstream agriculture, particularly regarding water pollution,[8] resulting in the organic movement. One of the major forces behind this movement has been the European Union, which first certified organic food in 1991 and began reform of its Common Agricultural Policy (CAP) in 2005 to phase out commodity-linked farm subsidies,[9] also known as decoupling. The growth of organic farming has renewed research in alternative technologies such as integrated pest management and selective breeding. Recent mainstream technological developments include genetically modified food.

As of late 2007, several factors have pushed up the price of grain used to feed poultry and dairy cows and other cattle, causing higher prices of wheat (up 58%), soybean (up 32%), and maize (up 11%) over the year.[10][11] Food riots have recently taken place in many countries across the world.[12][13][14] An epidemic of stem rust on wheat caused by race Ug99 is currently spreading across Africa and into Asia and is causing major concern.[15][16][17] Approximately 40% of the world's agricultural land is seriously degraded.[18] In Africa, if current trends of soil degradation continue, the continent might be able to feed just 25% of its population by 2025, according to UNU's Ghana-based Institute for Natural Resources in Africa.[19]

History

Since its development roughly 10,000 years ago,[20] agriculture has expanded vastly in geographical coverage and yields. Throughout this expansion, new technologies and new crops were integrated. Agricultural practices such as irrigation, crop rotation, fertilizers, and pesticides were developed long ago, but have made great strides in the past century. The history of agriculture has played a major role in human history, as agricultural progress has been a crucial factor in worldwide socio-economic change. Wealth-concentration and militaristic specializations rarely seen in hunter-gatherer cultures are commonplace in societies which practice agriculture. So, too, are arts such as epic literature and monumental architecture, as well as codified legal systems. When farmers became capable of producing food beyond the needs of their own families, others in their society were freed to devote themselves to projects other than food acquisition. Historians and anthropologists have long argued that the development of agriculture made civilization possible.

Ancient origins

The Fertile Crescent of Western Asia, Egypt, and India were sites of the earliest planned sowing and harvesting of plants that had previously been gathered in the wild. Independent development of agriculture occurred in northern and southern China, Africa's Sahel, New Guinea and several regions of the Americas. The eight so-called Neolithic founder crops of agriculture appear: first emmer wheat and einkorn wheat, then hulled barley, peas, lentils, bitter vetch, chick peas and flax.

By 7000 BC, small-scale agriculture reached Egypt. From at least 7000 BC the Indian subcontinent saw farming of wheat and barley, as attested by archaeological excavation at Mehrgarh in Balochistan. By 6000 BC, mid-scale farming was entrenched on the banks of the Nile. About this time, agriculture was developed independently in the Far East, with rice, rather than wheat, as the primary crop. Chinese and Indonesian farmers went on to domesticate taro and beans including mung, soy and azuki. To complement these new sources of carbohydrates, highly organized net fishing of rivers, lakes and ocean shores in these areas brought in great volumes of essential protein. Collectively, these new methods of farming and fishing inaugurated a human population boom that dwarfed all previous expansions and continues today.

By 5000 BC, the Sumerians had developed core agricultural techniques including large-scale intensive cultivation of land, mono-cropping, organized irrigation, and the use of a specialized labor force, particularly along the waterway now known as the Shatt al-Arab, from its Persian Gulf delta to the confluence of the Tigris and Euphrates. Domestication of wild aurochs and mouflon into cattle and sheep, respectively, ushered in the large-scale use of animals for food/fiber and as beasts of burden. The shepherd joined the farmer as an essential provider for sedentary and semi-nomadic societies. Maize, manioc, and arrowroot were first domesticated in the Americas as far back as 5200 BC.[21] The potato, tomato, pepper, squash, several varieties of bean, tobacco, and several other plants were also developed in the New World, as was extensive terracing of steep hillsides in much of Andean South America. The Greeks and Romans built on techniques pioneered by the Sumerians but made few fundamentally new advances. Southern Greeks struggled with very poor soils, yet managed to become a dominant society for years. The Romans were noted for an emphasis on the cultivation of crops for trade.

Middle Ages

During the Middle Ages, farmers in North Africa, the Near East, and Europe began making use of agricultural technologies including irrigation systems based on hydraulic and hydrostatic principles, machines such as norias, water-raising machines, dams, and reservoirs. This combined with the invention of a three-field system of crop rotation and the moldboard plow greatly improved agricultural efficiency.

Modern era

After 1492, a global exchange of previously local crops and livestock breeds occurred. Key crops involved in this exchange included the tomato, maize, potato, manioc, cocoa and tobacco going from the New World to the Old, and several varieties of wheat, spices, coffee, and sugar cane going from the Old World to the New. The most important animal exportation from the Old World to the New were those of the horse and dog (dogs were already present in the pre-Columbian Americas but not in the numbers and breeds suited to farm work). Although not usually food animals, the horse (including donkeys and ponies) and dog quickly filled essential production roles on western-hemisphere farms.

The potato became an important staple crop in northern Europe.[22] Since being introduced by Portuguese in the 16th century,[23] maize and manioc have replaced traditional African crops as the continent's most important staple food crops.[24]

By the early 1800s, agricultural techniques, implements, seed stocks and cultivated plants selected and given a unique name because of its decorative or useful characteristics had so improved that yield per land unit was many times that seen in the Middle Ages. With the rapid rise of mechanization in the late 19th and 20th centuries, particularly in the form of the tractor, farming tasks could be done with a speed and on a scale previously impossible. These advances have led to efficiencies enabling certain modern farms in the United States, Argentina, Israel, Germany, and a few other nations to output volumes of high-quality produce per land unit at what may be the practical limit. The Haber-Bosch method for synthesizing ammonium nitrate represented a major breakthrough and allowed crop yields to overcome previous constraints. In the past century agriculture has been characterized by enhanced productivity, the substitution of labor for synthetic fertilizers and pesticides, water pollution, and farm subsidies. In recent years there has been a backlash against the external environmental effects of conventional agriculture, resulting in the organic movement.

The cereals rice, corn, and wheat provide 60% of human food supply.[25] Between 1700 and 1980, "the total area of cultivated land worldwide increased 466%" and yields increased dramatically, particularly because of selectively-bred high-yielding varieties, fertilizers, pesticides, irrigation, and machinery.[25] For example, irrigation increased corn yields in eastern Colorado by 400 to 500% from 1940 to 1997.[25]

However, concerns have been raised over the sustainability of intensive agriculture. Intensive agriculture has become associated with decreased soil quality in India and Asia, and there has been increased concern over the effects of fertilizers and pesticides on the environment, particularly as population increases and food demand expands. The monocultures typically used in intensive agriculture increase the number of pests, which are controlled through pesticides. Integrated pest management (IPM), which "has been promoted for decades and has had some notable successes" has not significantly affected the use of pesticides because policies encourage the use of pesticides and IPM is knowledge-intensive.[25] Although the "Green Revolution" significantly increased rice yields in Asia, yield increases have not occurred in the past 15–20 years.[25] The genetic "yield potential" has increased

for wheat, but the yield potential for rice has not increased since 1966, and the yield potential for maize has "barely increased in 35 years".[25] It takes a decade or two for herbicide-resistant weeds to emerge, and insects become resistant to insecticides within about a decade.[25] Crop rotation helps to prevent resistances.[25]

Agricultural exploration expeditions, since the late nineteenth century, have been mounted to find new species and new agricultural practices in different areas of the world. Two early examples of expeditions include Frank N. Meyer's fruit- and nut-collecting trip to China and Japan from 1916-1918[26] and the Dorsett-Morse Oriental Agricultural Exploration Expedition to China, Japan, and Korea from 1929-1931 to collect soybean germplasm to support the rise in soybean agriculture in the United States.[27]

In 2005, the agricultural output of China was the largest in the world, accounting for almost one-sixth of world share, followed by the EU, India and the USA, according to the International Monetary Fund.[*citation needed*] Economists measure the total factor productivity of agriculture and by this measure agriculture in the United States is roughly 2.6 times more productive than it was in 1948.[28]

Six countries - the US, Canada, France, Australia, Argentina and Thailand - supply 90% of grain exports.[29] Water deficits, which are already spurring heavy grain imports in numerous middle-sized countries, including Algeria, Iran, Egypt, and Mexico,[30] may soon do the same in larger countries, such as China or India.[31]

Crop production systems

Cropping systems vary among farms depending on the available resources and constraints; geography and climate of the farm; government policy; economic, social and political pressures; and the philosophy and culture of the farmer. Shifting cultivation (or slash and burn) is a system in which forests are burnt, releasing nutrients to support cultivation of annual and then perennial crops for a period of several years. Then the plot is left fallow to regrow forest, and the farmer moves to a new plot, returning after many more years (10-20). This fallow period is shortened if population density grows, requiring the input of nutrients (fertilizer or manure) and some manual pest control. Annual cultivation is the next phase of intensity in which there is no fallow period. This requires even greater nutrient and pest control inputs. Further industrialization lead to the use of monocultures, when one cultivar is planted on a large acreage. Due to the low biodiversity, nutrient use is uniform, and pests tend to build up, necessitating the greater use of pesticides and fertilizers.[33] Multiple cropping, in which several crops are grown sequentially in one year, and intercropping, when several crops are grown at the same time are other kinds of annual cropping systems known as polycultures.[34]

In tropical environments, all of these cropping systems are practiced. In subtropical and arid environments, the timing and extent of agriculture may be limited by rainfall, either not allowing multiple annual crops in a year, or requiring irrigation. In all of these environments perennial crops are grown (coffee, chocolate) and systems are practiced such as agroforestry. In temperate environments, where

ecosystems were predominantly grassland or prairie, highly productive annual cropping is the dominant farming system.[34]

The last century has seen the intensification, concentration and specialization of agriculture, relying upon new technologies of agricultural chemicals (fertilizers and pesticides), mechanization, and plant breeding (hybrids and GMO's). In the past few decades, a move towards sustainability in agriculture has also developed, integrating ideas of socio-economic justice and conservation of resources and the environment within a farming system.[35][36] This has led to the development of many responses to the conventional agriculture approach, including organic agriculture, urban agriculture, community supported agriculture, ecological or biological agriculture, integrated farming, and holistic management.

Crop statistics

Important categories of crops include grains and pseudograins, pulses (legumes), forage, and fruits and vegetables. Specific crops are cultivated in distinct growing regions throughout the world. In millions of metric tons, based on FAO estimate.

Livestock production systems

Animals, including horses, mules, oxen, camels, llamas, alpacas, and dogs, are often used to help cultivate fields, harvest crops, wrangle other animals, and transport farm products to buyers. Animal husbandry not only refers to the breeding and raising of animals for meat or to harvest animal products (like milk, eggs, or wool) on a continual basis, but also to the breeding and care of species for work and companionship. Livestock production systems can be defined based on feed source, as grassland - based, mixed, and landless.[38] Grassland based livestock production relies upon plant material such as shrubland, rangeland, and pastures for feeding ruminant animals. Outside nutrient inputs may be used, however manure is returned directly to the grassland as a major nutrient source. This system is particularly important in areas where crop production is not feasible due to climate or soil, representing 30-40 million pastoralists.[34] Mixed production systems use grassland, fodder crops and grain feed crops as feed for ruminant and monogastic (one stomach; mainly chickens and pigs) livestock. Manure is typically recycled in mixed systems as a fertilizer for crops. Approximately 68% of all agricultural land is permanent pastures used in the production of livestock.[39] Landless systems rely upon feed from outside the farm, representing the de-linking of crop and livestock production found more prevalently in OECD member countries. In the U.S., 70% of the grain grown is fed to animals on feedlots.[34] Synthetic fertilizers are more heavily relied upon for crop production and manure utilization becomes a challenge as well as a source for pollution.

Production practices

Tillage is the practice of plowing soil to prepare for planting or for nutrient incorporation or for pest control. Tillage varies in intensity from conventional to no-till. It may improve productivity by warming the soil, incorporating fertilizer and controlling weeds, but also renders soil more prone to erosion, triggers the

decomposition of organic matter releasing CO_2, and reduces the abundance and diversity of soil organisms.

Pest control includes the management of weeds, insects/mites, and diseases. Chemical (pesticides), biological (biocontrol), mechanical (tillage), and cultural practices are used. Cultural practices include crop rotation, culling, cover crops, intercropping, composting, avoidance, and resistance. Integrated pest management attempts to use all of these methods to keep pest populations below the number which would cause economic loss, and recommends pesticides as a last resort.[42]

Nutrient management includes both the source of nutrient inputs for crop and livestock production, and the method of utilization of manure produced by livestock. Nutrient inputs can be chemical inorganic fertilizers, manure, green manure, compost and mined minerals.[43] Crop nutrient use may also be managed using cultural techniques such as crop rotation or a fallow period.[44][45] Manure is used either by holding livestock where the feed crop is growing, such as in managed intensive rotational grazing, or by spreading either dry or liquid formulations of manure on cropland or pastures.

Water management is where rainfall is insufficient or variable, which occurs to some degree in most regions of the world.[34] Some farmers use irrigation to supplement rainfall. In other areas such as the Great Plains in the U.S. and Canada, farmers use a fallow year to conserve soil moisture to use for growing a crop in the following year.[46] Agriculture represents 70% of freshwater use worldwide.[47]

Processing, distribution, and marketing

In the United States, food costs attributed to processing, distribution, and marketing have risen while the costs attributed to farming have declined. From 1960 to 1980 the farm share was around 40%, but by 1990 it had declined to 30% and by 1998, 22.2%. Market concentration has increased in the sector as well, with the top 20 food manufacturers accounting for half the food-processing value in 1995, over double that produced in 1954. As of 2000 the top six US supermarket groups had 50% of sales compared to 32% in 1992. Although the total effect of the increased market concentration is likely increased efficiency, the changes redistribute economic surplus from producers (farmers) and consumers, and may have negative implications for rural communities.

Crop alteration and biotechnology

Crop alteration has been practiced by humankind for thousands of years, since the beginning of civilization. Altering crops through breeding practices changes the genetic make-up of a plant to develop crops with more beneficial characteristics for humans, for example, larger fruits or seeds, drought-tolerance, or resistance to pests. Significant advances in plant breeding ensued after the work of geneticist Gregor Mendel. His work on dominant and recessive alleles gave plant breeders a better understanding of genetics and brought great insights to the techniques utilized by plant breeders. Crop breeding includes techniques such as plant selection with desirable traits, self-pollination and cross-pollination, and molecular techniques

that genetically modify the organism.[49] Domestication of plants has, over the centuries increased yield, improved disease resistance and drought tolerance, eased harvest and improved the taste and nutritional value of crop plants. Careful selection and breeding have had enormous effects on the characteristics of crop plants. Plant selection and breeding in the 1920s and 1930s improved pasture (grasses and clover) in New Zealand. Extensive X-ray an ultraviolet induced mutagenesis efforts (i.e. primitive genetic engineering) during the 1950s produced the modern commercial varieties of grains such as wheat, corn (maize) and barley.[50][51]

The green revolution popularized the use of conventional hybridization to increase yield many folds by creating "high-yielding varieties". For example, average yields of corn (maize) in the USA have increased from around 2.5 tons per hectare (t/ha) (40 bushels per acre) in 1900 to about 9.4 t/ha (150 bushels per acre) in 2001. Similarly, worldwide average wheat yields have increased from less than 1 t/ha in 1900 to more than 2.5 t/ha in 1990. South American average wheat yields are around 2 t/ha, African under 1 t/ha, Egypt and Arabia up to 3.5 to 4 t/ha with irrigation. In contrast, the average wheat yield in countries such as France is over 8 t/ha. Variations in yields are due mainly to variation in climate, genetics, and the level of intensive farming techniques (use of fertilizers, chemical pest control, growth control to avoid lodging

Genetic Engineering

Genetically Modified Organisms (GMO) are organisms whose genetic material has been altered by genetic engineering techniques generally known as recombinant DNA technology. Genetic engineering has expanded the genes available to breeders to utilize in creating desired germlines for new crops. After mechanical tomato-harvesters were developed in the early 1960s, agricultural scientists genetically modified tomatoes to be more resistant to mechanical handling. More recently, genetic engineering is being employed in various parts of the world, to create crops with other beneficial traits.

Herbicide-tolerant GMO Crops

Roundup-Ready seed has a herbicide resistant gene implanted into its genome that allows the plants to tolerate exposure to glyphosate. Roundup is a trade name for a glyphosate based product, which is a systemic, non-selective herbicide used to kill weeds. Roundup-Ready seeds allow the farmer to grow a crop that can be sprayed with glyphosate to control weeds without harming the resistant crop. Herbicide-tolerant crops are used by farmers worldwide. Today, 92% of soybean acreage in the US is planted with genetically-modified herbicide-tolerant plants.[55] With the increasing use of herbicide-tolerant crops, comes an increase in the use of glyphosate based herbicide sprays. In some areas glyphosate resistant weeds have developed, causing farmers to switch to other herbicides.[56][57] Some studies also link widespread glyphosate usage to iron deficiencies in some crops, which is both a crop production and a nutritional quality concern, with potential economic and health implications.[58]

Insect-Resistant GMO Crops

Other GMO crops utilized by growers include insect-resistant crops, which have a gene from the soil bacterium *Bacillus thuringiensis* (Bt) which produces a toxin specific to insects; insect-resistant crops protect plants from damage by insects, one such crop is Starlink. Another is cotton, which accounts for 63% of US cotton acreage.[59]

Some believe that similar or better pest-resistance traits can be acquired through traditional breeding practices, and resistance to various pests can be gained through hybridization or cross-pollination with wild species. In some cases, wild species are the primary source of resistance traits; some tomato cultivars that have gained resistance to at least nineteen diseases did so through crossing with wild populations of tomatoes.[60]

Costs and Benefits of GMOs

Genetic engineers may someday develop transgenic plants which would allow for irrigation, drainage, conservation, sanitary engineering, and maintaining or increasing yields while requiring fewer fossil fuel derived inputs than conventional crops. Such developments would be particularly important in areas which are normally arid and rely upon constant irrigation, and on large scale farms. However, genetic engineering of plants has proven to be controversial. Many issues surrounding food security and environmental impacts have risen regarding GMO practices. For example, GMOs are questioned by some ecologists and economists concerned with GMO practices such as terminator seeds,[61][62] which is a genetic modification that creates sterile seeds. Terminator seeds are currently under strong international opposition and face continual efforts of global bans.[63] Another controversial issue is the patent protection given to companies that develop new types of seed using genetic engineering. Since companies have intellectual ownership of their seeds, they have the power to dictate terms and conditions of their patented product. Currently, ten seed companies control over two-thirds of the global seed sales.[64] Vandana Shiva argues that these companies are guilty of biopiracy by patenting life and exploiting organisms for profit[65] Farmers using patented seed are restricted from saving seed for subsequent plantings, which forces farmers to buy new seed every year. Since seed saving is a traditional practice for many farmers in both developing and developed countries, GMO seeds legally bind farmers to change their seed saving practices to buying new seed every year.[56][65]

Locally adapted seeds are an essential hertitage that has the potential to be lost with current hybridized crops and GMOs. Locally adapted seeds, also called land races or crop eco-types, are important because they have adapted over time to the specific microclimates, soils, other environmental conditions, field designs, and ethnic preference indigenous to the exact area of cultivation.[66] Introducing GMOs and hybridized commercial seed to an area brings the risk of cross-pollination with local land races Therefore, GMOs pose a threat to the sustainability of land races and the ethnic heritage of cultures. Once seed contains transgenic material, it becomes subject to the conditions of the seed company that owns the patent of the transgenic material.[67]

There is also concern that GMOs will cross-pollinate with wild species and permanently alter native populations' genetic integrity; there are already identified populations of wild plants with transgenic genes. GMO gene flow to related weed species is a concern, as well as cross-pollination with non-transgenic crops. Since many GMO crops are harvested for their seed, such as rapeseed, seed spillage in is problematic for volunteer plants in rotated fields, as well as seed-spillage during transportation.[68]

Food safety and labeling

Food security issues also coincide with food safety and food labeling concerns. Currently a global treaty, the BioSafety Protocol, regulates the trade of GMOs. The EU currently requires all GMO foods to be labeled, whereas the US does not require transparent labeling of GMO foods. Since there are still questions regarding the safety and risks associated with GMO foods, some believe the public should have the freedom to choose and know what they are eating and require all GMO products to be labeled.[69]

Environmental impact

Agriculture imposes external costs upon society through pesticides, nutrient runoff, excessive water usage, and assorted other problems. A 2000 assessment of agriculture in the UK determined total external costs for 1996 of £2,343 million, or £208 per hectare.[70] A 2005 analysis of these costs in the USA concluded that cropland imposes approximately $5 to 16 billion ($30 to $96 per hectare), while livestock production imposes $714 million.[71] Both studies concluded that more should be done to internalize external costs, and neither included subsidies in their analysis, but noted that subsidies also influence the cost of agriculture to society. Both focused on purely fiscal impacts. The 2000 review included reported pesticide poisonings but did not include speculative chronic effects of pesticides, and the 2004 review relied on a 1992 estimate of the total impact of pesticides.

Livestock issues

A senior UN official and co-author of a UN report detailing this problem, Henning Steinfeld, said "Livestock are one of the most significant contributors to today's most serious environmental problems".[72] Livestock production occupies 70% of all land used for agriculture, or 30% of the land surface of the planet.[73] It is one of the largest sources of greenhouse gases, responsible for 18% of the world's greenhouse gas emissions as measured in CO_2 equivalents. By comparison, all transportation emits 13.5% of the CO_2. It produces 65% of human-related nitrous oxide (which has 296 times the global warming potential of CO_2,) and 37% of all human-induced methane (which is 23 times as warming as CO_2. It also generates 64% of the ammonia, which contributes to acid rain and acidification of ecosystems. Livestock expansion is cited as a key factor driving deforestation, in the Amazon basin 70% of previously forested area is now occupied by pastures and the remainder used for feedcrops. Through deforestation and land degradation, livestock is also driving reductions in biodiversity.

Land transformation and degradation

Land transformation, the use of land to yield goods and services, is the most substantial way humans alter the Earth's ecosystems, and is considered the driving force in the loss of biodiversity. Estimates of the amount of land transformed by humans vary from 39–50%. Land degradation, the long-term decline in ecosystem function and productivity, is estimated to be occurring on 24% of land worldwide, with cropland overrepresented. The UN-FAO report cites land management as the driving factor behind degradation and reports that 1.5 billion people rely upon the degrading land. Degradation can be deforestation, desertification, soil erosion, mineral depletion, or chemical degradation (acidification and salinization).[34]

Eutrophication

Eutrophication, excessive nutrients in aquatic ecosystems resulting in algal blooms and anoxia, leads to fish kills, loss of biodiversity, and renders water unfit for drinking and other industrial uses. Excessive fertilization and manure application to cropland, as well as high livestock stocking densities cause nutrient (mainly nitrogen and phosphorus) runoff and leaching from agricultural land. These nutrients are major nonpoint pollutants contributing to eutrophication of aquatic ecosystems.

Pesticides

Pesticide use has increased since 1950 to 2.5 million tons annually worldwide, yet crop loss due to pests has remained relatively constant. The World Health Organization estimated in 1992 that 3 million pesticide poisonings occur annually, causing 220,000 deaths. Pesticides select for pesticide resistance in the pest population, leading to a condition termed the 'pesticide treadmill' in which pest resistance warrants the development of a new pesticide. An alternative argument is that the way to 'save the environment' and prevent famine is by using pesticides and intensive high yield farming, a view exemplified by a quote heading the Center for Global Food Issues website: 'Growing more per acre leaves more land for nature'.[80][81] However, critics argue that a trade-off between the environment and a need for food is not inevitable, and that pesticides simply replace good agronomic practices such as crop rotation.

Climate Change

Climate change has the potential to affect agriculture through changes in temperature, rainfall (timing and quantity), CO_2, solar radiation and the interaction of these elements.[34][83] Agriculture can both mitigate or worsen global warming. Some of the increase in CO_2 in the atmosphere comes from the decomposition of organic matter in the soil, and much of the methane emitted into the atmosphere is due to the decomposition of organic matter in wet soils such as rice paddies.[84] Further, wet or anaerobic soils also lose nitrogen through denitrification, releasing the greenhouse gas nitric oxide. Changes in management can reduce the release of these greenhouse gases, and soil can further be used to sequester some of the CO_2 in the atmosphere.

Distortions in modern global agriculture

Differences in economic development, population density and culture mean that the farmers of the world operate under very different conditions.

A US cotton farmer may receive US$230 in government subsidies per acre planted (in 2003), while farmers in Mali and other third-world countries do without. When prices decline, the heavily subsidised US farmer is not forced to reduce his output, making it difficult for cotton prices to rebound, but his Mali counterpart may go broke in the meantime.

A livestock farmer in South Korea can calculate with a (highly subsidized) sales price of US$1300 for a calf produced. A South American Mercosur country rancher calculates with a calf's sales price of US$120–200 (both 2008 figures). With the former, scarcity and high cost of land is compensated with public subsidies, the latter compensates absence of subsidies with economics of scale and low cost of land.

In the Peoples Republic of China, a rural household's productive asset may be one hectare of farmland. In Brazil, Paraguay and other countries where local legislature allows such purchases, international investors buy thousands of hectares of farmland or raw land at prices of a few hundred US$ per hectare.

Agriculture and petroleum

Since the 1940s, agriculture has dramatically increased its productivity, due largely to the use of petrochemical derived pesticides, fertilizers, and increased mechanization (the so-called Green Revolution). Between 1950 and 1984, as the Green Revolution transformed agriculture around the globe, world grain production increased by 250%.[93][94] This has allowed world population to grow more than double over the last 50 years. However, every energy unit delivered in food grown using modern techniques requires over ten energy units to produce and deliver,[95] although this statistic is contested by proponents of petroleum-based agriculture.[96] The vast majority of this energy input comes from fossil fuel sources. Because of modern agriculture's current heavy reliance on petrochemicals and mechanization, there are warnings that the ever decreasing supply of oil (the dramatic nature of which is known as peak oil[97][98][99][100])[101] will inflict major damage on the modern industrial agriculture system, and could cause large food shortages.[102]

Modern or industrialized agriculture is dependent on petroleum in two fundamental ways: 1) cultivation—to get the crop from seed to harvest and 2) transport—to get the harvest from the farm to the consumer's refrigerator. It takes approximately 400 gallons of oil a year per citizen to fuel the tractors, combines and other equipment used on farms for cultivation or 17 percent of the nation's total energy use.[103] Oil and natural gas are also the building blocks of the fertilizers, pesticides and herbicides used on farms. Petroleum is also providing the energy required to process food before it reaches the market. It takes the energy equivalent of a half-gallon of gasoline to produce a two-pound bag of breakfast cereal.[104] And that still does not count the energy needed to transport that cereal to market; it is the transport of processed foods and crops that consumes the most oil. The kiwi from New Zealand,

the asparagus from Argentina, the melons and broccoli from Guatemala, the organic lettuce from California—most food items on the consumer's plate travel average of 1,500 miles just to get there.[105][106][107]

Oil shortages could interrupt this food supply. The consumer's growing awareness of this vulnerability is one of several factors fueling current interest in organic agriculture and other sustainable farming methods. Some farmers using modern organic-farming methods have reported yields as high as those available from conventional farming (but without the use of fossil-fuel-intensive artificial fertilizers or pesticides. However, the reconditioning of soil to restore nutrients lost during the use of monoculture agriculture techniques made possible by petroleum-based technology will take time.[108][109][110][111]

The dependence on oil and vulnerability of the U.S. food supply has also led to the creation of a conscious consumption movement in which consumers count the "food miles" a food product has traveled. The Leopold Center for Sustainable Agriculture defines a food mile as: "...the distance food travels from where it is grown or raised to where it is ultimately purchased by the consumer or end-user." In a comparison of locally-grown food and long-distance food, researchers at the Leopold Center found that local food traveled an average of 44.6 miles to reach its destination compared with 1,546 miles for conventionally-grown and shipped food.[107]

Consumers in the new local food movement who count food miles call themselves "locavores"; they advocate a return to a locally-based food system where food comes from as close as possible, whether or not it is organic. Locavores argue that an organically-grown lettuce from California that is shipped to New York is still an unsustainable food source because of dependence on fossil fuels to ship it. In addition to the "locavore" movement, concern over dependence on oil-based agriculture has also dramatically increased interest in home and community gardening.

Farmers have also begun raising crops such as corn (maize) for non-food use in an effort to help mitigate peak oil. This has contributed to a 60% rise in wheat prices recently, and has been indicated as a possible precursor to "serious social unrest in developing countries."[112] Such situations would be exacerbated in the event of future rises in food and fuel costs, factors which have already impacted the ability of charitable donors to send food aid to starving populations.[113]

One example of the chain reactions which could be caused by peak oil issues involves the problems caused by farmers raising crops such as corn (maize) for non-food use in an effort to help mitigate peak oil. This has already lowered food production.[112] This food vs fuel issue will be exacerbated as demand for ethanol fuel rises. Rising food and fuel costs has already limited the abilities of some charitable donors to send food aid to starving populations.[113] In the UN, some warn that the recent 60% rise in wheat prices could cause "serious social unrest in developing countries."[112][114] In 2007, higher incentives for farmers to grow non-food biofuel crops[115] combined with other factors (such as over-development of former farm lands, rising transportation costs, climate change, growing consumer demand in China and India, and population growth)[116] to cause food shortages in Asia, the

Middle East, Africa, and Mexico, as well as rising food prices around the globe.[117][118] As of December 2007, 37 countries faced food crises, and 20 had imposed some sort of food-price controls. Some of these shortages resulted in food riots and even deadly stampedes.[12][13][14]

Another major petroleum issue in agriculture is the effect of petroleum supplies will have on fertilizer production. By far the biggest fossil fuel input to agriculture is the use of natural gas as a hydrogen source for the Haber-Bosch fertilizer-creation process.[119] Natural gas is used because it is the cheapest currently available source of hydrogen.[120][121] When oil production becomes so scarce that natural gas is used as a partial stopgap replacement, and hydrogen use in transportation increases, natural gas will become much more expensive. If the Haber Process is unable to be commercialized using renewable energy (such as by electrolysis) or if other sources of hydrogen are not available to replace the Haber Process, in amounts sufficient to supply transportation and agricultural needs, this major source of fertilizer would either become extremely expensive or unavailable. This would either cause food shortages or dramatic rises in food prices.

Mitigation of effects of petroleum shortages

One effect oil shortages could have on agriculture is a full return to organic agriculture. In light of peak oil concerns, organic methods are much more sustainable than contemporary practices because they use no petroleum-based pesticides, herbicides, or fertilizers. Some farmers using modern organic-farming methods have reported yields as high as those available from conventional farming.[108][109][110][111] Organic farming may however be more labor-intensive and would require a shift of work force from urban to rural areas.[122]

It has been suggested that rural communities might obtain fuel from the biochar and synfuel process, which uses agricultural *waste* to provide charcoal fertilizer, some fuel *and* food, instead of the normal food vs fuel debate. As the synfuel would be used on site, the process would be more efficient and may just provide enough fuel for a new organic-agriculture fusion.[123][124]

It has been suggested that some transgenic plants may some day be developed which would allow for maintaining or increasing yields while requiring fewer fossil fuel derived inputs than conventional crops.[125] The possibility of success of these programs is questioned by ecologists and economists concerned with unsustainable GMO practices such as terminator seeds,[126][127] and a January 2008 report shows that GMO practices "fail to deliver environmental, social and economic benefits."[128] While there has been some research on sustainability using GMO crops, at least one hyped and prominent multi-year attempt by Monsanto Company has been unsuccessful, though during the same period traditional breeding techniques yielded a more sustainable variety of the same crop.[129] Additionally, a survey by the bio-tech industry of subsistence farmers in Africa to discover what GMO research would most benefit sustainable agriculture only identified non-transgenic issues as areas needing to be addressed.[130] Nonetheless, some governments in Africa continue to view investments in new transgenic technologies as an essential component of efforts to improve sustainability.[131]

Policy

Agricultural policy focuses on the goals and methods of agricultural production. At the policy level, common goals of agriculture include:

- Conservation
- Economic stability
- Environmental impact
- Food quality: Ensuring that the food supply is of a consistent and known quality.
- Food safety: Ensuring that the food supply is free of contamination.
- Food security: Ensuring that the food supply meets the population's needs.[112][113]
- Poverty Reduction

Demography

is the statistical study of all populations. It can be a very general science that can be applied to any kind of dynamic population, that is, one that changes over time or space (see population dynamics). It encompasses the study of the size, structure and distribution of populations, and spatial and/or temporal changes in them in response to birth, migration, aging and death.

Demographic analysis can be applied to whole societies or to groups defined by criteria such as education, nationality, religion and ethnicity. In academia, demography is often regarded as a branch of either anthropology, economics, or sociology. **Formal demography** limits its object of study to the measurement of populations processes, while the more broad field of social demography population studies also analyze the relationships between economic, social, cultural and biological processes influencing a population.[1]

The term demographics is often used erroneously for demography, but refers rather to selected population characteristics as used in government, marketing or opinion research, or the demographic profiles used in such research.

Data and methods

There are two methods of data collection: direct and indirect. Direct data come from vital statistics registries that track all births and deaths as well as certain changes in legal status such as marriage, divorce, and migration (registration of place of residence). In developed countries with good registration systems (such as the United States and much of Europe), registry statistics are the best method for estimating the number of births and deaths.

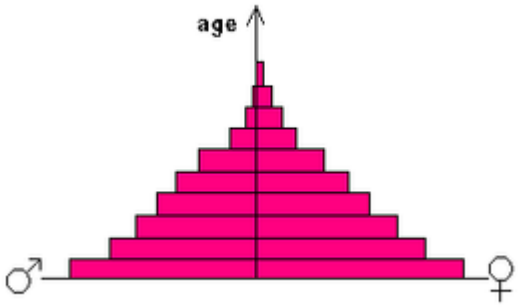
The census is the other common direct method of collecting demographic data. A census is usually conducted by a national government and attempts to enumerate every person in a country. However, in contrast to vital statistics data, which are typically collected continuously and summarized on an annual basis, censuses

typically occur only every 10 years or so, and thus are not usually the best source of data on births and deaths. Analyses are conducted after a census to estimate how much over or undercounting took place. Censuses do more than just count people. They typically collect information about families or households, as well as about such individual characteristics as age, sex, marital status, literacy/education, employment status and occupation, and geographical location. They may also collect data on migration (or place of birth or of previous residence), language, religion, nationality (or ethnicity or race), and citizenship. In countries in which the vital registration system may be incomplete, the censuses are also used as a direct source of information about fertility and mortality; for example the censuses of the People's Republic of China gather information on births and deaths that occurred in the 18 months immediately preceding the census.

Indirect methods of collecting data are required in countries where full data are not available, such as is the case in much of the developing world. One of these techniques is the sister method, where survey researchers ask women how many of their sisters have died or had children and at what age. With these surveys, researchers can then indirectly estimate birth or death rates for the entire population. Other indirect methods include asking people about siblings, parents, and children.

There are a variety of demographic methods for modeling population processes. They include models of mortality (including the life table, Gompertz models, hazards models, Cox proportional hazards models, multiple decrement life tables, Brass relational logits), fertility (Hernes model, Coale-Trussell models, parity progression ratios), marriage (Singulate Mean at Marriage, Page model), disability (Sullivan's method, multistate life tables), population projections (Lee Carter, the Leslie Matrix), and population momentum (Keyfitz).

Important concepts



A population pyramid is an age/sex distribution diagram.

Important concepts in demography include:

- The **crude birth rate**, the annual number of live births per 1000 people.

- The **general fertility rate**, the annual number of live births per 1000 women of childbearing age (often taken to be from 15 to 49 years old, but sometimes from 15 to 44).
- **age-specific fertility** rates, the annual number of live births per 1000 women in particular age groups (usually age 15-19, 20-24 etc.)
- The **crude death rate**, the annual number of deaths per 1000 people.
- The **infant mortality rate**, the annual number of deaths of children less than 1 year old per 1000 live births.
- The **expectation of life** (or life expectancy), the number of years which an individual at a given age could expect to live at present mortality levels.
- The **total fertility rate**, the number of live births per woman completing her reproductive life, if her childbearing at each age reflected current age-specific fertility rates.
- The **gross reproduction rate**, the number of daughters who would be born to a woman completing her reproductive life at current age-specific fertility rates.
- The **net reproduction ratio** is the expected number of daughters, per newborn prospective mother, who may or may not survive to and through the ages of childbearing.

Note that the crude death rate as defined above and applied to a whole population can give a misleading impression. For example, the number of deaths per 1000 people can be higher for developed nations than in less-developed countries, despite standards of health being better in developed countries. This is because developed countries have relatively more older people, who are more likely to die in a given year, so that the overall mortality rate can be higher even if the mortality rate at any given age is lower. A more complete picture of mortality is given by a life table which summarises mortality separately at each age. A life table is necessary to give a good estimate of life expectancy.

The fertility rates can also give a misleading impression that a population is growing faster than it in fact is, because measurement of fertility rates only involves the reproductive rate of women, and does not adjust for the sex ratio. For example, if a population has a total fertility rate of 4.0 but the sex ratio is 66/34 (twice as many men as women), this population is actually growing at a slower natural increase rate than would a population having a fertility rate of 3.0 and a sex ratio of 50/50. This distortion is greatest in India and Myanmar, and is present in China as well.

Basic demographic equation

Suppose that a country (or other entity) contains $Population_t$ persons at time t. What is the size of the population at time $t + 1$?

$$Population_{t+1} = Population_t + Naturalincrease_t + Netmigration_t$$

Natural increase from time t to $t + 1$:

$$Naturalincrease_t = Births_t - Deaths_t$$

Net migration from time t to $t + 1$:

$$Netmigration_t = Immigration_t - Emigration_t$$

This basic equation can also be applied to subpopulations. For example, the population size of ethnic groups or nationalities within a given society or country is subject to the same sources of change. However, when dealing with ethnic groups, "net migration" might have to be subdivided into physical migration and ethnic reidentification (assimilation). Individuals who change their ethnic self-labels or whose ethnic classification in government statistics changes over time may be thought of as migrating or moving from one population subcategory to another.[2]

More generally, while the basic demographic equation holds true by definition, in practice the recording and counting of events (births, deaths, immigration, emigration) and the enumeration of the total population size are subject to error. So allowance needs to be made for error in the underlying statistics when any accounting of population size or change is made.

History

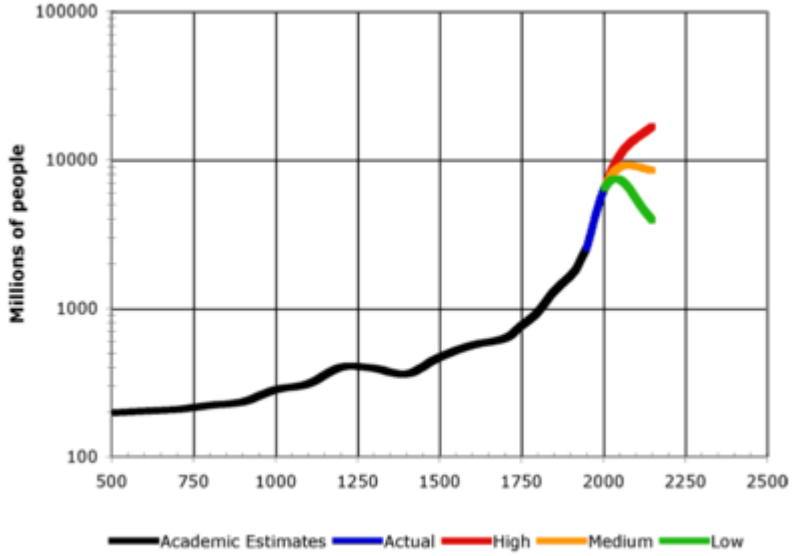
Ibn Khaldun (1332-1406) is regarded as the "father of demography" for his economic analysis of social organization which produced the first scientific and theoretical work on population, development, and group dynamics. His *Muqaddimah* also laid the groundwork for his observation of the role of state, communication and propaganda in history.[3]

The *Natural and Political Observations ... upon the Bills of Mortality* (1662) of John Graunt contains a primitive form of life table. Mathematicians, such as Edmond Halley, developed the life table as the basis for life insurance mathematics. Richard Price was credited with the first textbook on life contingencies published in 1771,[4] followed later by Augustus de Morgan, 'On the Application of Probabilities to Life Contingencies', (1838).[5]

At the end of the 18th century, Thomas Malthus concluded that, if unchecked, populations would be subject to exponential growth. He feared that population growth would tend to outstrip growth in food production, leading to ever increasing famine and poverty (see Malthusian catastrophe); he is seen as the intellectual father of ideas of overpopulation and the limits to growth. Later more sophisticated and realistic models were presented by e.g. Benjamin Gompertz and Verhulst.

The period 1860-1910 can be characterized as a period of transition wherein demography emerged from statistics as a separate field of interest. This period included a panoply of international 'great demographers' like Adolphe Quételet (1796-1874), William Farr (1807-1883), Louis-Adolphe Bertillon (1821-1883) and his son Jacques (1851-1922), Joseph Körösi (1844-1906), Anders Nicolas Kaier (1838-1919), Richard Böckh (1824-1907), Wilhelm Lexis (1837-1914) and Luigi Bodio (1840-1920) contributed to the development of demography and to the toolkit of methods and techniques of demographic analysis. [6]

The demographic transition



World population from 500CE to 2150, based on UN 2004 projections[7] (red, orange, green) and US Census Bureau historical estimates[8] (black). Only the section in blue is from reliable counts, not estimates or projections.

Main article: Demographic transition

Contrary to Malthus' predictions and in line with his thoughts on moral restraint, natural population growth in most developed countries has diminished to close to zero, without being held in check by famine or lack of resources, as people in developed nations have shown a tendency to have fewer children. The fall in population growth has occurred despite large rises in life expectancy in these countries. This pattern of population growth, with slow (or no) growth in pre-industrial societies, followed by fast growth as the society develops and industrializes, followed by slow growth again as it becomes more affluent, is known as the demographic transition.

Similar trends are now becoming visible in ever more developing countries, so that far from spiraling out of control, world population growth is expected to slow markedly in the next century, coming to an eventual standstill or even declining. The change is likely to be accompanied by major shifts in the proportion of world population in particular regions. The United Nations Population Division expects the absolute number of infants and toddlers in the world to begin to fall by 2015, and the number of children under 15 by 2025.[7] The figure in this section shows the latest (2004) UN projections of world population out to the year 2150 (red = high, orange = medium, green = low). The UN "medium" projection shows world population reaching an approximate equilibrium at 9 billion by 2075. Working independently, demographers at the International Institute for Applied Systems Analysis in Austria expect world population to peak at 9 billion by 2070.[9] Throughout the 21st century, the average age of the population is likely to continue to rise.

The science of population

Populations can change through three processes: fertility, mortality, and migration. Fertility involves the number of children that women have and is to be contrasted with fecundity (a woman's childbearing potential).[10] Mortality is the study of the causes, consequences, and measurement of processes affecting death to members of the population. Demographers most commonly study mortality using the Life Table, a statistical device which provides information about the mortality conditions (most notably the life expectancy) in the population.[11] Migration refers to the movement of persons from an origin place to a destination place across some pre-defined, political boundary. Migration researchers do not designate movements 'migrations' unless they are somewhat permanent. Thus demographers do not consider tourists and travelers to be migrating. While demographers who study migration typically do so through census data on place of residence, indirect sources of data including tax forms and labor force surveys are also important.[12]

Demography is today widely taught in many universities across the world, attracting students with initial training in social sciences, statistics or health studies. Being at the crossroads of several disciplines such as geography, economics, sociology or epidemiology, demography offers tools to approach a large range of population issues by combining a more technical quantitative approach that represents the core of the discipline with many other methods borrowed from social or other sciences. Demographic research is conducted in universities, in research institutes as well as in statistical departments and in several international agencies. Population institutions are part of the Cicred (International Committee for Coordination of Demographic Research) network while most individual scientists engaged in demographic research are members of the International Union for the Scientific Study of Population – IUSSP or, in the United States, in the Population Association of America.

Environmental sociology

Environmental sociology is typically defined as the sociological study of societal-environmental interactions, although this definition immediately presents the perhaps insolvable problem of separating human cultures from the rest of the environment. Although the focus of the field is the relationship between society and environment in general, environmental sociologists typically place special emphasis on studying the social factors that cause environmental problems, the societal impacts of those problems, and efforts to solve the problems. In addition, considerable attention is paid to the social processes by which certain environmental conditions become socially defined as problems.

Although there was sometimes acrimonious debate between the constructivist and realist "camps" within environmental sociology in the 1990s, the two sides have found considerable common ground as both increasingly accept that while most environmental problems have a material reality they nonetheless become known only via human processes such as scientific knowledge, activists' efforts, and media attention. In other words, most environmental problems have a real ontological

status despite our knowledge/awareness of them stemming from social processes, processes by which various conditions are constructed as problems by scientists, activists, media and other social actors. Correspondingly, environmental problems must all be understood via social processes, despite any material basis they may have external to humans. This interactiveness is now broadly accepted, but many aspects of the debate continue in contemporary research in the field.

History

Modern thought surrounding human-environment relations is traced back to Charles Darwin. Darwin's concept of natural selection suggested that certain social characteristics played a key role in the survivability of groups in the natural environment. Although typically taken at the micro level, evolutionary principles, particularly adaptability, serve as a microcosm of human ecology. Work by Humphrey and Buttel (2002) traces the linkages between Darwin's work on natural selection, human ecological sociology, and environmental sociology.

Academic

It became recognized in the latter half of the 20th century that biological determinism failed to fully explain the relationship between humans and the environment. As the application of social determinism became more useful, the role of sociology became more pervasive in analyzing environmental conditions. At first, classical sociology saw social and cultural factors as the only cause of other social and cultural conditions. This lens ignored the concept of environmental determinism or the environmental factors that cause social phenomena.

The works of William R. Catton, Jr. and Riley Dunlap challenged the constricted anthropocentrism of classical sociology. In the late 1970s, they called for a new holistic, or systems perspective. Since the 1970s, sociology has noticeably transformed to include environmental forces in social explanations. Environmental sociology emerged as a coherent subfield of inquiry after the environmental movement of the 1960s and early 1970s. It has now solidified as a respected, interdisciplinary subject in academia.

Concepts

Existential dualism

The duality of the human condition rests with cultural uniqueness and evolutionary traits. From one perspective, humans are embedded in the ecosphere and coevolved alongside other species. Humans share the same basic ecological dependencies as other inhabitants of nature. From the other perspective, humans are distinguished from other species because of their innovative capacities, distinct cultures and varied institutions. Human creations have the power to independently manipulate, destroy, and transcend the limits of the natural environment.

Support for each perspective varies among different communities. Biologists and ecologists typically put more weight on the first perspective. Social scientists, on the

other hand, emphasize the second perspective. This division has shaped the foundation for the primary paradigms of environmental sociology.

Societal-environmental dialectic

In 1975, the highly influential work of Allan Schnaiberg transfigured environmental sociology, proposing a societal-environmental dialectic. This conflictual concept has overwhelming political salience. First, the economic synthesis states that the desire for economic expansion will prevail over ecological concerns. Policy will decide to maximize immediate economic growth at the expense of environmental disruption. Secondly, the managed scarcity synthesis concludes that governments will attempt to control only the most dire of environmental problems to prevent health and economic disasters. This will give the appearance that governments act more environmentally conscious than they really do. Tertiary, the ecological synthesis generates a hypothetical case where environmental degradation is so severe that political forces would respond with sustainable policies. The driving factor would be economic damage caused by environmental degradation. The economic engine would be based on renewable resources at this point. Production and consumption methods would adhere to sustainability regulations.

These conflict-based syntheses have several potential outcomes. One is that the most powerful economic and political forces will preserve the status quo and bolster their dominance. Historically, this is the most common occurrence. Another potential outcome is for contending powerful parties to fall into a stalemate. Lastly, tumultuous social events may result that redistribute economic and political resources.

Treadmill of production

In 1980, Schnaiberg developed a conflict theory on human-environment interaction. The theory is that capitalism is driven by higher profitability and thereby must continue to grow and attract investments to survive in a competitive market. This identifies the imperative for continued economic growth levels that, once achieved, accelerate the need for future growth. This growth in production requires a corresponding growth in consumption. The process contains a chief paradox; economic growth is socially desired but environmental degradation is a common consequence that in turn disrupts long-run economic expansion (Schnaiberg 1980).

Paradigms

Human Exemptionalism Paradigm (HEP)

The HEP theory claims that humans are such a uniquely superior species that they are exempt from environmental forces. Shaped by the leading Western worldview of the time, this was the popular societal paradigm from the industrial revolution until the second half of the 20th century. Human dominance was justified by the uniqueness of culture, which is far more adaptable than biological traits. Culture also has the capacity to accumulate and innovate, making it an unbounded resource capable of solving all natural problems. As humans are not governed by natural

conditions, they have complete control of their own destiny. Any potential limitation posed by the natural world is surpassable using human ingenuity.

New Ecological Paradigm (NEP)

In the 1970s, scholars began recognizing the limits of what would be termed the Human Exemptionalism Paradigm. Catton and Dunlap suggested a new perspective that took environmental variables into full account. They coined a new theory, the New Ecological Paradigm, with assumptions contrary to the HEP. The NEP recognizes the innovative capacity of humans, but that says humans are still ecologically interdependent as with other species. The NEP notes the power of social and cultural forces but does not profess social determinism. Instead, humans are impacted by the cause, effect, and feedback loops of ecosystems. The earth has a finite level of natural resources and waste repositories. Thus, the biophysical environment can impose restraints on human activity.

Events

Modern environmentalism

The 1960s built strong cultural momentum for environmental causes, giving birth to the modern environmental movement. Widespread green consciousness moved vertically within society, resulting in a series of federal policy changes in the 1970s. This period was known as the “Environmental Decade” with the creation of the United States Environmental Protection Agency and passing of the Endangered Species Act, Clean Water Act, and amendments to the Clean Air Act. Earth Day of 1970, celebrated by millions of participants, represented the modern age of environmental thought. The environmental movement continued with incidences such as Love Canal.

Historical studies

While the current mode of thought expressed in environmental sociology was not prevalent until the age of modernity, its application is now used in analysis of ancient peoples. Societies including Easter Island, the Anaszi, and the Mayans ended abruptly, largely due to poor environmental management. The collapse of the Mayans sent a historic message that even advanced cultures are vulnerable to ecological suicide. At the same time, societal successes include New Guinea, Tikopia island, and Japan, whose inhabitants have lived sustainably for 46,000 years.

A **resort town**, sometimes called a **resort city** or **resort destination**, is a town or area where tourism or vacationing is a primary component of the local culture and economy. Most resort towns have one or more actual resorts in or nearby, although some places are considered resort towns merely because of their popularity among tourists.

Typically, the economy of a resort town is geared almost entirely towards catering to tourists, with most residents of the area working in the tourism or resort industry.

Shops and luxury boutiques selling locally-themed souvenirs, motels, and unique restaurants often proliferate the downtown areas of a resort town.

Resort town economy

If the resorts or tourist attractions are seasonal in nature (such as a ski resort), resort towns typically experience a *on-season* where the town is bustling with tourists and workers, and an *off-season* where the town is populated only by a small amount of local year-round residents.

In addition, resort towns are often popular with wealthy retirees and people wishing to purchase vacation homes, which typically drives up property values and the cost of living in the region. Sometimes resort towns can become boomtowns due to the quick development of retirement and vacation-based residences [1].

However, most of the employment available in resort towns are typically low paying and it can be difficult for workers to afford to live the area in which they are employed.[*citation needed*] Many resort towns have spawned nearby bedroom communities where the majority of the resort workforce lives.

Resorts towns sometimes struggle with problems regarding sustainable growth [2], due to the seasonal nature of the economy, the dependence on a single industry, and the difficulties in retaining a stable workforce.[*citation needed*]

Social disruption

Social disruption is a term used in sociology to describe the alteration or breakdown of social life, often in a community setting. For example, the closing of a community grocery store might cause social disruption in a community by removing a “meeting ground” for community members to develop interpersonal relationships and community solidarity. The term is often associated with the effects of rapid population growth.

In punishment, **social disruption** occurs when the deliverer of punishment and the setting in which the punishment is delivered become conditioned aversive stimuli. More simply put, a person who delievers punishment can become something that is avoided by the subject of the punishment. For example, a lab rat may come to avoid an experimenter delievering shocks as punishment. The experimenter himself is not a *punishing stimulus*, but the rat learns to associate the actual punishment (the shocks) with the person delivering the shocks.

Rural health

In medicine, **rural health** is the interdisciplinary study of health and health care delivery in the context of a rural environment or location.

Some of the fields of study comprising rural health include: health, geography, midwifery (remote locations often do not have an OB/GYN), nursing, sociology, economics, telehealth/telemedicine, etc.

The problem in defining rural

Rural can be defined in many ways, such as by population density, by geographic location or other. Due to the large number of choices in the definition parties may often disagree with one another on which definition to use.

Rural Health definitions can be different for establishing undeserved areas or health care accessibility in rural areas of the United States. According to the handbook, *Definitions of Rural: A Handbook for Health Policy Makers and Researchers*, "Residents of metropolitan counties are generally thought to have easy access to the relatively concentrated health services of the county's central areas. However, some metropolitan counties are so large that they contain small towns and rural, sparsely populated areas that are isolated from these central clusters and their corresponding health services by physical barriers." To address this type of rural area, "Harold Goldsmith, Dena Puskin, and Dianne Stiles (1992) described a methodology to identify small towns and rural areas within large metropolitan counties (LMCs) that were isolated from central areas by distance or other physical features." This became the Goldsmith Modification definition of rural. "The Goldsmith Modification has been useful for expanding the eligibility for federal programs that assist rural populations—to include the isolated rural populations of large metropolitan counties."

The 5W's and 1H of Rural Health

The impact of "place" on health has gained increased attention. Does where people live, work, and play make a difference in terms of access and utilization of health services? According to [1] place does matter, in some cases. When discussing the role of place in health as a concept, health status and health behaviors, including health services utilization, are shaped by an aggregate of interacting factors encapsulated in specific geographic locations. Researchers have attempted to compare the health of rural and urban dwellers. In doing so, several questions have been brought to the forefront of this discussion including: (1) Where is rural? (2) Who lives there? (3) What is their health status? (4) Why can we expect these health outcomes? (5) When can we expect real changes? and (6) How can we help? The following sub-sections will provide insight into how these questions have been answered. More specifically, they will discuss variations in rural definitions, socio-demographic characteristics of rural dwellers, health outcomes and determinants of health across rural areas, as well as highlight the impact of policy and research on the improvement of the health of this population sub-group.

Before reviewing these sub-sections lets first consider the reasons for reviewing rural health and exactly why it deserves our attention. The rural communities found in various parts of the world, whether it be Canada, the United States, Australia, the United Kingdom, Africa, or China to name a few, have diverse social, geographic, and economic characteristics [2]. Most rural communities have a larger proportion of

elderly and children, with relatively small populations of people of working age (20 - 50 yrs) which is resulting in a higher dependency ratio. Rural communities show a health disadvantage for many health measures. Compared to their rural counterparts, rural individuals have poorer socio-economic conditions, have lower educational attainment, exhibit less-healthy behaviors (smoking, alcohol consumption) and have overall higher mortality rates. Simply put, in general, rural individuals are characterized as being less healthy overall in comparison to their urban counterparts [3]. We must try to reduce the health disparities between rural and urban populations and to do this we must conduct specialized research and then implement various policies and programs with the rural population being part of the equation (rural proofing policies or rural lens considerations).

When considering rural health a few key terms must firstly be defined. Geographically, equality suggests that there should be an even distribution of services per head of population. In equity, the equality in relation to need is the most important factor [4]. For example, as a general rule there is a conflict between efficiency and equity in all planning and resource allocation [4]. Where efficiency, is to provide services that maximize health benefit while minimizing cost. For example, when a province or territory is sparsely populated, more health care dollars may be put towards transportation costs. For example, almost 13% of health care spending in the Northwest Territories goes toward medical transportation which is significantly higher than the national average of less than 2% [4].

Where is rural?

Rural definitions are numerous, to the point where some have said “there are almost as many definitions of rural as there are researchers” [5]. Despite increasing attempts to delineate rural from urban, no internationally recognized efforts have emerged. It would appear that several countries, including Canada, the United-States, the United Kingdom, Australia, and New Zealand have developed their own formulas to defining ‘rural’. Variations of this definition, even within the same country, have been somewhat problematic. Different formulas provide different numbers. For instance, depending on which definition is applied, Canada’s rural population varies from 22 to 38 percent [6]. While in the United-States, it varies from 17 to 63 percent [7].

Most rural definitions have been based on geographical concepts, also referred to as “technical definitions” [8]. These have included measures such as population size, population density, and distance from an urban centre, settlement patterns, labor market influences, and postal codes. Based on these concepts, there would appear to be six definitions of rural in Canada, nine in the United-States, two in the United-Kingdom, three in Australia and one in New Zealand. Further adding to the complexity of studying rural health is that certain areas share a common denomination by definition, but are very different places to live in.

Who lives there?

Rural population trends are particularly subject to change due to their migration patterns. reported a 64% drop in Canada’s rural population between 1851 and 1986.

As of 2001, despite the steady decline, 30.4% of Canada's population still lived in predominantly rural regions. Similarly, in Australia, urban areas experienced the largest growth rates between 1991 and 1996, while its remote locations experienced the lowest. Despite this pattern, 29% of Australia's population still lived in rural or remote areas. In the UK, out-migration amongst the younger age group seeking education and employment is prevalent, although their rural areas also experience high rates of in-migration, particularly amongst the elderly and retired. Therefore, rural populations appear to be very dynamic in nature. Generally, socio-demographic statistics confirm that the rural population is primarily composed of persons under the age of 14 and over the age of 60, while urban areas are in large part composed of the working age group (30–59 years of age) [13].

In addition to differing age groups, racial and ethnic populations in rural areas also appear to be quite diverse. For example, Non-Hispanic whites are the most widespread population sub-group (82%) in non-metropolitan areas of the United-States (66% in metropolitan areas), while African Americans constitute the largest minority group (8.4%) [14]. Interestingly, Hispanics comprise 5.4% of the rural population in America, a contrast from metropolitan areas where Hispanics have surpassed African Americans in becoming the largest minority population. The remaining 4% is largely represented by Native Americans. A noted characteristic of Canada's rural dwellers is that nearly 50% of its Aboriginal population lives in rural and remote areas [15], while immigrants and other visible minorities live primarily in urban regions (88%) [16]. In Australia, nearly 40% of its Indigenous population lives in the remote hinterland [11]. It is therefore apparent that persons who live in rural areas are not a homogenous group.

According to Xie Fuzhan, director of the National Bureau of Statistics (NBS) China's rural population stood at 737 million, 56 percent of the total population of more than 1.3 billion at the end of 2006, and has seen its rural population shrink in recent years as the country's urbanization has gathered momentum [17]. This may also be due to the fact that 90% of rural residents do not have any type of health insurance and are experiencing very limited access to health care and are seeking better paying jobs in urban areas to be able to get coverage and also where they can have better access to care [18]. The rural population in China was recorded at 64 percent of the total 1.3 billion in 2001 and 74 percent in 1990 [19].

What is their health status?

Health status comparisons are typically assessed through rates of life expectancy, morbidity, and mortality. [20] found life expectancy rates to be significantly higher in urban areas when compared to rural areas. Life expectancy in men ranged from 74 years in the most remote (No MIZ) areas of Canada to 76.8 years its urban centers. As for women, life expectancy was again lowest in rural (Weak MIZ) areas with an average of 81.3 years. Interestingly, those living in rural areas adjacent to urban centers experience slightly higher rates of life expectancy (men-77.4 years; women-81.5 years). Likewise, Australian life expectancy ranged from 78 years to 72 years in major cities to very remote locations [21]. In light of these life expectancy rates, it is not surprising that all-cause mortality rates of both Canadian and Australian persons increased as per the level of remoteness. In China, the life expectancy of the

female population at birth is 73.59 years in urban areas and 72.46 in rural areas. Male life expectancy is 69.73 years in urban areas and 58.99 in rural areas. Most rural men are hard workers in the agricultural sector and for the most part may not be able to afford health care and the appropriate services may not be available [22].

The common leading causes of death in rural areas include higher risks of cardiovascular and respiratory diseases, as well as injury (i.e., poisonings, motor vehicle accidents). Again, further adding to the complexities of rural health, there are exceptions to the abovementioned statistics. For instance, opposite trends were found in New Zealand where urban dwellers were more likely to have been diagnosed with heart disease, asthma, arthritis, and osteoporosis than their rural counterparts [23]. These conflicting results confirm that much still needs to be learned regarding the impact of 'place' on health.

Why can we expect these health outcomes?

'Determinants of health' are a combination of elements that influence health status. While the Public Health Agency of Canada has outlined 12 key determinants of health ((1) Income and Social Status; (2) Social Support Networks; (3) Education and Literacy: (4) Employment/Working Conditions; (5) Social Environments; (6) Physical Environments; (7) Personal Health Practices and Coping Skills; (8) Healthy Child Development; (9) Biology and Genetic Endowment; (10) Health Services; (11) Gender; (12) Culture), these generally represent complex interactions between, social and economic factors, individual behavior and physical environment. Although 'determinants of health' are generic elements set out to interpret health outcomes in any population, these may greatly differ across geographical locations.

Health Determinants
Education and Literacy

According to the "How Healthy are Rural Canadians?" [13] report, persons living in rural locations had lower rates of secondary school graduation. In Australia, similar results were reported with only about 30% of adults in rural areas having completed secondary school in comparison to about 48% in major cities [21]. Not surprisingly, young people from rural locations were also less likely to pursue post-secondary education.

B. Income and Social status

Rural persons also reported higher percentages of low income status [13], likely a result of their lower education levels. [24] confirmed income gaps ranging from $4,821 to $3,725 between 1980 and 2000, all in favor of Canada's urban regions. In the United-States, the rural-urban income gap has been calculated at 23% ($27,776 vs. $36,079) [25]. China's focus on growth along the coasts has led to a large urban-rural income gap. There is also a wide gap in provision of social and health services between the regions. In 1993, only 10% of the rural population had medical insurance compared with 50% of urban residents [26].

C. Employment and working conditions

Those living in rural areas also experience higher rates of unemployment. Bollman's data pertaining to Canada (1992) demonstrates unemployment rates to be consistently higher in rural and small towns from 1976 through 1989, fluctuating between 7% and 12%. The 'service' industry is currently the dominant occupation in rural and small towns, although the forestry, farming and fishing, manufacturing, and mining labor forces are still very much prevalent [27]. These latter occupations are often accompanied with greater health and safety hazards due to the use of complex machinery, exposure to chemicals, working hours, noise pollution, harsher climates, and task related physicality. Such health and safety hazards can explain the higher rates of life threatening injuries that are reported from the rural workforce [28].

D. Personal health practices and coping skills

There also appears to be strong urban-rural differences in several health behaviors. According to the "How Healthy are Rural Canadians?" [13] report, persons from rural areas report higher rates of smoking, higher exposures to second-hand smoke, higher overweight/obesity rates and lower rates of fruits and vegetable consumption. Suicide rates, injury and poisoning were also important contributors to the higher mortality rates found in rural areas. In addition, the [29] reported substantially higher rates of interpersonal violence (ie. homicide) in rural areas when compared to major cities. It should also be noted that lower levels of stress and a higher sense of community belonging were found as levels of rurality increased [13].

E. Physical environment

[30] identified additional evidence of environmental variations in determinants of health. This particular project reported lower water quality and crowding of households as factors affecting disease control in rural and remote locations. As well, insufficient wastewater treatment, lack of paved roads and exposure to agricultural chemicals has been identified as additional environmental concerns for those living in rural locations [31].

F. Health Care Services

"Some would say that there is an "inverse care law" in operation. People in rural communities have poorer health status and greater needs for primary health care, yet they are not as well served and have more difficulty accessing health care services than people in urban centres". During the 1990's, only 20% of the government's public health spending went to the rural health system that served 70% of the Chinese population.

A reoccurring theme in relation 'rural and remote' demography is that its population density is low and dispersed. In relation to the current discussion are the impacts of these characteristics on health care services, more so the inability of rural and remote locations to sustain health care services at accessible locations. For example, between 1990 and 2000, 228 rural hospitals closed in the United-States (7.8%), which lead to a reduction of 8, 228 hospital beds. Canadian rural and small town

dwellers have half as many physicians (1 per 1000) as their urban counterparts, and on average, have to travel five times the distance to access these services (10 km).

While an increase in local hospital closures within rural and remote locations have resulted in a reduction of primary care and an increase in travel, these have not been the sole rural health care issues. Confirmed that “good rural health care does not depend on the presence of a very small hospital that cannot, in today’s environment, provide genuinely acute care” (p. 1803). Additional health care concerns have included quality of care, specialization of services, ambulatory care and emergency treatment, all factors that have inadvertently impacted the health of rural persons. Found reductions in specialized health care services such as dentists, dental surgeons and social workers, between 1998 and 2005 in selected rural areas of Canada. In addition, ambulatory services were only available in 40% of the selected sites, blood and urine testing services in one third of the sites, and only one of the 19 sites had neo-natal services. As well, and particularly of concern for the aging rural population, nursing services had reduced from 26.3% in 1998 to 21.1% in 2005.

It is apparent that rural and remote locations are plagued with problematic health care services. In large part, distance, isolation, and dispersed populations have been the leading causes of these problems. These common characteristics of ‘rural’ have led to difficulties in recruiting, as well as retaining, qualified and skilled professionals in the health care field. The urban and more prosperous areas are disproportionately home to the countries’ skilled health care work force in most if not all countries in Sub-Saharan Africa. For example, urban Zambia has 20 times more doctors and over five times more nurses and midwives than the rural areas. In Malawi, despite 87 percent of its population living in areas considered rural, 96.6 percent of doctors are found in urban health facilities. In Burkina Faso, there is one midwife for approximately 8,000 inhabitants in the richer zones, against one for nearly 430,000 inhabitants in the poorest zone. Many remote regions and districts do not have a single doctor, nurse or midwife to provide assistance to those that need it most . These abovementioned issues have resulted in innovative ways of delivering health care to rural dwellers, including over the phone medical consultations, travel grants, as well as mobile preventative and treatment programs. Further, there have been increased efforts to attract health professional to these isolated locations, for example increasing the number of medical students from rural areas and improving financial incentives for rural practice .

When can we expect real changes?

The many research centers (Center for Rural and Northern Health Research: Laurentian University, the Center for Rural Health at the University of North Dakota, RUPRI Center to name a few) and the many rural health advocacy groups (National Rural Health Association, National Organization of State offices of Rural Health, National Rural Health Alliance, to name a few) working hard on rural health issues have not been around for very long in comparison to other research centers. Health promotion initiatives are currently being undertaken in many rural areas with more and more emphasis placed on the participation of rural individuals to better improve specific programs . Only time will tell if any real changes shall occur, but for the time

being we need to concentrate on implementing divers programs and initiatives in order to reduce the gap between rural and urban populations. In Canada, many provinces have started to decentralize primary care and now have a more regional approach to health care. Recently, in Ontario, Canada, Local Health Integration Networks (LHIN) have been created in order to address regional issues used to decentralization planning and decision making. The Northeastern and Northwestern LHIN's have been established with the hopes of being better able to suit the needs of the many Ontarians living in rural, northern and remote areas which have to face many different problems than their urban counterparts .An over (US) $ 50 million dollar pilot project has been approved in order to improve public health in rural areas in China. According to the Ministry of Health, the program is designed to seek ways for the improvement of rural health services and sustained improvement of health level of local people . This is a step in the right direction, and will hopefully present rural China with real changes. More importantly, China is also planning to introduce a national health care system. In Australia, much progress has been made in the past decade. The most important aspect is that recognition and acceptance of the need for a distinctive approach which addresses the diversity of rural and remote Australia has been achieved. Other achievements have been made in rural infrastructure, networking and collaboration, mew models of service delivery and in research. The 1990's have been the best of times and the worst of times in rural health delivery in the United States. They have been the best of times because the influence of rural health advocates on policy development has never been stronger. The community of analysts and advocates has more breadth and depth than ever before. They have been the worst of times, because a certain emphasis has been placed on cost containment during the past 15 years which has resulted in actions that threaten the financial viability of rural providers .

How can we help?

In light of the above mentioned discussion, rural health issues have become increasingly interesting, and not to mention, complex. A few key points have arisen from this discussion that may be worth summarizing. First, there have been several attempts at delineating rural from urban. Variations of 'rural definitions' have left little hope for international comparisons. Second, the geographical diversity across countries, and within, mean that a generic geographical description of rural is unlikely. Third, rural dwellers are not a homogeneous group, different 'types' of people live under this label. Fourth, although health outcomes are generally poorer in rural areas, some discrepancies have left in doubt its direct causation. Finally, the possible determinants of health are numerous and to pin point specific factors that predicts health outcome in rural persons is nearly impossible. There is much more to 'rural health' than meets the eye. In studying rural health, one must look beyond geographical location and consider interactions among a multitude of influential factors. As stated by , "there is no one size fits all solution" (p. 160) to rural health. In other words, health issues in one area are not necessarily problematic in another.

Therefore, in an attempt to better understand and improve the health of rural persons, increased attention from academics and decision makers is needed. Continued research would contribute to our understanding of the impact of 'place' on health. Many countries have made it a priority to increase funds for rural health

research and others have yet to act upon the specific recommendations made about this funding . For instance, several countries have developed research institutes with rural health mandates (ie. Centre for Rural and Northern Health Research- Canada; Countryside Agency- United Kingdom; Institute of Rural Health- Australia; New Zealand Institute of Rural Health- New Zealand). While research plays a fundamental role in speaking for rural dwellers, it also provides decision makers with evidence based information. With that said, 'rural proofing' practices have been implemented to ensure rural needs are not overlooked in policy making. Policy makers at all levels of governance play a critical role in ensuring the health of rural populations. Policies ensuring safe living conditions right through to accessible health care services will result in equal health outcomes across rural and urban locations.

Issues in rural health

- Underserviced delivery due to a lack or maldistribution of resources, both in terms of money and labour.
- Lack of specialty services. Medical specialists often do not have enough 'critical mass' of patients to allow them to economically serve a low population area. The hardship on patients can be particularly demanding in some illnesses, say cancer, in which treatment requires regular long distance travel.

United States

The 2010 United States federal budget includes $73 million to improve both access to and quality of health care in rural areas. This funding will strengthen regional and local partnerships among rural health care providers, expand community- based prevention interventions, and promote the modernization of the health care infrastructure in rural areas.

Rural community development

Rural community development encompasses a range of approaches and activities that aim to improve the welfare and livelihoods of people living in rural areas. As a branch of community development, these approaches pay attention to social issues particularly community organizing. This is in contrast to other forms of rural development that focus on public works (e.g. rural roads and electrification) and technology (e.g. tools and techniques for improving agricultural production).

Rural community development is important in developing countries where a large part of the population is engaged in farming. Consequently, a range of community development methods have been created and used by organisations involved in international development. Most of these efforts to promote rural community development are led by 'experts' from outside the community such as government officials, staff of Non-governmental organizations and foreign advisers. This has led to a long debate about the issue of participation, in which questions have been raised about the sustainability of these efforts and the extent to which rural people are - or are not – being empowered to make decisions for themselves.

Rural Community Development in the United Kingdom

In the UK rural community development is seen as very important. Rural areas are often some of the most deprived in the country. Rural Community Councils around the country support local rural communities in securing sustainable futures. The local rural communities are supported by experienced community development workers.

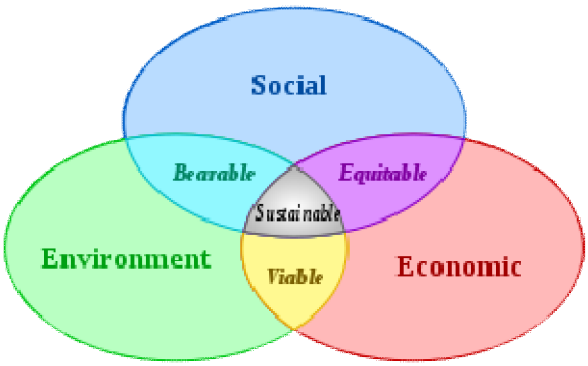
Rural Community Development in the United States

In the United States, rural community development is an essential tool in keeping rural areas economically viable in a very competitive global arena. Under the United States Department of Agriculture, this is addressed through the Rural Development mission area, comprising the Rural Housing Service, Rural Utilities Service, and Rural Business-Cooperative Service. Research and data sources for rural areas of the United States is also addressed by the United States Department of Agriculture through the Economic Research Service and the National Agricultural Library's Rural Information Center.

Part of the United States Department of Commerce, the Economic Development Administration (EDA) is tasked within it's mission "to generate jobs, help retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas of the United States. EDA assistance is available to rural and urban areas of the Nation experiencing high unemployment, low income, or other severe economic distress."

There are four Regional Rural Development Centers in the United States that coordinate "rural development research and extension (education) programs cooperatively with the land-grant institutions regionally and nationally. The Centers support and strengthen individual state efforts in rural areas by developing networks of university research and extension faculty from a variety of disciplines to address rural issues."

Sustainable development



Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations. The term was used by the Brundtland Commission which coined what has become the most often-quoted definition of sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs."

Sustainable development ties together concern for the carrying capacity of natural systems with the social challenges facing humanity. As early as the 1970s "sustainability" was employed to describe an economy "in equilibrium with basic ecological support systems." Ecologists have pointed to The Limits to Growth,[*citation needed*] and presented the alternative of a “steady state economy”[5] in order to address environmental concerns.

The field of sustainable development can be conceptually broken into three constituent parts: environmental sustainability, economic sustainability and sociopolitical sustainability.

Scope and definitions

The concept has included notions of weak sustainability, strong sustainability and deep ecology. Sustainable development does not focus solely on environmental issues.

In 1987, the United Nations released the Brundtland Report, which defines sustainable development as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs.'[6]

The United Nations 2005 World Summit Outcome Document refers to the "interdependent and mutually reinforcing pillars" of sustainable development as economic development, social development, and environmental protection.[7]

Indigenous people have argued, through various international forums such as the United Nations Permanent Forum on Indigenous Issues and the Convention on Biological Diversity, that there are *four* pillars of sustainable development, the fourth being cultural. *The Universal Declaration on Cultural Diversity* (UNESCO, 2001) further elaborates the concept by stating that "...cultural diversity is as necessary for humankind as biodiversity is for nature”; it becomes “one of the roots of development understood not simply in terms of economic growth, but also as a means to achieve a more satisfactory intellectual, emotional, moral and spiritual existence". In this vision, cultural diversity is the fourth policy area of sustainable development.

Economic Sustainability: Agenda 21 clearly identified information, integration, and participation as key building blocks to help countries achieve development that recognises these interdependent pillars. It emphasises that in sustainable development everyone is a user and provider of information. It stresses the need to change from old sector-centred ways of doing business to new approaches that involve cross-sectoral co-ordination and the integration of environmental and social concerns into all development processes. Furthermore, Agenda 21 emphasises that

broad public participation in decision making is a fundamental prerequisite for achieving sustainable development.

According to Hasna, sustainability is a process which tells of a development of all aspects of human life affecting sustenance. It means resolving the conflict between the various competing goals, and involves the simultaneous pursuit of economic prosperity, environmental quality and social equity famously known as three dimensions (triple bottom line) with is the resultant vector being technology, hence it is a continually evolving process; the 'journey' (the process of achieving sustainability) is of course vitally important, but only as a means of getting to the destination (the desired future state). However,the 'destination' of sustainability is not a fixed place in the normal sense that we understand destination. Instead, it is a set of wishful characteristics of a future system.[9]

Green development is generally differentiated from sustainable development in that Green development prioritizes what its proponents consider to be environmental sustainability over economic and cultural considerations. Proponents of Sustainable Development argue that it provides a context in which to improve overall sustainability where cutting edge Green development is unattainable. For example, a cutting edge treatment plant with extremely high maintenance costs may not be sustainable in regions of the world with fewer financial resources. An environmentally ideal plant that is shut down due to bankruptcy is obviously less sustainable than one that is maintainable by the community, even if it is somewhat less effective from an environmental standpoint.

Some research activities start from this definition to argue that the environment is a combination of nature and culture. The Network of Excellence "Sustainable Development in a Diverse World",[10] sponsored by the European Union, integrates multidisciplinary capacities and interprets cultural diversity as a key element of a new strategy for sustainable development.

Still other researchers view environmental and social challenges as opportunities for development action. This is particularly true in the concept of sustainable enterprise that frames these global needs as opportunities for private enterprise to provide innovative and entrepreneurial solutions. This view is now being taught at many business schools including the Center for Sustainable Global Enterprise at Cornell University and the Erb Institute for Global Sustainable Enterprise at the University of Michigan.

The United Nations Division for Sustainable Development lists the following areas as coming within the scope of sustainable development:[11]

Sustainable development is an eclectic concept, as a wide array of views fall under its umbrella. The concept has included notions of weak sustainability, strong sustainability and deep ecology. Different conceptions also reveal a strong tension between ecocentrism and anthropocentrism. Many definitions and images (Visualizing Sustainability) of sustainable development coexist. Broadly defined, the sustainable development mantra enjoins current generations to take a systems

approach to growth and development and to manage natural, produced, and social capital for the welfare of their own and future generations.

During the last ten years, different organizations have tried to measure and monitor the proximity to what they consider sustainability by implementing what has been called sustainability metrics and indices[12].

Sustainable development is said to set limits on the developing world. While current first world countries polluted significantly during their development, the same countries encourage third world countries to reduce pollution, which sometimes impedes growth. Some consider that the implementation of sustainable development would mean a reversion to pre-modern lifestyles.

Others have criticized the overuse of the term:

> "[The] word sustainable has been used in too many situations today, and ecological sustainability is one of those terms that confuse a lot of people. You hear about sustainable development, sustainable growth, sustainable economies, sustainable societies, sustainable agriculture. Everything is sustainable (Temple, 1992)."[13]

Environmental sustainability

Environmental sustainability is the process of making sure current processes of interaction with the environment are pursued with the idea of keeping the environment as pristine as naturally possible based on ideal-seeking behavior.

An "unsustainable situation" occurs when natural capital (the sum total of nature's resources) is used up faster than it can be replenished. Sustainability requires that human activity only uses nature's resources at a rate at which they can be replenished naturally. Inherently the concept of sustainable development is intertwined with the concept of carrying capacity. Theoretically, the long-term result of environmental degradation is the inability to sustain human life. Such degradation on a global scale could imply extinction for humanity.

Consumption of renewable resources	State of environment	Sustainability
More than nature's ability to replenish	Environmental degradation	Not sustainable
Equal to nature's ability to replenish	Environmental equilibrium	Steady state economy

Less than nature's ability to replenish	Environmental renewal	Environmentally sustainable

The notion of capital in sustainable development

The sustainable development debate is based on the assumption that societies need to manage three types of capital (economic, social, and natural), which may be non-substitutable and whose consumption might be irreversible. Daly (1991), for example, points to the fact that natural capital can not necessarily be substituted by economic capital. While it is possible that we can find ways to replace some natural resources, it is much more unlikely that they will ever be able to replace eco-system services, such as the protection provided by the ozone layer, or the climate stabilizing function of the Amazonian forest. In fact natural capital, social capital and economic capital are often complementarities. A further obstacle to substitutability lies also in the multi-functionality of many natural resources. Forests, for example, do not only provide the raw material for paper (which can be substituted quite easily), but they also maintain biodiversity, regulate water flow, and absorb CO2. Another problem of natural and social capital deterioration lies in their partial irreversibility. The loss in biodiversity, for example, is often definite. The same can be true for cultural diversity. For example with globalisation advancing quickly the number of indigenous languages is dropping at alarming rates. Moreover, the depletion of natural and social capital may have non-linear consequences. Consumption of natural and social capital may have no observable impact until a certain threshold is reached. A lake can, for example, absorb nutrients for a long time while actually increasing its productivity. However, once a certain level of algae is reached lack of oxygen causes the lake's ecosystem to break down all of a sudden.

Market failure

If the degradation of natural and social capital has such important consequence the question arises why action is not taken more systematically to alleviate it. Cohen and Winn (2007)[16] point to four types of market failure as possible explanations: First, while the benefits of natural or social capital depletion can usually be privatized the costs are often externalized (i.e. they are borne not by the party responsible but by society in general). Second, natural capital is often undervalued by society since we are not fully aware of the real cost of the depletion of natural capital. Information asymmetry is a third reason—often the link between cause and effect is obscured, making it difficult for actors to make informed choices. Cohen and Winn close with the realization that contrary to economic theory many firms are not perfect optimizers. They postulate that firms often do not optimize resource allocation because they are caught in a "business as usual" mentality.

The business case for sustainable development

The most broadly accepted criterion for corporate sustainability constitutes a firm's efficient use of natural capital. This eco-efficiency is usually calculated as the economic value added by a firm in relation to its aggregated ecological impact.[17]

This idea has been popularised by the World Business Council for Sustainable Development (WBCSD) under the following definition: “Eco-efficiency is achieved by the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth’s carrying capacity.” (DeSimone and Popoff, 1997: 47)

Similar to the eco-efficiency concept but so far less explored is the second criterion for corporate sustainability. Socio-efficiency describes the relation between a firm’s value added and its social impact. Whereas, it can be assumed that most corporate impacts on the environment are negative (apart from rare exceptions such as the planting of trees) this is not true for social impacts. These can be either positive (e.g. corporate giving, creation of employment) or negative (e.g. work accidents, mobbing of employees, human rights abuses). Depending on the type of impact socio-efficiency thus either tries to minimize negative social impacts (i.e. accidents per value added) or maximise positive social impacts (i.e. donations per value added) in relation to the value added.

Both eco-efficiency and socio-efficiency are concerned primarily with increasing economic sustainability. In this process they instrumentalize both natural and social capital aiming to benefit from win-win situations. However, as Dyllick and Hockerts[19] point out the business case alone will not be sufficient to realise sustainable development. They point towards eco-effectiveness, socio-effectiveness, sufficiency, and eco-equity as four criteria that need to be met if sustainable development is to be reached.

Critique of the concept of sustainable development

The concept of “ Sustainable Development ” raises several critiques at different levels.

Purpose

Various writers have commented on the population control agenda that seems to underlie the concept of sustainable development. Maria Sophia Aguirre writes:[20]

"Sustainable development is a policy approach that has gained quite a lot of popularity in recent years, especially in international circles. By attaching a specific interpretation to sustainability, population control policies have become the overriding approach to development, thus becoming the primary tool used to “promote” economic development in developing countries and to protect the environment."

Mary Jo Anderson suggests that the real purpose of sustainable development is to contain and limit economic development in developing countries, and in so doing control population growth. It is suggested that this is the reason the main focus of most programs is still on low-income agriculture. Joan Veon, a businesswoman and international reporter, who covered 64 global meetings on sustainable development posits that:

"Sustainable development has continued to evolve as that of protecting the world's resources while its true agenda is to control the world's resources. It should be noted that Agenda 21 sets up the global infrastructure needed to manage, count, and control all of the world's assets."

Consequences

John Baden reckons that the notion of sustainable development is dangerous because the consequences are proceedings with unknown effects or potentially dangerous. He writes: "In economy like in ecology, the interdependence rules applies. Isolated actions are impossible. A policy which is not enough carefully thought will carry along various perverse and adverse effects for the ecology as much as for the economy. Many suggestions to save our environment and to promote a model of 'sustainable development' risk indeed leading to reverse effects." Moreover, he evokes the bounds of the public action which are underlined by the public choice theory: quest by the politics of their own interests, lobby pressure, partial disclosure etc. He develops his critique by noting the vagueness of the expression, which can cover anything : It is a gateway to interventionist proceedings which can be against the principle of freedom and without proven efficacy. Against this notion, he is a proponent of private property to impel the producers and the consumers to save the natural resources. According to Baden, “the improvement of environment quality depends on the market economy and the existence of legitimate and protected property rights.” They enable the effective practice of personal responsibility and the development of mechanisms to protect the environment. The State can in this context “create conditions which encourage the people to save the environment.”

Vagueness of the term

The term of “sustainable development” is criticized because of its vagueness. For example, Jean-Marc Jancovic or the philosopher Luc Ferry express this view. The latter writes about sustainable development: "I know that this term is obligatory, but I find it also absurd, or rather so vague that it says nothing." Luc Ferry adds that the term is trivial by a proof by contradiction: "who would like to be a proponent of an “untenable development! Of course no one! [..] The term is more charming than meaningful. [..] Everything must be done so that it does not turn into a Russian-type administrative planning with ill effects."

Basis

Sylvie Brunel, French geographer and specialist of the Third World, develops in *A qui profite le développement durable* (Who benefits from sustainable development?) (2008) a critique of the basis of sustainable development, with its binary vision of the world, can be compared to the Christian vision of Good and Evil, a idealized nature where the human being is an animal like the others or even an alien. Nature – as Rousseau thought – is better than the human being. It is a parasite, harmful for the nature. But the human is the one who protects the biodiversity, where normally only the strong survive.[28]

Moreover, she thinks that the ideas of sustainable development can hide a will to protectionism from the developed country to impede the development of the other countries. For Sylvie Brunel, the sustainable development serves as a pretext for the protectionism and “I have the feeling about sustainable development that it is perfectly helping out the capitalism”.[28]

“De-growth"

The proponents of the de-growth reckon that the term of sustainable development is an oxymoron. According to them, on a planet where 20% of the population consumes 80% of the natural resources, a sustainable development cannot be possible for this 20%: “According to the origin of the concept of sustainable development , a development which meets the needs of the present without compromising the ability of future generations to meet their own needs, the right term for the developed countries should be a sustainable de-growth”.[29]

Sustainable development in economics

The Venn diagram of sustainable development shown above has many versions, but was first used by economist Edward Barbier (1987). However, Pearce, Barbier and Markandya (1989) criticized the Venn approach due to the intractability of operationalizing separate indices of economic, environmental, and social sustainability and somehow combining them. They also noted that the Venn approach was inconsistent with the Brundtland Commission Report, which emphasized the interlinkages between economic development, environmental degradation, and population pressure instead of three objectives. Economists have since focused on viewing the economy and the environment as a single interlinked system with a unified valuation methodology (Hamilton 1999, Dasgupta 2007). Intergenerational equity can be incorporated into this approach, as has become common in economic valuations of climate change economics (Heal,2009). Ruling out discrimination against future generations and allowing for the possibility of renewable alternatives to petro-chemicals and other non-renewable resources, efficient policies are compatible with increasing human welfare, eventually reaching a golden-rule steady state (Ayong le Kama, 2001 and Endress et al.2005). Thus the three pillars of sustainable development are interlinkages, intergenerational equity, and dynamic efficiency (Stavins, et al 2003).

Arrow et al. (2004) and other economists (e.g. Asheim,1999and Pezzey, 1989 and 1997) have advocated a form of the weak criterion for sustainable development – the requirement than the wealth of a society, including human-capital, knowledge-capital and natural-capital (as well as produced capital) not decline over time. Others, including Barbier 2007, continue to contend that strong sustainability – non-depletion of essential forms of natural capital – may be appropriate.

Types of rural communities

Sociologists have identified a number of different **types of rural communities**, which have arisen as a result of changing economic trends within rural regions of industrial nations.

The basic trend seems to be one in which communities are required to become entrepreneurial. Those that lack the sort of characteristics mentioned below, are forced to either seek out their niche or accept eventual economic defeat. These towns focus on marketing and public relations whilst bidding for business and government operations; such as, off-site data processing or, perhaps, a factory.

For instance; International Falls, Minnesota markets itself as a site for sub-zero temperature experiments; Ottawa, Illinois managed to attract three Japanese firms; Freeport, Maine has become a center for mail-order companies such as L. L. Bean; and Mobile, Arizona has become the home of a number of solid-waste landfills.

Academic Communities

Academic communities are those in which the primary employers are boarding schools, colleges, universities, research laboratories, and corporate training facilities. These communities bring people away from other regions and thus bring new capital into the area.

Academic institutions, in rural areas, are very much like a factory in that the economic success of the community depends upon the success of the institution. Unlike factories, academic institutions tend to primarily offer jobs in the medium-skilled to professional range.

Area Trade-Centers

The automobile allows rural residents to travel farther, in less time, for goods and services. This reduces the importance of the rural store, along with decreasing rural population (see: rural exodus). As business relocate from impoverished communities, one town will become the trade center for its region, sometimes doing so by constructing a shopping mall.

Generally, business in a trade-center town, except for those in competition with the mall, will benefit from the mall's presence as shoppers spill over. These trade centers will knock out businesses in, and thus impoverish, nearby towns as shoppers converge on the town with the greatest variety of stores.

Exurbs

Government Centers

Rural regions are undergoing increasing government consolidation. This results in a small number of towns becoming centers of government activity, while the rest are

devoid of government infrastructure. These centers include state and local capitals, and areas with prisons or military bases.

Centralized public administration focuses public-sector employment on a single community, assisting it over its neighbors. Benefits, for the government center, include improved public services, increased efficiency, and economic savings.

Recreation Communities

Recreation communities (tourist towns) define some local feature, usually a historic site or scenic vista, as a "natural resource" and market this to tourists. Travelers will then spend money on food, hotels, and the like, which brings capital into the town.

Retirement Communities

Retirement communities tend to house large numbers of elderly people. These retirees, bring pensions, Social Security, and savings which infuse the area with capital. Rural hospitals are increasingly unable to bring enough patients to support their operational budget, and retirement communities have developed, in some areas, as a means to solve this problem.

It should be noted that elderly residents, who migrate from the cities, tend to have above average wealth, thus creating an income disparity between the migrant retirees and the local elderly.

Rural flight

Rural flight (or **rural exodus**) is a term used to describe the migratory patterns of peoples from rural areas into urban areas. It often occurs in a region following the mechanization of agriculture when fewer people are needed to bring the same amount of agricultural output to market. Rural flight is exacerbated when the population decline leads to the loss of rural services such as stores and schools, when then leads to greater loss of population.

In the United States and Canada

The term is used in the United States and Canada to describe the flight of people from rural areas in the Great Plains and Midwest regions, and to a lesser extent rural areas of the northeast and southeast.

Historical trends

The shift from mixed subsistence farming to commoditized crop and livestock began in the late 19th century. New capital market systems and the railroad network began the trend towards larger farms that employed fewer people per acre. These larger farms used more efficient technologies such as Deere plows, automatic reapers, and higher-yield seed stock, which reduced human input per unit of production. During the Dust Bowl and Great Depression of the 1930s, large numbers of people fled rural

areas of the Plains and Midwest because of depressed commodity prices, high debt load, and several years of drought and large dust storms. Rural flight from the Great Plains has been depicted in literature, such as John Steinbeck's novel *The Grapes of Wrath* (1939), in which a family from the Great Plains migrates to California during the Dust Bowl period of the 1930s.

Modern rural flight

Post-World War II rural flight is caused by the growing industrialization of agriculture, in which small, labor-intensive family farms grow into, or are replaced by, heavily mechanized and specialized industrial farms. While a small family farm typically produced a wide range of crop, garden, and animal products, all requiring substantial labor, large industrial farms typically specialize in just a few crop or livestock varieties, using large machinery and high-density livestock containment systems that require a fraction of the labor per unit produced. The consolidation of the feed, seed, processed grain, and livestock industries meant that there are fewer small businesses in rural areas, which exacerbated the decreased demand for labor. Rural areas that used to be able to provide employment for all young adults willing to work in challenging conditions, increasingly provide fewer opportunities for young adults. The situation is made worse by the decrease in services such as schools, stores, and cultural opportunities that accompany the decline in population, and the increasing age of the remaining population further stresses the social service system of rural areas.

Abandonment of small towns

The loss of population in rural areas leads to the abandonment of small towns, turning their once thriving downtowns into empty or underutilized storefronts.

German *Landflucht*

In Germany *Landflucht* ("flight from the land") refers to the mass migration of peasants into the cities that occurred in Germany (and throughout most of Europe) in the late 19th century.

In 1870 the rural population of Germany constituted 64% of the population; by 1907 it had shrunk to 33% In 1900 alone, the Prussian provinces of East Prussia, West Prussia, Posen, Silesia, and Pomerania lost about 1,600,000 people to the cities,[7] where these former agricultural workers were absorbed into the rapidly growing factory labor class; One of the causes of this mass-migration was the decrease in rural income compared to the rates of pay in the cities. *Landflucht* resulted in a major transformation of the German countryside and agriculture. Mechanized agriculture and migrant workers, particularly Poles from the east (Sachsenganger), became more common. This was especially true in the province of Posen that was gained by Prussia when Poland was partitioned. The Polish population of eastern Germany was one of the justifications for the creation of the "Polish corridor" after World War I and the absorption of the land east of the Oder-Neisse line into Poland after World War II. Also, some labor-intensive enterprises were replaced by much less labor-intensive ones such as game preserves.[10]

The word *landflucht* has negative connotations in German, as it was coined by agricultural employers, often of the German aristocracy, who were lamenting their labor shortages.

Contemporary developing countries

Today the phenomenon of rural flight is also well-known in developing countries, where many people in the countryside live below the poverty line. They migrate to cities to find employment or to get money by begging.

Role homogeneity

In sociology, **role homogeneity** is the degree of overlap amongst the different roles performed by different members of a community.

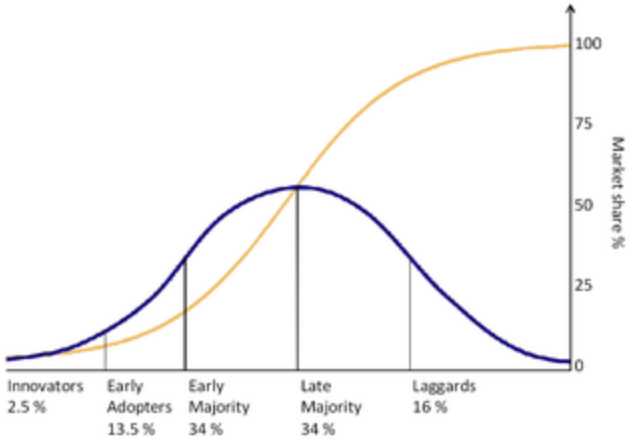
Rural sociology

Rural sociologists often note that amongst rural communities there exists a very high degree of role homogeneity, that is, one person may perform the duties of banker, coach, deacon, school board member, and neighbor.

Controversy

Sociologists have demonstrated that in areas of strong homogeneity, there is a general tendency to repress controversy. As a result, when disagreements arise, they can result into serious crises. Such communities tend to have local newspapers which are more oriented towards marketing, rather than news. What news is published, in a highly-homogeneous society, tends to focus on non-controversial topics and avoid "bad news".

Diffusion of innovations



The diffusion of innovations according to Rogers. With successive groups of consumers adopting the new technology (shown in blue), its market share (yellow) will eventually reach the saturation level.

Diffusion of Innovations is a theory of how, why, and at what rate new ideas and technology spread through cultures. The concept was first studied by the French sociologist Gabriel Tarde (1890) and by German and Austrian anthropologists such as Friedrich Ratzel or Leo Frobenius [1]. Its basic epidemiological or internal-influence form was described by H. Earl Pemberton[2], who provided examples of institutional diffusions such as postage stamps or compulsory school laws. The publication of a study of Ryan and Gross on the diffusion of hybrid corn in Iowa[3] was the first sustainably visible contribution in a broader interest in innovations which was especially popularized by the textbook by Everett Rogers (1962), *Diffusion of Innovations* (Rogers 1964). He defines diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system." [1]

History

The origins of the diffusion of innovations theory are varied and span across multiple disciplines. Rogers identifies six main traditions that impacted diffusion research: anthropology, early sociology, rural sociology, education, industrial, and medical sociology. The diffusion of innovation theory has been largely influenced by the work of rural sociologists [4]. In the book *Diffusion of Innovations*, Rogers synthesizes research from over 508 diffusion studies and produces a theory for the adoption of innovations among individuals and organizations.

Elements of diffusion of innovations

The key elements in diffusion research are: the innovation, types of communication channels, time or rate of adoption, and the social system which frames the innovation decision process.

Types of innovation-decisions

There are three types of innovation-decisions within diffusion of innovations. An individual or an organization/social system bases the type of decision on whether an innovation is adopted/rejected. The three types of innovation-decisions are: Optional innovation-decisions, collective innovation-decisions, authority innovation-decisions.

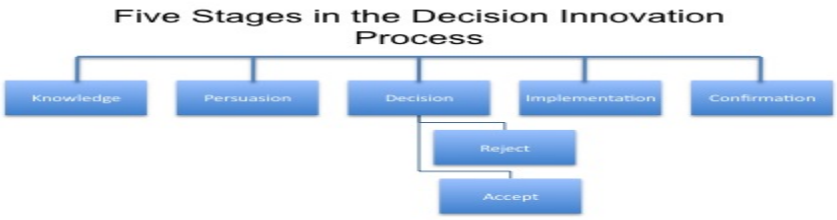
Optional Innovation-Decision
This decision is made by an individual who is in some way distinguished from others in a social system.
Collective Innovation-Decision
This decision is made collectively by all individuals of a social system.
Authority Innovation-Decision
This decision is made for the entire social system by few individuals in positions of influence or power.

The adoption process

Diffusion of an innovation occurs through a five–step process. This process is a type of decision-making. It occurs through a series of communication channels over a

period of time among the members of a similar social system. Ryan & Gross first indicated the identification of adoption as a process in 1943 (Rogers 1964, p. 79). Rogers categorizes the five stages (steps) as: awareness, interest, evaluation, trial, and adoption. It should be noted that an individual might reject an innovation at anytime during or after the adoption process. In later editions of the Diffusion of Innovations Rogers changes the terminology of the five stages to: knowledge, persuasion, decision, implementation, and confirmation. However the descriptions of the categories have remained similar throughout the editions.

Five stages of the adoption process



Knowledge

In this stage the individual is first exposed to an innovation but lacks information about the innovation. It should be noted that during this stage of the process the individual has not been inspired to find more information about the innovation.

Persuasion

In this stage the individual is interested in the innovation and actively seeks information/detail about the innovation.

Decision

In this stage the individual takes the concept of the innovation and weighs the advantages/disadvantages of using the innovation and decides whether to adopt or reject the innovation. Due to the individualistic nature of this stage Rogers notes that it is the most difficult stage to acquire empirical evidence (Rogers 1964, p. 83).

Implementation

In this stage the individual employs the innovation to a varying degree depending on the situation. During this stage the individual determines the usefulness of the innovation and may search for further information about it.

Confirmation

Although the name of this stage may be misleading, in this stage the individual finalizes their decision to continue using the innovation and may use the innovation to its fullest potential.

Rates of adoption

The rate of adoption is defined as: the relative speed with which members of a social system adopt an innovation. It is usually measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation (Rogers 1964, p. 134). The rates of adoption for innovations are determined by an individual's adopter category. In general individuals who first adopt an innovation require a shorter adoption period (adoption process) than late adopters.
Within the rate of adoption there is a point at which a innovation reaches critical mass. This is a point in time within the adoption curve that enough individuals have adopted an innovation in order that the continued adoption of the innovation is self-sustaining. In describing how an innovation reaches critical mass, Rogers outlines several strategies in order to help a innovation reach this stage. These strategies are: have an innovation adopted by a highly respected individual within a social network, creating an instinctive desire for a specific innovation. Inject an innovation into a group of individuals who would readily use an innovation, and provide positive reactions and benefits for early adopters of an innovation.

Characteristics of innovations

Rogers defines several intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation. The relative advantage is how improved an innovation is over the previous generation. Compatibility is the second characteristic, the level of compatibility that an innovation has to be assimilated into an individual's life. The complexity of an innovation is a significant factor in whether it is adopted by an individual. If the innovation is too difficult to use an individual will not likely adopt it. The fourth characteristic, trialability, determines how easily an innovation may be experimented with as it is being adopted. If a user has a hard time using and trying an innovation this individual will be less likely to adopt it. The final characteristic, observability, is the extent that an innovation is visible to others. An innovation that is more visible will drive communication among the individual's peers and personal networks and will in turn create more positive or negative reactions.

Adopter categories

Rogers defines an adopter category as a classification of individuals within a social system on the basis of innovativeness. In the book *Diffusion of Innovations*, Rogers suggests a total of five categories of adopters in order to standardize the usage of adopter categories in diffusion research. It should be noted that the adoption of an innovation follows an S curve when plotted over a length of time.[*citation needed*] The categories of adopters are: innovators, early adopters, early majority, late majority, and laggards (Rogers 1964, p. 150)

Innovators

Innovators are the first individuals to adopt an innovation. Innovators are willing to take risks, youngest in age, have the highest social class, have great financial lucidity, very social and have closest contact to scientific sources and interaction with other innovators.

Early Adopters

This is second fastest category of individuals who adopt an innovation. These individuals have the highest degree of opinion leadership among the other adopter categories. Early adopters are typically younger in age, have a higher social status, have more financial lucidity, advanced education, and are more socially forward than late adopters (Rogers 1964, p. 185).

Early Majority

Individuals in this category adopt an innovation after a varying degree of time. This time of adoption is significantly longer than the innovators and early adopters. Early Majority tend to be slower in the adoption process, have above average social status, contact with early adopters, and show some opinion leadership

Late Majority

Individuals in this category will adopt an innovation after the average member of the society. These individuals approach an innovation with a high degree of skepticism and after the majority of society has adopted the innovation. Late Majority are typically skeptical about an innovation, have below average social status, very little financial lucidity, in contact with others in late majority and early majority, very little opinion leadership.

Laggards

Individuals in this category are the last to adopt an innovation. Unlike some of the previous categories, individuals in this category show little to no opinion leadership. These individuals typically have an aversion to change-agents and tend to be advanced in age. Laggards typically tend to be focused on “traditions”, have lowest social status, lowest financial fluidity, oldest of all other adopters, in contact with only family and close friends, very little to no opinion leadership.

Opinion leaders and communication channels

Throughout the diffusion process there is evidence that not all individuals exert an equal amount of influence over all individuals. In this sense there are Opinion Leaders, leaders who are influential in spreading either positive or negative information about an innovation. Rogers relies on the ideas of Katz & Lazarsfeld and the two-step flow theory in developing his ideas on the influence of Opinion Leaders in the diffusion process [5] Opinion Leaders have the most influence during the evaluation stage of the innovation-decision process and late adopters (Rogers 1964, p. 219). In addition opinion leaders have a set of characteristics that set them apart from their followers and other individuals. Opinion Leaders typically have greater exposure to the mass media, more cosmopolitan, greater contact with change agents, more social experience and exposure, higher socioeconomic status, and are more innovative.

Diffusion in organizations

Innovations are often adopted by organizations through two types of innovation-decisions: collective innovation decisions and authority innovation decisions. The collection-innovation decision occurs when the adoption of an innovation has been made by a consensus among the members of an organization. The authority-innovation decision occurs when the adoption of an innovation has been made by very few individuals with high positions of power within an organization (Rogers 2005, p. 403). Unlike the optional innovation decision process, these innovation-decision processes only occur within an organization or hierarchical group. Within the innovation decision process in an organization there are certain individuals termed "champions" who stand behind an innovation and break through any opposition that the innovation may have caused. The champion within the diffusion of innovation theory plays a very similar role as to the champion used within the efficiency business model Six Sigma. The innovation process within an organization contains five stages that are slightly similar to the innovation-decision process that individuals undertake. These stages are: agenda-setting, matching, redefining/restructuring, clarifying, routinizing.

Consequences of adoption

There are both positive and negative outcomes when an individual or organization chooses to adopt a particular innovation. Rogers states that this is an area that needs further research because of the biased positive attitude that is associated with the adoption of a new innovation (Rogers 2005, p. 470). In the Diffusion of Innovation, Rogers lists three categories for consequences, desirable vs. undesirable, direct vs. indirect, and anticipated vs. unanticipated.

Diffusion and management

Much of the evidence for the diffusion of innovations gathered by Rogers comes from agricultural methods and medical practice.

Various computer models have been developed in order to simulate the diffusion of innovations. Veneris developed a systems dynamics computer model which takes into account various diffusion patterns modeled via differential equations.

There are a number of criticisms of the model which make it less than useful for managers. First, technologies are not static. There is continual innovation in order to attract new adopters all along the S-curve. The S-curve does not just 'happen'. Instead, the s-curve can be seen as being made up of a series of 'bell curves' of different sections of a population adopting different versions of a generic innovation.

The role of electronic communication social networks in assisting the diffusion of innovation

Prior to the introduction of the Internet, it was argued that social networks had a crucial role in the diffusion of innovation particularly Tacit knowledge in the book The IRG Solution - hierarchical incompetence and how to overcome it. The book argued that the widespread adoption of computer networks of individualss would lead to the much better diffusion of innovations, and with greater understanding of their possible shortcomings, and the identification of needed innovations that would not have otherwise occurred - the Relevance paradox.

Education

Education in its broadest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual. In its technical sense **education** is the process by which society deliberately transmits its accumulated knowledge, skills and values from one generation to another.

Teachers in educational institutions direct the education of students and might draw on many subjects, including reading, writing, mathematics, science and history. This process is sometimes called schooling when referring to the education of teaching only a certain subject, usually as professors at institutions of higher learning. There is also education in fields for those who want specific vocational skills, such as those required to be a pilot. In addition there is an array of education possible at the

informal level, e.g., at museums and libraries, with the Internet, and in life experience.

The right to education has been described as a basic human right: since 1952, Article 2 of the first Protocol to the European Convention on Human Rights obliges all signatory parties to guarantee the right to education. At world level, the United Nations' International Covenant on Economic, Social and Cultural Rights of 1966 guarantees this right under its Article 13.

Systems of formal education

Education is a concept, referring to the process in which students can learn something:

- **Instruction** refers to the facilitating of learning toward identified objectives, delivered either by an instructor or other forms.
- **Teaching** refers to the actions of a real live instructor designed to impart learning to the student.
- **Learning** refers to learning with a view toward preparing learners with specific knowledge, skills, or abilities that can be applied immediately upon completion.

Primary education

Primary (or elementary) education consists of the first 5-7 years of formal, structured education. In general, main education consists of six or eight years of schooling starting at the age of five or six, although this varies between, and sometimes within, countries. Globally, around 70% of primary-age children are enrolled in primary education, and this proportion is rising.[1] Under the Education for All programs driven by UNESCO, most countries have committed to achieving universal enrollment in primary education by 2015, and in many countries, it is compulsory for children to receive primary education. The division between primary and secondary education is somewhat arbitrary, but it generally occurs at about eleven or twelve years of age. Some education systems have separate middle schools, with the transition to the final stage of secondary education taking place at around the age of fourteen. Schools that provide primary education, are mostly referred to as *primary schools*. Primary schools in these countries are often subdivided into infant schools and junior schools.

Secondary education

In most contemporary educational systems of the world, secondary education consists of the second years of formal education that occur during adolescence.[*citation needed*] It is characterized by transition from the typically compulsory, comprehensive primary education for minors, to the optional, selective tertiary, "post-secondary", or "higher" education (e.g., university, vocational school) for adults.[*citation needed*] Depending on the system, schools for this period, or a part of it, may be called secondary or high schools, gymnasiums, lyceums, middle schools, colleges, or vocational schools. The exact meaning of any of these terms varies from one system

to another. The exact boundary between primary and secondary education also varies from country to country and even within them, but is generally around the seventh to the tenth year of schooling. Secondary education occurs mainly during the teenage years. In the United States and Canada primary and secondary education together are sometimes referred to as K-12 education, and in New Zealand Year 1-13 is used. The purpose of secondary education can be to give common knowledge, to prepare for higher education or to train directly in a profession.

The emergence of secondary education in the United States did not happen until 1910, caused by the rise in big businesses and technological advances in factories (i.e. emergence of electrification), that required skilled workers. In order to meet this new job demand, high schools were created and the curriculum focused on practical job skills that would better prepare students for white collar or skilled blue collar work. This proved to be beneficial for both the employer and the employee, because this improvement in human capital caused employees to become more efficient, which lowered costs for the employer, and skilled employees received a higher wage than employees with just primary educational attainment.

In Europe the grammar school or academy existed from as early as the 1500s, public schools or fee paying schools, or charitable educational foundations have an even longer history.

Higher education

Higher education, also called tertiary, third stage, or post secondary education, is the non-compulsory educational level that follows the completion of a school providing a secondary education, such as a high school, secondary school. Tertiary education is normally taken to include undergraduate and postgraduate education, as well as vocational education and training. Colleges and universities are the main institutions that provide tertiary education. Collectively, these are sometimes known as tertiary institutions. Tertiary education generally results in the receipt of certificates, diplomas, or academic degrees.

Higher education includes teaching, research and social services activities of universities, and within the realm of teaching, it includes both the *undergraduate* level (sometimes referred to as tertiary education) and the *graduate* (or *postgraduate*) level (sometimes referred to as graduate school). Higher education in that country generally involves work towards a degree-level or foundation degree qualification. In most developed countries a high proportion of the population (up to 50%) now enter higher education at some time in their lives. Higher education is therefore very important to national economies, both as a significant industry in its own right, and as a source of trained and educated personnel for the rest of the economy.[*citation needed*]

Adult education

Adult education has become common in many countries. It takes on many forms, ranging from formal class-based learning to self-directed learning and e-learning. A number of career specific courses such as veterinary, medical billing and coding, real

estate license, bookkeeping and many more are now available to students through the Internet.

Alternative education

Alternative education, also known as *non-traditional education* or *educational alternative*, is a broad term that may be used to refer to all forms of education outside of traditional education (for all age groups and levels of education). This may include not only forms of education designed for students with special needs (ranging from teenage pregnancy to intellectual disability), but also forms of education designed for a general audience and employing alternative educational philosophies and methods.

Alternatives of the latter type are often the result of education reform and are rooted in various philosophies that are commonly fundamentally different from those of traditional compulsory education. While some have strong political, scholarly, or philosophical orientations, others are more informal associations of teachers and students dissatisfied with certain aspects of traditional education[*citation needed*]. These alternatives, which include charter schools, alternative schools, independent schools, and home-based learning vary widely, but often emphasize the value of small class size, close relationships between students and teachers, and a sense of community[*citation needed*].

Indigenous education

Increasingly, the inclusion of indigenous models of education (methods and content) as an alternative within the scope of formal and non-formal education systems, has come to represent a significant factor contributing to the success of those members of indigenous communities who choose to access these systems, both as students/learners and as teachers/instructors.

As an educational method, the inclusion of indigenous ways of knowing, learning, instructing, teaching and training, has been viewed by many critical and postmodern scholars as important for ensuring that students/learners and teachers/instructors (whether indigenous or non-indigenous) are able to benefit from education in a culturally sensitive manner that draws upon, utilizes, promotes and enhances awareness of indigenous traditions.[2]

For indigenous students or learners, and teachers or instructors, the inclusion of these methods often enhances educational effectiveness, success and learning outcomes by providing education that adheres to their own inherent perspectives, experiences and worldview. For non-indigenous students and teachers, education using such methods often has the effect of raising awareness of the individual traditions and collective experience of surrounding indigenous communities and peoples, thereby promoting greater respect for and appreciation of the cultural realities of these communities and peoples.

In terms of educational content, the inclusion of indigenous knowledge, traditions, perspectives, worldviews and conceptions within curricula, instructional materials

and textbooks and coursebooks have largely the same effects as the inclusion of indigenous methods in education. Indigenous students and teachers benefit from enhanced academic effectiveness, success and learning outcomes, while non-indigenous students/learners and teachers often have greater awareness, respect, and appreciation for indigenous communities and peoples in consequence of the content that is shared during the course of educational pursuits.[3]

A prime example of how indigenous methods and content can be used to promote the above outcomes is demonstrated within higher education in Canada. Due to certain jurisdictions' focus on enhancing academic success for Aboriginal learners and promoting the values of multiculturalism in society, the inclusion of indigenous methods and content in education is often seen as an important obligation and duty of both governmental and educational authorities.[4]

Process

Curriculum

An academic discipline is a branch of knowledge which is formally taught, either at the university, or via some other such method. Each discipline usually has several sub-disciplines or branches, and distinguishing lines are often both arbitrary and ambiguous. Examples of broad areas of academic disciplines include the natural sciences, mathematics, computer science, social sciences, humanities and applied sciences.[5]

Learning modalities

There has been work on learning styles over the last two decades. Dunn and Dunn[6] focused on identifying relevant stimuli that may influence learning and manipulating the school environment, at about the same time as Joseph Renzulli[7] recommended varying teaching strategies. Howard Gardner[8] identified individual talents or aptitudes in his Multiple Intelligences theories. Based on the works of Jung, the Myers-Briggs Type Indicator and Keirsey Temperament Sorter[9] focused on understanding how people's personality affects the way they interact personally, and how this affects the way individuals respond to each other within the learning environment. The work of David Kolb and Anthony Gregorc's Type Delineator[10] follows a similar but more simplified approach.

It is currently fashionable to divide education into different learning "modes". The learning modalities[11] are probably the most common:[12]

- Visual: learning based on observation and seeing what is being learned.
- Auditory: learning based on listening to instructions/information.
- Kinesthetic: learning based on hands-on work and engaging in activities.

It is claimed that, depending on their preferred learning modality, different teaching techniques have different levels of effectiveness.[13] A consequence of this theory is that effective teaching should present a variety of teaching methods which cover all three learning modalities so that different students have equal opportunities to learn

in a way that is effective for them.[14] Guy Claxton has questioned the extent that learning styles such as VAK are helpful, particularly as they can have a tendency to label children and therefore restrict learning.[15]

Teaching

Teachers need to understand a subject enough to convey its essence to students. The goal is to establish a sound knowledge base on which students will be able to build as they are exposed to different life experiences. Good teachers can translate information, good judgment, experience and wisdom into relevant knowledge that a student can understand, retain and pass to others. Studies from the US suggest that the quality of teachers is the single most important factor affecting student performance, and that countries which score highly on international tests have multiple policies in place to ensure that the teachers they employ are as effective as possible. [16]

Technology

Technology is an increasingly influential factor in education. Computers and mobile phones are used in developed countries both to complement established education practices and develop new ways of learning such as online education (a type of distance education). This gives students the opportunity to choose what they are interested in learning. The proliferation of computers also means the increase of programming and blogging. Technology offers powerful learning tools that demand new skills and understandings of students, including Multimedia, and provides new ways to engage students, such as Virtual learning environments. Technology is being used more not only in administrative duties in education but also in the instruction of students. The use of technologies such as PowerPoint and interactive whiteboard is capturing the attention of students in the classroom. Technology is also being used in the assessment of students. One example is the Audience Response System (ARS), which allows immediate feedback tests and classroom discussions.

Information and communication technologies (ICTs) are a “diverse set of tools and resources used to communicate, create, disseminate, store, and manage information.”[17] These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. There is increasing interest in how computers and the Internet can improve education at all levels, in both formal and non-formal settings.[18] Older ICT technologies, such as radio and television, have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries. The use of computers and the Internet is in its infancy in developing countries, if these are used at all, due to limited infrastructure and the attendant high costs of access. Usually, various technologies are used in combination rather than as the sole delivery mechanism. For example, the Kothmale Community Radio Internet uses both radio broadcasts and computer and Internet technologies to facilitate the sharing of information and provide educational opportunities in a rural community in Sri Lanka. The Open University of the United Kingdom (UKOU), established in 1969 as the first educational institution in the world wholly dedicated to open and distance learning, still relies heavily on

print-based materials supplemented by radio, television and, in recent years, online programming. Similarly, the Indira Gandhi National Open University in India combines the use of print, recorded audio and video, broadcast radio and television, and audio conferencing technologies. The term "computer-assisted learning" (CAL) has been increasingly used to describe the use of technology in teaching.

Educational theory

Education theory is the theory of the purpose, application and interpretation of education and learning. Its history begins with classical Greek educationalists and sophists and includes, since the 18th century, pedagogy and andragogy. In the 20th century, "theory" has become an umbrella term for a variety of scholarly approaches to teaching, assessment and education law, most of which are informed by various academic fields, which can be seen in the below sections.

Economics

It has been argued that high rates of education are essential for countries to be able to achieve high levels of economic growth.[23] Empirical analyses tend to support the theoretical prediction that poor countries should grow faster than rich countries because they can adopt cutting edge technologies already tried and tested by rich countries. However, technology transfer requires knowledgeable managers and engineers who are able to operate new machines or production practices borrowed from the leader in order to close the gap through imitation. Therefore, a country's ability to learn from the leader is a function of its stock of "human capital." Recent study of the determinants of aggregate economic growth have stressed the importance of fundamental economic institutions and the role of cognitive skills.

At the individual level, there is a large literature, generally related back to the work of Jacob Mincer, on how earnings are related to the schooling and other human capital of the individual. This work has motivated a large number of studies, but is also controversial. The chief controversies revolve around how to interpret the impact of schooling.

Economists Samuel Bowles and Herbert Ginits famously argued in 1976 that there was a fundamental conflict in American schooling between the egalitarian goal of democratic participation and the inequalities implied by the continued profitability of capitalist production on the other.

Philosophy

Philosophy of education is the philosophical study of the purpose, process, nature and ideals of education. Philosophy of education can naturally be considered a branch of both philosophy and education. Philosophy of education is commonly housed in colleges and departments of education, yet it is applied philosophy, drawing from the traditional fields of philosophy (ontology, ethics, epistemology, etc.) and approaches (speculative, prescriptive, and/or analytic) to address questions regarding education policy, human development, education research methodology, and curriculum theory, to name a few.

Psychology

Educational psychology is the study of how humans learn in educational settings, the effectiveness of educational interventions, the psychology of teaching, and the social psychology of schools as organizations. Although the terms "educational psychology" and "school psychology" are often used interchangeably, researchers and theorists are likely to be identified as educational psychologists, whereas practitioners in schools or school-related settings are identified as school psychologists. Educational psychology is concerned with the processes of educational attainment in the general population and in sub-populations such as gifted children and those with specific disabilities.

Educational psychology can in part be understood through its relationship with other disciplines. It is informed primarily by psychology, bearing a relationship to that discipline analogous to the relationship between medicine and biology. Educational psychology in turn informs a wide range of specialities within educational studies, including instructional design, educational technology, curriculum development, organizational learning, special education and classroom management. Educational psychology both draws from and contributes to cognitive science and the learning sciences. In universities, departments of educational psychology are usually housed within faculties of education, possibly accounting for the lack of representation of educational psychology content in introductory psychology textbooks (Lucas, Blazek, & Raley, 2006).

Sociology

The sociology of education is the study of how social institutions and forces affect educational processes and outcomes, and vice versa. By many, education is understood to be a means of overcoming handicaps, achieving greater equality and acquiring wealth and status for all (Sargent 1994). Learners may be motivated by aspirations for progress and betterment. Education is perceived as a place where children can develop according to their unique needs and potentialities. The purpose of education can be to develop every individual to their full potential. The understanding of the goals and means of educational socialization processes differs according to the sociological paradigm used.

Educational Development

In some developing countries, the number and seriousness of the problems faced are naturally greater. People in more remote or agrarian areas are sometimes unaware of the importance of education. However, many countries have an active Ministry of Education, and in many subjects, such as foreign language learning, the degree of education is actually much higher than in industrialized countries; for example, it is not at all uncommon for students in many developing countries to be reasonably fluent in multiple foreign languages, whereas this is much more of a rarity in the supposedly "more educated" countries where much of the population is in fact monolingual.

There is also economic pressure from those parents who prefer their children making money in the short term over any long-term benefits of education. Recent studies on child labor and poverty have suggested that when poor families reach a certain economic threshold where families are able to provide for their basic needs, parents return their children to school. This has been found to be true, once the threshold has been breached, even if the potential economic value of the children's work has increased since their return to school.

A lack of good universities, and a low acceptance rate for good universities, is evident in countries with a high population density. In some countries, there are uniform, over structured, inflexible centralized programs from a central agency that regulates all aspects of education.

- Due to globalization, increased pressure on students in curricular activities
- Removal of a certain percentage of students for improvisation of academics (usually practised in schools, after 10th grade)

India is now developing technologies that will skip land based phone and internet lines. Instead, India launched EDUSAT, an education satellite that can reach more of the country at a greatly reduced cost. There is also an initiative started by the OLPC foundation, a group out of MIT Media Lab and supported by several major corporations to develop a $100 laptop to deliver educational software. The laptops are widely available as of 2009. The laptops are sold at cost or given away based on donations. These will enable developing countries to give their children a digital education, and help close the digital divide across the world.

In Africa, NEPAD has launched an "e-school programme" to provide all 600,000 primary and high schools with computer equipment, learning materials and internet access within 10 years. Private groups, like The Church of Jesus Christ of Latter-day Saints, are working to give more individuals opportunities to receive education in developing countries through such programs as the Perpetual Education Fund. An International Development Agency project called nabuur.com, started with the support of American President Bill Clinton, uses the Internet to allow co-operation by individuals on issues of social development.

Internationalisation

Education is becoming increasingly international. Not only are the materials becoming more influenced by the rich international environment, but exchanges among students at all levels are also playing an increasingly important role. In Europe, for example, the Socrates-Erasmus Programme stimulates exchanges across European universities. Also, the Soros Foundation provides many opportunities for students from central Asia and eastern Europe. Some scholars argue that, regardless of whether one system is considered better or worse than another, experiencing a different way of education can often be considered to be the most important, enriching element of an international learning experience.

Religion and Education

In Islam education is very important for both males and females[], particularly young children. Contrary to common perception, the seeking of all types of knowledge - be it academic, vocational, religious or secular - is encouraged at all ages. However, learning at an early age is thought to allow the mind to concentrate without the stresses and responsibilities of later adult life.

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Course Name : Organizational Theory and Management

Course description

The Course deals with organizational theories of management, details with motivation aspects of employees in organizational settings, rational planning model, personality theories, organizational structure, organizational culture, as well as organizational development and its interventions.

Course objectives

- To build the students capacity in becoming motivated employees at their work places after school.
- To educate students with the various issues that may affect the organizational development.
- To provide skills of understanding organizational structures& culture on performance management.
- To transfer basic knowledge of management to students.

Course content

Introduction

- Definition of organizational theory
- History of organizational management
- Specific contribution of different scholars to organizational development
- Methods used in organizational studies

Theories and models of Organizational Management

- Scientific Management
- Rational decision making Model
- Mintzberg's managerial roles

Motivation in Organizations

There are many different motivation theories that include

Attribution theory
Equity theory
Maslow's hierarchy of needs
Incentive theory
Model of emotional labor in organizations
Frederick Hertzberg two-factor theory
Their criticisms and relevance to organizational performance

Rational planning model

- Definition of the model
- Method of verifying the problem
- Its requirements and limitations
- The bounded rational decision making model: a realistic approach
- Assumptions of the bounded rational decision making model

Personality traits theories

- The Big five personality traits these include; Openness, conscientiousness, extraversion, agreeableness, neuroticism.
- Implications of the theories to the organizational development, management & performance.

- Criticisms of the theories.

Organizational structure

- Definition of organizational structure
- Common success criteria for organizational structures
- Forms of Organizational structures

Organizational Development (OD)

- Definition of organizational development
- Overview of organizational development
- Different concepts used in OD
- OD interventions

Organizational Culture

- Definition of organizational culture
- Types of organizational cultures
- Elements used to describe organizational culture
- Organizational communication perspective on culture

Mode of delivery
Face to face lectures
Personal studies
Online

Assessment
Coursework 40%
Exams 60%
Total Mark 100%

Organizational studies, **organizational behavior**, and **organizational theory** is the systematic study and careful application of knowledge about how people - as individuals and as groups - act within organizations. Organizational Behaviour studies encompasses the study of organizations from multiple viewpoints, methods, and levels of analysis. For instance, one divides these multiple viewpoints into three perspectives: modern, symbolic, and postmodern. Another traditional distinction, present especially in American academia, is between the study of "micro" organizational behavior -- which refers to individual and group dynamics in an organizational setting -- and "macro" organizational theory which studies whole organizations, how they adapt, and the strategies and structures that guide them. To this distinction, some scholars have added an interest in "meso" -- primarily interested in power, culture, and the networks of individuals and units in organizations -- and "field" level analysis which study how whole populations of organizations interact. In Europe these distinctions do exist as well, but are more rarely reflected in departmental divisions.

Whenever people interact in organizations, many factors come into play. Modern organizational studies attempt to understand and model these factors. Like all modernist social sciences, organizational studies seek to control, predict, and explain. There is some controversy over the ethics of controlling workers' behavior. As such, organizational behavior or OB (and its cousin, Industrial psychology) have

at times been accused of being the scientific tool of the powerful] Those accusations notwithstanding, OB can play a major role in organizational development and success.

One of the main goal of organizational theorists is, according ot Simms (1994) is "to revitalize organizational theory and develop a better conceptualization of organizational life."An organizational theorist should carefully consider levels assumptions being made in theory, and is concerned to help managers and administrators.

History

The Greek philosopher Plato wrote about the essence of leadership. Aristotle addressed the topic of persuasive communication. The writings of 16th century Italian philosopher Niccolò Machiavelli laid the foundation for contemporary work on organizational power and politics. In 1776, Adam Smith advocated a new form of organizational structure based on the division of labour. One hundred years later, German sociologist Max Weber wrote about rational organizations and initiated discussion of charismatic leadership. Soon after, Frederick Winslow Taylor introduced the systematic use of goal setting and rewards to motivate employees. In the 1920s, Australian-born Harvard professor Elton Mayo and his colleagues conducted productivity studies at Western Electric's Hawthorne plant in the United States.

Though it traces its roots back to Max Weber and earlier, organizational studies is generally considered to have begun as an academic discipline with the advent of scientific management in the 1890s, with Taylorism representing the peak of this movement. Proponents of scientific management held that rationalizing the organization with precise sets of instructions and time-motion studies would lead to increased productivity. Studies of different compensation systems were carried out.

After the First World War, the focus of organizational studies shifted to analysis of how human factors and psychology affected organizations, a transformation propelled by the identification of the Hawthorne Effect. This Human Relations Movement focused on teams, motivation, and the actualization of the goals of individuals within organizations.

Prominent early scholars included Chester Barnard, Henri Fayol, Frederick Herzberg, Abraham Maslow, David McClelland, and Victor Vroom.

The Second World War further shifted the field, as the invention of large-scale logistics and operations research led to a renewed interest in rationalist approaches to the study of organizations. Interest grew in theory and methods native to the sciences, including systems theory, the study of organizations with a complexity theory perspective and complexity strategy. Influential work was done by Herbert Alexander Simon and James G. March and the so-called "Carnegie School" of organizational behavior.

In the 1960s and 1970s, the field was strongly influenced by social psychology and the emphasis in academic study was on quantitative research. An explosion of theorizing, much of it at Stanford University and Carnegie Mellon, produced Bounded Rationality, Informal Organization, Contingency Theory, Resource Dependence, Institutional Theory, and Organizational Ecology theories, among many others.

Starting in the 1980s, cultural explanations of organizations and change became an important part of study. Qualitative methods of study became more acceptable, informed by anthropology, psychology and sociology. A leading scholar was Karl Weick.

Specific Contributions

Frederick Winslow Taylor

Frederick Winslow Taylor (1856-1915) was the first person who attempted to study human behavior at work using a systematic approach. Taylor studied human characteristics, social environment, task, physical environment, capacity, speed, durability, cost and their interaction with each other. His overall objective was to reduce and/or remove human variability. Taylor worked to achieve his goal of making work behaviors stable and predictable so that maximum output could be achieved. He relied strongly upon monetary incentive systems, believing that humans are primarily motivated by money. He faced some strong criticism, including being accused of telling managers to treat workers as machines without minds, but his work was very productive and laid many foundation principles for modern management studies. An enlightening book about the life of Frederick Winslow Taylor and his studies is that by Kanigel (1997).

Elton Mayo

Elton Mayo, an Australian national, headed the Hawthorne Studies at Harvard. In his classic writing in 1931, Human Problems of an Industrial Civilization, he advised managers to deal with emotional needs of employees at work.

Mary Parker Follett

Mary Parker Follett was a pioneer management consultant in the industrial world. As a writer, she provided analyses on workers as having complex combinations of attitude, beliefs, and needs. She told managers to motivate employees on their job performance, a "pull" rather than a "push" strategy.

Douglas McGregor

Douglas McGregor proposed two theories/assumptions, which are very nearly the opposite of each other, about human nature based on his experience as a management consultant. His first theory was “Theory X”, which is pessimistic and negative; and according to McGregor it is how managers traditionally perceive their workers. Then, in order to help managers replace that theory/assumption, he gave

“Theory Y” which takes a more modern and positive approach. He believed that managers could achieve more if they start perceiving their employees as self-energized, committed, responsible and creative beings. By means of his Theory Y, he in fact challenged the traditional theorists to adopt a developmental approach to their employees. He also wrote a book, The Human Side of Enterprise, in 1960; this book has become a foundation for the modern view of employees at work.

Current state of the field

Organizational behaviour is currently a growing field. Organizational studies departments generally form part of business schools, although many universities also have industrial psychology and industrial economics programs.

The field is highly influential in the business world with practitioners like Peter Drucker and Peter Senge, who turned the academic research into business practices. Organizational behaviour is becoming more important in the global economy as people with diverse backgrounds and cultural values have to work together effectively and efficiently. It is also under increasing criticism as a field for its ethnocentric and pro-capitalist assumptions (see Critical Management Studies).

During the last 20 years organizational behavior study and practice has developed and expanded through creating integrations with other domains:

- Anthropology became an interesting prism to understanding firms as communities, by introducing concepts like Organizational culture, 'organizational rituals' and 'symbolic acts' enabling new ways to understand organizations as communities.
- Leadership Understanding: the crucial role of leadership at various level of an organization in the process of change management.
- Ethics and their importance as pillars of any vision and one of the most important driving forces in an organization.

Methods used in organizational studies

A variety of methods are used in organizational studies. They include quantitative methods found in other social sciences such as multiple regression, non-parametric statistics, time dependent analysis, and ANOVA. In addition, computer simulation in organizational studies has a long history in organizational studies. Qualitative methods are also used, such as ethnography, which involves direct participant observation, single and multiple case analysis, and other historical methods. In the last fifteen years or so, there has been greater focus on language, metaphors, and organizational storytelling.

Kurt Lewin attended the Macy conferences and is commonly identified as the founder of the movement to study groups scientifically.

The systems framework is also fundamental to organizational theory as organizations are complex dynamic goal-oriented processes. One of the early thinkers in the field was Alexander Bogdanov, who developed his Tectology, a theory widely considered a precursor of Bertalanffy's General Systems Theory, aiming to model and design human organizations. Kurt Lewin was particularly influential in developing the systems perspective within organizational theory and coined the term "systems of ideology", from his frustration with behavioural psychologies that became an obstacle to sustainable work in psychology (see Ash 1992: 198-207). The complexity theory perspective on organizations is another systems view of organizations.

The systems approach to organizations relies heavily upon achieving negative entropy through openness and feedback. A systemic view on organizations is transdisciplinary and integrative. In other words, it transcends the perspectives of individual disciplines, integrating them on the basis of a common "code", or more exactly, on the basis of the formal apparatus provided by systems theory. The systems approach gives primacy to the interrelationships, not to the elements of the system. It is from these dynamic interrelationships that new properties of the system emerge. In recent years, *systems thinking* has been developed to provide techniques for studying systems in holistic ways to supplement traditional reductionistic methods. In this more recent tradition, systems theory in organizational studies is considered by some as a humanistic extension of the natural sciences.

Topic 2;Theories and models of organizational studies

Decision making

- Mintzberg's managerial roles
- Rational Decision-Making Model
- **Scientific management**

Organization structures and dynamics

- Bureaucracy
- Complexity theory and organizations
- Contingency theory
- Hybrid organisation
- Informal Organization

Personality traits theories

- Big Five personality traits
- Holland's Typology of Personality and Congruent Occupations
- Myers-Briggs Type Indicator

Control and stress modelling

- Herzberg's Two factor theory
- Theory X and Theory Y

Motivation in organizations

Motivation the forces either internal or external to a person that arouse enthusiasm and resistance to pursue a certain course of action. According to Baron et al. (2008): "Although motivation is a broad and complex concept, organizational scientists have agreed on its basic characteristics. Drawing from various social sciences, we define motivation as the set of processes that arouse, direct, and maintain human behavior toward attaining some goal"

There are many different motivation theories such as:

- Attribution theory
- Equity theory
- Maslow's hierarchy of needs
- Incentive theory (psychology)
- Model of emotional labor in organizations
- Frederick Herzbergtwo-factor theory

Theories and models of organizational studies

Topic 2 b; Frederick Winslow Taylor

To improve industrial efficiency. He is regarded as the father of scientific management, and was one of the first management consultants.[1]

Taylor was one of the intellectual leaders of the Efficiency Movement and his ideas, broadly conceived, were highly influential in the Progressive Era.

Scientific management

Taylor believed that the industrial management of his day was amateurish, that management could be formulated as an academic discipline, and that the best results would come from the partnership between a trained and qualified management and a cooperative and innovative workforce. Each side needed the other, and there was no need for trade unions.

Future U.S. Supreme Court justice Louis Brandeis coined the term *scientific management* in the course of his argument for the Eastern Rate Case before the Interstate Commerce Commission in 1910. Brandeis debated that railroads, when governed according to the principles of Taylor, did not need to raise rates to increase wages. Taylor used Brandeis's term in the title of his monograph *The Principles of Scientific Management,* published in 1911. The Eastern Rate Case propelled Taylor's ideas to the forefront of the management agenda. Taylor wrote to Brandeis "I have rarely seen a new movement started with such great momentum as you have given this one." Taylor's approach is also often referred to, as *Taylor's Principles*, or frequently disparagingly, as *Taylorism*. Taylor's scientific management consisted of four principles:

1. Replace rule-of-thumb work methods with methods based on a scientific study of the tasks.
2. Scientifically select, train, and develop each employee rather than passively leaving them to train themselves.
3. Provide "Detailed instruction and supervision of each worker in the performance of that worker's discrete task" (Montgomery 1997: 250).
4. Divide work nearly equally between managers and workers, so that the managers apply scientific management principles to planning the work and the workers actually perform the tasks.

Managers and workers

Taylor had very precise ideas about how to introduce his system:

It is only through *enforced* standardization of methods, *enforced* adoption of the best implements and working conditions, and *enforced* cooperation that this faster work can be assured. And the duty of enforcing the adoption of standards and enforcing this cooperation rests with *management* alone.

Workers were supposed to be incapable of understanding what they were doing. According to Taylor this was true even for rather simple tasks.

'I can say, without the slightest hesitation,' Taylor told a congressional committee, 'that the science of handling pig-iron is so great that the man who is ... physically able to handle pig-iron and is sufficiently phlegmatic and stupid to choose this for his occupation is rarely able to comprehend the science of handling pig-iron.

The introduction of his system was often resented by workers and provoked numerous strikes. The strike at Watertown Arsenal led to the congressional investigation in 1912. Taylor believed the labourer was worthy of his hire, and pay was linked to productivity. His workers were able to earn substantially more than those in similar industries and this earned him enemies among the owners of factories where scientific management was not in use.

Propaganda techniques

Taylor promised to reconcile labor and capital.

With the triumph of scientific management, unions would have nothing left to do, and they would have been cleansed of their most evil feature: the restriction of output. To underscore this idea, Taylor fashioned the myth that 'there has never been a strike of men working under scientific management', trying to give it credibility by constant repetition. In similar fashion he incessantly linked his proposals to shorter hours of work, without bothering to produce evidence of "Taylorized" firms that reduced working hours, and he revised his famous tale of Schmidt carrying pig iron at Bethlehem Steel at least three times, obscuring some aspects of his study and stressing others, so that each successive version made Schmidt's exertions more impressive, more voluntary and more rewarding to him than the last. Unlike [Harrington] Emerson, Taylor was not a charlatan, but his

ideological message required the suppression of all evidence of worker's dissent, of coercion, or of any human motives or aspirations other than those his vision of progress could encompass.

Management theory

Taylor thought that by analyzing work, the "One Best Way" to do it would be found. He is most remembered for developing the time and motion study. He would break a job into its component parts and measure each to the hundredth of a minute. One of his most famous studies involved shovels. He noticed that workers used the same shovel for all materials. He determined that the most effective load was 21½ lb, and found or designed shovels that for each material would scoop up that amount. He was generally unsuccessful in getting his concepts applied and was dismissed from Bethlehem Steel. It was largely through the efforts of his disciples (most notably H.L. Gantt) that industry came to implement his ideas. Nevertheless, the book he wrote after parting company with Bethlehem Steel, *Shop Management*, sold well.

Relations with ASME

Taylor was president of the American Society of Mechanical Engineers (ASME) from 1906 to 1907. While president, he tried to implement his system into the management of the ASME but was met with much resistance. He was only able to reorganize the publications department and then only partially. He also forced out the ASME's long-time secretary, Morris L. Cooke, and replaced him with Calvin W. Rice. His tenure as president was trouble-ridden and marked the beginning of a period of internal dissension within the ASME during the Progressive Age.

In 1912, Taylor collected a number of his articles into a book-length manuscript which he submitted to the ASME for publication. The ASME formed an ad hoc committee to review the text. The committee included Taylor allies such as James Mapes Dodge and Henry R. Towne. The committee delegated the report to the editor of the *American Machinist*, Leon P. Alford. Alford was a critic of the Taylor system and the report was negative. The committee modified the report slightly, but accepted Alford's recommendation not to publish Taylor's book. Taylor angrily withdrew the book and published *Principles* without ASME approval.

Criticism of Taylor

Management theorist Henry Mintzberg is highly critical of Taylor’s methods. Mintzberg states that an obsession with efficiency allows measureable benefits to overshadow less quantifiable social benefits completely, and social values get left behind

Topic 2 c;Henry Mintzberg

Professor**Henry Mintzberg**, OC, OQ, FRSC (born in Montreal, September 2, 1939) is an internationally renowned academic and author on business and management. He is currently the Cleghorn Professor of Management Studies at the Desautels Faculty of Management of McGill University in Montreal, Quebec, Canada, where he has

been teaching since 1968, after earning his Master's degree in Management and Ph.D. from the MIT Sloan School of Management in 1965 and 1968 respectively.[1] His undergraduate degree in mechanical engineering was from McGill University. From 1991 to 1999, he was a visiting professor at INSEAD.

Henry Mintzberg writes prolifically on the topics of management and business strategy, with more than 150 articles and fifteen books to his name. His seminal book, *The Rise and Fall of Strategic Planning* (Mintzberg 1994), criticizes some of the practices of strategic planning today.

He recently published a book entitled *Managers Not MBAs* (Mintzberg 2004) which outlines what he believes to be wrong with management education today. Rather controversially, Mintzberg claims that prestigious graduate management schools like Harvard Business School and the Wharton Business School at the University of Pennsylvania are obsessed with numbers and that their overzealous attempts to make management a science are damaging the discipline of management. Mintzberg advocates more emphasis on post graduate programs that educate practicing managers (rather than students with little real world experience) by relying upon action learning and insights from their own problems and experiences. (See http://www.impm.org/ and http://www.CoachingOurselves.com/)

Ironically, although Professor Mintzberg is quite critical about the strategy consulting business, he has twice won the McKinsey Award for publishing the best article in the Harvard Business Review. Also, he is credited with co-creating the organigraph, which is taught in business schools.[2]

In 1997 he was made an Officer of the Order of Canada. In 1998 he was made an Officer of the National Order of Quebec. He is now a member of the Strategic Management Society.

MIntzberg runs two programs which have been designed to teach his alternative approach to management and strategic planning at McGill University: the International Masters in Practicing Management (I.M.P.M.) in association with the McGill Executive Institute and the International Masters for Health Leadership (I.M.H.L.). With Phil LeNir, he owns CoachingOurselves International, a private company using his alternative approach for management development directly in the workplace.

He is married to Sasha Sadilova and has two children from a previous marriage, Susie and Lisa.

Theory on Organizational Forms

The organizational configurations framework of Mintzberg is a model that describes six valid organizational configurations

1. **Mutual adjustment**,which achieves coordination by the simple process of informal communication (as between two operating employees)

2. **Direct supervision**, is achieved by having one person issue orders or instructions to several others whose work interrelates (as when a boss tells others what is to be done, one step at a time)
3. **Standardization of work processes**, which achieves coordination by specifying the work processes of people carrying out interrelated tasks (those standards usually being developed in the technostructure to be carried out in the operating core, as in the case of the work instructions that come out of time-and-motion studies)
4. **Standardization of outputs**, which achieves coordination by specifying the results of different work (again usually developed in the technostructure, as in a financial plan that specifies subunit performance targets or specifications that outline the dimensions of a product to be produced)
5. **Standardization of skills** (as well as knowledge), in which different work is coordinated by virtue of the related training the workers have received (as in medical specialists - say a surgeon and an anesthetist in an operating room – responding almost automatically to each other's standardized procedures)
6. **Standardization of norms**, in which it is the norms infusing the work that are controlled, usually for the entire organization, so that everyone functions according to the same set of beliefs (as in a religious order)

According to the organizational configurations model of Mintzberg each organization can consist of a maximum of six basic parts:

1. Strategic Apex (top management)
2. Middle Line (middle management)
3. Operating Core (operations, operational processes)
4. Techno structure (analysts that design systems, processes, etc)
5. Support Staff (support outside of operating workflow)
6. Ideology (halo of beliefs and traditions; norms, values, culture)

Topic 3.Rational planning model

The **rational planning model** is the process of realizing a problem, establishing and evaluating planning criteria, create alternatives, implementing alternatives, and monitoring progress of the alternatives. It is used in designing neighborhoods, cities, and regions. The rational planning model is central in the development of modern urban planning and transportation planning. The very similar **rational decision-making model**, as it is called in organizational behavior is a process for making logically sound decisions. This multi-step model and aims to be logical and follow the orderly path from problem identification through solution.

Method

Rational decision-making or planning follows a series of steps detailed below:

Verify, Define, and Detail the problem

Verifying, defining & detailing the problem (problem definition, goal definition, information gathering). This step includes recognizing the problem, defining an initial solution, and starting primary analysis. Examples of this are creative devising, creative ideas, inspirations, breakthroughs, and brainstorms. The very first step which is normally overlooked by the top level management is defining the exact problem. Though we think that the problem identification is obvious, many times it is not. The rational decision making model is a group-based decision making process. If the problem is not identified properly then we may face a problem as each and every member of the group might have a different definition of the problem. Hence, it is very important that the definition of the problem is the same among all group members. Only then is it possible for the group members to find alternate sources or problem solving in an effective manner.

Generate all possible solutions

This step encloses two to three final solutions to the problem and preliminary implementation to the site. In planning, examples of this are Planned Units of Development and downtown revitalizations.

This activity is best done in groups, as different people may contribute different ideas or alternative solutions to the problem. If you are not able to generate alternative solutions, there is a chance that you might not arrive at an optimal or a rational decision. For exploring the alternatives it is necessary to gather information. Technology may help with gathering this information.

Generate objective assessment criteria

Evaluative criteria are measurements to determine success and failure of alternatives. This step contains secondary and final analysis along with secondary solutions to the problem. Examples of this are site suitability and site sensitivity analysis. After going thoroughly through the process of defining the problem, exploring for all the possible alternatives for that problem and gathering information this step says evaluate the information and the possible options to anticipate the consequences of each and every possible alternative that is thought of. At this point of time we have to also think over for optional criteria on which we will measure the success or failure of our decision taken.

Choose the best solution which we have already generated

This step comprises a final solution and secondary implementation to the site. At this point the process has developed into different strategies of how to apply the solutions to the site. Based on the criteria of assessment and the analysis done in previous steps, choose the best solution which we have generated. Once we go through the above steps thoroughly, implementing the fourth step is easy job. These four steps form the core of the Rational Decision Making Model.

Implementing the preferred alternative

This step includes final implementation to the site and preliminary monitoring of the outcome and results of the site. This step is the building/renovations part of the process.

Monitoring and evaluating outcomes and results

This step contains the secondary and final monitoring of the outcomes and results of the site. This step takes place over a long period of time.

Feedback

Modify the decisions and actions taken based on the evaluation.

Requirements and limitations

However, there are a lot of assumptions, requirements without which the rational decision model is a failure. Therefore, they all have to be considered. The model assumes that we have or should or can obtain adequate information, both in terms of quality, quantity and accuracy. This applies to the situation as well as the alternative technical situations. It further assumes that you have or should or can obtain substantive knowledge of the cause and effect relationships relevant to the evaluation of the alternatives. In other words, it assumes that you have a thorough knowledge of all the alternatives and the consequences of the alternatives chosen. It further assumes that you can rank the alternatives and choose the best of it. The following are the limitations for the Rational Decision Making Model:

- It requires a great deal of time.
- It requires great deal of information
- It assumes rational, measurable criteria are available and agreed upon.
- It assumes accurate, stable and complete knowledge of all the alternatives, preferences, goals and consequences.
- It assumes a rational, reasonable, non – political world.

The Bounded Rational Decision Making Model: a realistic approach

The Rational Decision Making Model, amongst its many assumptions assumes that there is a single, best solution that will maximize the desired outcomes.

Now, the bounded rationality model says that the problems and the decisions are to be reduced to such a level that they will be understood. In other words, the model suggests that we should interpret information and extract essential features and then within these boundaries we take a rational decision.

The model turns towards compromising on the decision making process though it is a structured decision making model. The decision maker takes the decision or is assumed to choose a solution though not a perfect solution but “good enough” solution based on the limited capacity of the group leader to handle the complexity of

the situation, ambiguity and information. The steps involved in the decision making are alike to the rational decision making process the model assumes that the perfect knowledge about all the alternatives are not possible for a human being to know. Hence, based on the limited knowledge he takes a good enough knowledge though not a perfect decision.

To cut the long story short we can say that the decision that is taken is rational but is taken in a bounded area and the choice of alternatives is though not perfect is nearer to the perfect decision. In rational process the assumption is that the exact problem, all the alternatives, should be thoroughly known to the decision maker. However, the realistic approach of human limitation is overlooked in rational decision making, but the same approach is considered mainly in the bounded rational decision making process.

Hence, it is also called as a Realistic Approach for Rational Decision Making Process.

Assumptions of the model

The rational decision making model contains a number of assumptions.

- Problem clarity: The problem is clear and unambiguous.The decision maker is assumed to have complete information regarding situation.
- Known options: It is assumed the decision maker can identify all the relevant criteria and can list all the viable alternatives. Furthermore, the decision maker is aware of all possible consequences of each alternative.
- Clear preferences: Rationality assumes that the criteria and alternatives can be ranked and weighted to reflect their importance.
- Constant preferences: It's assumed that the specific decision criteria are constant and that the weights assigned to them are stable over time.
- No time or cost constraints: The rational decision maker can obtain full information about criteria and alternatives because it's assumed that there are no time or cost constraints.
- Maximum payoff:The rational decision maker will choose the alternative that yields the highest perceived value.

Three concepts of rational planning

John Friedmann describes the three concepts of rationality that have informed planning as:

Market rationality

Market rationality is described as being grounded in metaphysics of possessive individualism and which predicates the individual as existing prior to society. Society then becomes the mechanism that enables individuals to pursue their private interests. This prior-to status gives market rationally a quasi-natural character, and ranks it as being beyond human intention, thereby making its assumptions unavoidably compelling. From this perspective, reason is the means toward the maximization of private satisfactions.

Social rationality

Social rationality is the opposite assumption, that the social group grants the individual their identity through membership in the group. Reason becomes the tool of the collective interest and functions as the avenue toward communal satisfactions.

Methodology

The three types of rationality that Friedman describes as structuring modern rational planning model are united on their reliance upon the methodology of empirical scientific investigation.

The distinctions that Friedmann makes allows the rational planning model to be used as a tool of social speech that creates it own processes according to the uses to which it is put. The rational planning model acts as a mediator between market and social rationality, and exists between different criteria of what is fundamentally rational.

The rational planning model has its origins in the scientific and philosophic revolutions of the 16th and 17th centuries, and in the social revolutions of the Enlightenment which gave public form to urban planning fundamentals and rational worldviews. The profession of modern urban planning is not based on the rational planning model; it identifies what planners have come to identify as rational and have come to an understanding of how the rational planning model affects an urban planner's decisions. The modern style of urban planning is essentially the rational planning model in its ideological framework.

The rational planning model has also been called the classical rational problem solving process, the rational comprehensive method, the "policy analysis strand of conservative forms of societal guidance planning", and "the ruling or normal paradigm that governs the practice of modern planning." Although it has a myriad of names, it has a singular approach to problem solving. This approach is the systematic evaluation of alternative means toward a preferred goal. Once a goal has been selected, the prevailing assumption is that there are only certain correct ways of achieving it.

Current status

While the rational planning model was innovative at its conception, the concepts are controversial and questionable processes today. The rational planning model has fallen out of mass use as of the last decade.

Topic 4.Organisational structures and group dynamics

Complexity theory and organizations

Complexity theory has been used in the field of strategic management and organizational studies, sometimes called complexity strategy.

A way of modelling a Complex Adaptive System. A system with high adaptive capacity exerts complex adaptive behavior in a changing environment.

Complex adaptive systems (CAS) are contrasted with ordered and chaotic systems by the relationship that exists between the system and the agents which act within it. In an ordered system the level of constraint means that all agent behaviour is limited to the rules of the system. In a chaotic system the agents are unconstrained and susceptible to statistical and other analysis. In a CAS, the system and the agents co-evolve; the system lightly constrains agent behaviour, but the agents modify the system by their interaction with it.

CAS approaches to strategy seek to understand the nature of system constraints and agent interaction and generally takes an evolutionary or naturalistic approach to strategy.

Contingency theory

Contingency theory is a class of behavioural theory that claims that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation. Several contingency approaches were developed concurrently in the late 1960s.

They suggested that previous theories such as Weber's bureaucracy and Taylor's scientific management had failed because they neglected that management style and organizational structure were influenced by various aspects of the environment: the contingency factors. There could not be "one best way" for leadership or organization.

Historically, contingency theory has sought to formulate broad generalizations about the formal structures that are typically associated with or best fit the use of different technologies. The perspective originated with the work of Joan Woodward (1958), who argued that technologies directly determine differences in such organizational attributes as span of control, centralization of authority, and the formalization of rules and procedures.

Fred Fiedler's contingency model focused on individual leadership.

William Richard Scott describes contingency theory in the following manner: "The best way to organize depends on the nature of the environment to which the organization must relate". Other researchers including Paul Lawrence, Jay Lorsch, and James D. Thompson were complementing to this statement and were more interested in the impact of contingency factors on organizational structure. Their structural contingency theory was the dominant paradigm of organizational structural theories for most of the 1970s. A major empirical test was furnished by Johannes M Pennings who examined the interaction between environmental uncertainty, organization structure and various aspects of performance.

Hybrid organization

A **hybrid organization** is a body that operates in both the public sector and the private sector, simultaneously fulfilling public duties and developing commercial market activities. As a result the hybrid organization becomes a mixture of both a part of government and a commercial enterprise.

Examples include universities that provide consultancy services on a commercial basis, social housing providers that compete with commercial property developers, public schools that offer trainings for companies and hospitals that provide private medical check-ups.

Hybrid organizations have strong as well as weak points. The combination of public duties and commercial activities can have significant synergy effects. But there is also the risk of unfair competition and that market activities could oust public activities.

The hybrid organization is not only mix of public and private organization, it is a wider organizational concept based on postmodern perspective of organization theory. "Hybrid may occur either because designer deliberately mix forms in an attempt to blend the advantages of two or more different types or because the organization changing"

Personality traits theories

The big five personality traits

In contemporary psychology, the **"Big Five" factors** of personality are five broad domains or dimensions of personality which have been scientifically discovered to define human personality at the highest level of organization (Goldberg, 1993)These five over-arching domains have been found to contain and subsume more-or-less all known personality traits within their five domains and to represent the basic structure behind all personality traits. They have brought order to the often-bewildering array of specific lower-level personality concepts that are constantly being proposed by psychologists, which are often found to be overlapping and confusing. These five factors provide a rich conceptual framework for integrating all the research findings and theory in personality psychology. The big five traits are also referred to as the **"Five Factor Model"** or FFM (Costa & McCrae, 1992), and as the Global Factors of personality (Russell & Karol, 1994).

The Big Five model is considered to be one of the most comprehensive, empirical, data-driven research findings in the history of personality psychology. Identifying the

traits and structure of human personality has been one of the most fundamental goals in all of psychology. Over three or four decades of research, these five broad factors were gradually discovered and defined by several independent sets of researchers (Digman, 1990). These researchers began by studying all known personality traits and then factor-analyzing hundreds of measures of these traits (in self-report and questionnaire data, peer ratings, and objective measures from experimental settings) in order to find the basic, underlying factors of personality.

At least three sets of researchers have worked independently for decades on this problem and have identified generally the same Big Five factors: Goldberg at the Oregon Research Institute Cattell at the University of Illinois,and Costa and McCrae at the National Institutes of Healt These three sets of researchers used somewhat different methods in finding the five traits, and thus each set of five factors has somewhat different names and definitions. However, all three sets have been found to be highly inter-correlated and factor-analytically aligned.

It is important to note that these traits have been found to organize personality at the highest level, and so they are most helpful as a conceptual, organizing framework for regular, lower-level personality traits. However, because the Big Five traits are so broad and comprehensive, they are not nearly as powerful in predicting and explaining actual behavior as are the more numerous lower-level traits. Many studies have confirmed that in predicting actual behavior the more numerous facet or primary level traits are far more effective (e.g. Mershon & Gorsuch, 1988 Paunonon & Ashton, 2001)

The Big five factors are Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN, or CANOE if rearranged). The Neuroticism factor is sometimes referred to as Emotional Stability. Some disagreement remains about how to interpret the Openness factor, which is sometimes called "Intellect".[25] Each factor consists of a cluster of more specific traits that correlate together. For example, extraversion includes such related qualities as sociability, excitement seeking, impulsiveness, and positive emotions.

The Five Factor Model is a purely descriptive model of personality, but psychologists have developed a number of theories to account for the Big Five.

Overview

The Big Five factors and their constituent traits can be summarized as follows:

- **Openness** - appreciation for art, emotion, adventure, unusual ideas, curiosity, and variety of experience.
- **Conscientiousness** - a tendency to show self-discipline, act dutifully, and aim for achievement; planned rather than spontaneous behavior.
- **Extraversion** - energy, positive emotions, urgency, and the tendency to seek stimulation in the company of others.
- **Agreeableness** - a tendency to be compassionate and cooperative rather than suspicious and antagonistic towards others.

- **Neuroticism** - a tendency to experience unpleasant emotions easily, such as anger, anxiety, depression, or vulnerability; sometimes called emotional instability.

When scored for individual feedback, these traits are frequently presented as percentile scores. For example, a Conscientiousness rating in the 80th percentile indicates a relatively strong sense of responsibility and orderliness, whereas an Extraversion rating in the 5th percentile indicates an exceptional need for solitude and quiet.

Although these trait clusters are statistical aggregates, exceptions may exist on individual personality profiles. On average, people who register high in Openness are intellectually curious, open to emotion, interested in art, and willing to try new things. A particular individual, however, may have a high overall Openness score and be interested in learning and exploring new cultures. Yet he or she might have no great interest in art or poetry. Situational influences also exist, as even extraverts may occasionally need time away from people.

The most frequently used measures of the Big Five comprise either items that are self-descriptive sentence or, in the case of lexical measures, items that are single adjectives. Due to the length of sentence-based and some lexical measures, short forms have been developed and validated for use in applied research settings where questionnaire space and respondent time are limited, such as the 40-item balanced *International English Big-Five Mini-Markers*. or a very brief (10 item) measure of the big 5 domains

Openness to Experience

Openness is a general appreciation for art, emotion, adventure, unusual ideas, imagination, curiosity, and variety of experience. The trait distinguishes imaginative people from down-to-earth, conventional people. People who are open to experience are intellectually curious, appreciative of art, and sensitive to beauty. They tend to be, compared to closed people, more creative and more aware of their feelings. They are more likely to hold unconventional beliefs.

People with low scores on openness tend to have more conventional, traditional interests. They prefer the plain, straightforward, and obvious over the complex, ambiguous, and subtle. They may regard the arts and sciences with suspicion, regarding these endeavors as abstruse or of no practical use. Closed people prefer familiarity over novelty. They are conservative and resistant to change.

Sample Openness items

- I have a rich vocabulary.
- I have a vivid imagination.
- I have excellent ideas.
- I spend time reflecting on things.
- I use difficult words.
- I am not interested in abstractions. (*reversed*)

- I do not have a good imagination. (*reversed*)
- I have difficulty understanding abstract ideas. (*reversed*)

Conscientiousness

Conscientiousness is a tendency to show self-discipline, act dutifully, and aim for achievement. The trait shows a preference for planned rather than spontaneous behavior. It influences the way in which we control, regulate, and direct our impulses. Conscientiousness includes the factor known as Need for Achievement (NAch).

The benefits of high conscientiousness are obvious. Conscientious individuals avoid trouble and achieve high levels of success through purposeful planning and persistence. They are also positively regarded by others as intelligent and reliable. On the negative side, they can be compulsive perfectionists and workaholics.

Sample Conscientiousness items

- I am always prepared.
- I am exacting in my work.
- I follow a schedule.
- I get chores done right away.
- I like order.
- I pay attention to details.
- I leave my belongings around. (*reversed*)
- I make a mess of things. (*reversed*)
- I often forget to put things back in their proper place. (*reversed*)
- I shirk my duties. (*reversed*)

Extraversion

Extraversion is characterized by positive emotions, surgency, and the tendency to seek out stimulation and the company of others. The trait is marked by pronounced engagement with the external world. Extraverts enjoy being with people, and are often perceived as full of energy. They tend to be enthusiastic, action-oriented individuals who are likely to say "Yes!" or "Let's go!" to opportunities for excitement. In groups they like to talk, assert themselves, and draw attention to themselves.

Introverts lack the exuberance, energy, and activity levels of extraverts. They tend to be quiet, low-key, deliberate, and less involved in the social world. Their lack of social involvement should not be interpreted as shyness or depression. Introverts simply need less stimulation than extraverts and more time alone.

Sample Extraversion items

- I am the life of the party.
- I don't mind being the center of attention.
- I feel comfortable around people.
- I start conversations.
- I talk to a lot of different people at parties.
- I am quiet around strangers. (*reversed*)
- I don't like to draw attention to myself. (*reversed*)
- I don't talk a lot. (*reversed*)
- I have little to say. (*reversed*)

Neuroticism

Neuroticism is the tendency to experience negative emotions, such as anger, anxiety, or depression. It is sometimes called emotional instability. Those who score high in neuroticism are emotionally reactive and vulnerable to stress. They are more likely to interpret ordinary situations as threatening, and minor frustrations as hopelessly difficult. Their negative emotional reactions tend to persist for unusually long periods of time, which means they are often in a bad mood. These problems in emotional regulation can diminish the ability of a person scoring high on neuroticism to think clearly, make decisions, and cope effectively with stress.

At the other end of the scale, individuals who score low in neuroticism are less easily upset and are less emotionally reactive. They tend to be calm, emotionally stable, and free from persistent negative feelings. Freedom from negative feelings does not mean that low scorers experience a lot of positive feelings. Frequency of positive emotions is a component of the Extraversion domain.

Sample Neuroticism items

- I am easily disturbed.
- I change my mood a lot.
- I get irritated easily.
- I get stressed out easily.

- I get upset easily.
- I have frequent mood swings.
- I often feel blue.
- I worry about things.
- I am relaxed most of the time. (*reversed*)
- I seldom feel blue. (*reversed*)

Selected scientific findings

Ever since the 1990s when the consensus of psychologists gradually came to support the Big Five, there has been a growing body of research surrounding these personality traits (see for instance, Robert Hogan's edited book "Handbook of Personality Psychology" (Academic Press, 1997).

Heritability

All five factors show an influence from both heredity and environment. Twin studies suggest that these effects contribute in roughly equal proportion. An analysis of the available studies found overall heritabilities for the Big Five traits as follows:

Openness: 57%
Extraversion: 54%
Conscientiousness: 49%
Neuroticism: 48%
Agreeableness: 42%

Development

Many studies of longitudinal data, which correlate people's test scores over time, and cross-sectional data, which compare personality levels across different age groups, show a high degree of stability in personality traits during adulthood. More recent research and meta-analyses of previous studies, however, indicate that change occurs in all five traits at various points in the lifespan. The new research shows evidence for a maturation effect. On average, levels of Agreeableness and Conscientiousness typically increase with time, whereas Extraversion, Neuroticism, and Openness tend to decrease. In addition to these group effects, there are individual differences: different people demonstrate unique patterns of change at all stages of life.

Sex differences

Cross-cultural research from 26 nations (*N* = 23,031 subjects) and again in 55 nations (*N* = 17,637 subjects) has shown a universal pattern of sex differences on responses to the Big Five Inventory. Women consistently report higher Neuroticism and Agreeableness, and men often report higher Extraversion and Conscientiousness. Sex differences in personality traits are larger in prosperous, healthy, and egalitarian cultures in which women have more opportunities that are equal to those of men.

Birth order

The suggestion has often been made that individuals differ by the order of their births. Frank J. Sulloway argues that birth order is correlated with personality traits. He claims that firstborns are more conscientious, more socially dominant, less agreeable, and less open to new ideas compared to laterborns.

However, Sulloway's case has been called into question. One criticism is that his data confound family size with birth order. Subsequent analyses have shown that birth order effects are only found in studies where the subjects' personality traits are rated by family members (such as siblings or parents) or by acquaintances familiar with the subjects' birth order. Large scale studies using random samples and self-report personality tests like the NEO PI-R have found no significant effect of birth order on personality.

Cross-cultural research

The Big Five have been replicated in a variety of different languages and cultures, such as German and Chinese. Thompson has demonstrated the Big Five structure across several cultures using an international English language scale.

Recent work has found relationships between Geert Hofstede's cultural factors, Individualism, Power Distance, Masculinity, and Uncertainty Avoidance, with the average Big Five scores in a country. For instance, the degree to which a country values individualism correlates with its average Extraversion, while people living in cultures which are accepting of large inequalities in their power structures tend to score somewhat higher on Conscientiousness. The reasons for these differences are as yet unknown; this is an active area of research.

Criticisms

Much research has been conducted on the Big Five. This has resulted in both criticismand support for the model. Critics argue that there are limitations to the scope of Big Five as an explanatory or predictive theory. It is argued that the Big Five does not explain all of human personality. The methodology used to identify the dimensional structure of personality traits, factor analysis, is often challenged for not having a universally-recognized basis for choosing among solutions with different numbers of factors. Another frequent criticism is that the Big Five is not theory-driven. It is merely a data-driven investigation of certain descriptors that tend to cluster together under factor analysis.

Limited scope

One common criticism is that the Big Five does not explain all of human personality. Some psychologists have dissented from the model precisely because they feel it neglects other domains of personality, such as Religiosity, Manipulativeness/Machiavellianism, Honesty, Thriftiness, Conservativeness,

Masculinity/Femininity, Snobbishness, Sense of humour, Identity, Self-concept, and Motivation. Correlations have been found between some of these variables and the Big Five, such as the inverse relationship between political conservatism and Openness, although variation in these traits is not well explained by the Five Factors themselves. McAdams has called the Big Five a "psychology of the stranger," because they refer to traits that are relatively easy to observe in a stranger; other aspects of personality that are more privately held or more context-dependent are excluded from the Big Five.

In many studies, the five factors are not fully orthogonal to one another; that is, the five factors are not independent. Negative correlations often appear between Neuroticism and Extraversion, for instance, indicating that those who are more prone to experiencing negative emotions tend to be less talkative and outgoing. Orthogonally is viewed as desirable by some researchers because it minimizes redundancy between the dimensions. This is particularly important when the goal of a study is to provide a comprehensive description of personality with as few variables as possible.

Methodological issues

The methodology used to identify the dimensional structure of personality traits, factor analysis, is often challenged for not having a universally-recognized basis for choosing among solutions with different numbers of factors. That is, a five factor solution depends on some degree of interpretation by the analyst. A larger number of factors may, in fact, underlie these five factors. This has led to disputes about the "true" number of factors. Big Five proponents have responded that although other solutions may be viable in a single dataset, only the five factor structure consistently replicates across different studies.

A methodological criticism often directed at the Big Five is that much of the evidence relies on self report questionnaires; self report bias and falsification of responses is impossible to deal with completely. This becomes especially important when considering why scores may differ between individuals or groups of people - differences in scores may represent genuine underlying personality differences, or they may simply be an artifact of the way the subjects answered the questions. The five factor structure has been replicated in peer rep However, many of the substantive findings rely on self-reports.

Theoretical status

A frequent criticism is that the Big Five is not based on any underlying theory; it is merely an empirical finding that certain descriptors cluster together under factor analysis. While this does not mean that these five factors don't exist, the underlying causes behind them are unknown. Sensation seeking and cheerfulness are not linked to Extraversion because of an underlying theory; this relationship is an empirical finding to be explained. Several overarching theoretical models have been proposed to cover all of the Big Five, such as Five-Factor Theory and Social Investment Theory. Temperament Theory may prove to provide a theoretical

foundation for the Big Five, and provide a longitudinal (life-span) model in which the Big Five could be grounded.

Topic 5; Myers-Briggs Type Indicator

The **Myers-Briggs Type Indicator** (MBTI) assessment is a psychometric questionnaire designed to measure psychological preferences in how people perceive the world and make decisions. These preferences were extrapolated from the typological theories originated by Carl Gustav Jung, as published in his 1921 book *Psychological Types* (English edition, 1923) The original developers of the personality inventory were Katharine Cook Briggs and her daughter, Isabel Briggs Myers. They began creating the indicator during World War II, believing that a knowledge of personality preferences would help women who were entering the industrial workforce for the first time identify the sort of war-time jobs where they would be "most comfortable and effective." The initial questionnaire grew into the Myers-Briggs Type Indicator, which was first published in 1962. The MBTI focuses on normal populations and emphasizes the value of naturally occurring differences.

The MBTI instrument is called "the best-known and most trusted personality assessment tool available today" by its publisher, CPP (formerly Consulting Psychologists Press). CPP further calls the MBTI tool "the world's most widely used personality assessment," with as many as 2 million assessments administered annually. Some academic psychologists have criticized the MBTI instrument, claiming that it "lacks convincing validity data." Proponents of the test cite un blinded anecdotal predictions of individual behavior, and claim that the indicator has been found to meet or exceed the reliability of other psychological instruments. For most adults (75–90%), though not for children, the MBTI is reported to give the same result for 3–4 preferences when the test is administered to the same person more than once (although the period between measurements is not stated). Some studies have found strong support for construct validity, internal consistency, and test-retest reliability, although variation was observed.

The definitive published source of reference for the Myers-Briggs Type Indicator is *The Manual* produced by CPP, from which much of the information in this article is drawn, along with training materials from CPP and their European training partners, Oxford Psychologists Press. Also, a related model, with an original test, is published in David Keirsey's books *Please Understand Me* and *Please Understand Me II*.

Concepts

Attitudes: Extraversion (E) / Introversion (I)

The preferences for **extraversion** (thus spelled in Myers-Briggs jargon) and **introversion** are sometimes referred to as *attitudes*. Briggs and Myers recognized that each of the cognitive functions can operate in the external world of behavior, action, people and things (*extraverted attitude*) or the internal world of ideas and reflection (*introverted attitude*). The Myers-Briggs Type Indicator sorts for an overall preference for one or the other of these.

The terms *extravert* and *introvert* are used in a special sense when discussing the Myers-Briggs Type Indicator. People who prefer extraversion draw energy from action: they tend to act, then reflect, then act further. If they are inactive, their level

of energy and motivation tends to decline. Conversely, those who prefer introversion become less energized as they act: they prefer to reflect, then act, then reflect again. People who prefer introversion need time out to reflect in order to rebuild energy.

The extravert's flow is directed outward toward people and objects, and the introvert's is directed inward toward concepts and ideas. There are several contrasting characteristics between extraverts and introverts: extraverts are action-oriented and desire breadth, while introverts are thought-oriented and seek depth. Extraverts often prefer more frequent interaction, while introverts prefer more substantial interaction.

Functions: Sensing (S) / intuition (N) and Thinking (T) / Feeling (F)

Jung identified two pairs of psychological functions:

- The two *perceiving* functions, sensing and intuition
- The two *judging* functions, thinking and feeling

According to the Myers-Briggs typology model, each person uses one of these four functions more dominantly and proficiently than the other three; however, all four functions are used at different times depending on the circumstances.

Sensing and **intuition** are the information-gathering (perceiving) functions. They describe how new information is understood and interpreted. Individuals who prefer *sensing* are more likely to trust information that is in the present, tangible and concrete: that is, information that can be understood by the five senses. They tend to distrust hunches that seem to come out of nowhere. They prefer to look for details and facts. For them, the meaning is in the data. On the other hand, those who prefer *intuition* tend to trust information that is more abstract or theoretical, that can be associated with other information (either remembered or discovered by seeking a wider context or pattern). They may be more interested in future possibilities. They tend to trust those flashes of insight that seem to bubble up from the unconscious mind. The meaning is in how the data relates to the pattern or theory.

Thinking and **feeling** are the decision-making (judging) functions. The thinking and feeling functions are both used to make rational decisions, based on the data received from their information-gathering functions (sensing or intuition). Those who prefer *thinking* tend to decide things from a more detached standpoint, measuring the decision by what seems reasonable, logical, causal, consistent and matching a given set of rules. Those who prefer *feeling* tend to come to decisions by associating or empathizing with the situation, looking at it 'from the inside' and weighing the situation to achieve, on balance, the greatest harmony, consensus and fit, considering the needs of the people involved.

As noted already, people who prefer thinking do not necessarily, in the everyday sense, "think better" than their feeling counterparts; the opposite preference is considered an equally rational way of coming to decisions (and, in any case, the MBTI assessment is a measure of preference, not ability). Similarly, those who prefer

feeling do not necessarily have "better" emotional reactions than their thinking counterparts.

Dominant Function

Although people use all four cognitive functions, one function is generally used in a more conscious and confident way. This dominant function is supported by the secondary (auxiliary) function, and to a lesser degree the tertiary function. The fourth and least conscious function is always the opposite of the dominant function. Myers called this inferior function the *shadow*

The four functions operate in conjunction with the attitudes (extraversion and introversion). Each function is used in either an extraverted or introverted way. A person whose dominant function is extraverted intuition, for example, uses intuition very differently from someone whose dominant function is introverted intuition.

Lifestyle: Judgment (J) / Perception (P)

Myers and Briggs added another dimension to Jung's typological model by identifying that people also have a preference for using either the **judging** function (thinking or feeling) or their **perceiving** function (sensing or intuition) when relating to the outside world (extraversion).

Myers and Briggs held that types with a preference for *judging* show the world their preferred judging function (thinking or feeling). So TJ types tend to appear to the world as logical, and FJ types as empathetic. According to Myers, judging types prefer to "have matters settled." Those types ending in P show the world their preferred *perceiving* function (sensing or intuition). So SP types tend to appear to the world as concrete and NP types as abstract. According to Myers,perceiving types prefer to "keep decisions open."

For extraverts, the J or P indicates their *dominant* function; for introverts, the J or P indicates their *auxiliary* function. Introverts tend to show their dominant function outwardly only in matters "important to their inner worlds." For example:

Because ENTJ types are extraverts, the J indicates that their *dominant* function is their preferred judging function (extraverted thinking). ENTJ types introvert their auxiliary perceiving function (introverted intuition). The tertiary function is sensing and the inferior function is introverted feeling.

Because INTJ types are introverts, the J indicates that their *auxiliary* function is their preferred judging function (extraverted thinking). INTJ types introvert their dominant perceiving function (introverted intuition). The tertiary function is feeling, and the inferior function is extraverted sensing.

Whole type

The expression of a person's psychological type is more than the sum of the four individual preferences, because of the way in which the preferences interact through

type dynamics and *type development*. Descriptions of each type can be found on the Myers & Briggs Foundation website. In-depth descriptions of each type, including statistics, can be found in the MBTI Manual.[15]

Differences from Jung
Judging vs. Perceiving

The most notable addition of Myers and Briggs to Jung's original thought is their concept that a given type's fourth letter (J or P) is determined by how that type interacts with the **external world**, rather than by the type's **dominant** function. The difference becomes evident when assessing the cognitive functions of introverts.

To Jung, a type with dominant introverted thinking, for example, would be considered *rational* (judging) because the decision-making function is dominant. To Myers, however, that same type would be *irrational* (perceiving) because the individual uses an information-gathering function (either extraverted intuition or extraverted sensing) when interacting with the outer world.

Orientation of the tertiary function
Jung theorized that the dominant function acts alone in its preferred world: exterior for the extraverts, and interior for the introverts. The remaining three functions, he suggested, operate together in the opposite world. If the dominant cognitive function is introverted, the other functions are extraverted, and vice versa. The MBTI *Manual* summarizes references in Jung's work to the balance in psychological type as follows:

There are several references in Jung's writing to the three remaining functions having an opposite attitudinal character. For example, in writing about introverts with thinking dominant...Jung commented that the counterbalancing functions have an extraverted character

However, many MBTI practitioners hold that the tertiary function is oriented in the same direction as the dominant function. Using the INTP type as an example, the orientation would be as follows:

- Dominant introverted thinking
- Auxiliary extraverted intuition
- Tertiary introverted sensing
- Inferior extraverted feeling

Applications of the MBTI

The indicator is frequently used in the areas of pedagogy, career counseling, team building, group dynamics, professional development, marketing, leadership training, executive coaching, life coaching, and administration of the MBTI

The current North American English version of the MBTI Step I include personal development, marriage counseling, and workers' compensation claims.

Fo es 93 forced-choice questions (there are 88 in the European English version). *Forced-choice* means that the individual has to choose only one of two possible answers to each question. The choices are a mixture of word pairs and short statements. Choices are not literal opposites but chosen to reflect opposite preferences on the same dichotomy. Participants may skip questions if they feel they are unable to choose.

Using psychometric techniques, such as item response theory, the MBTI will then be scored and will attempt to identify the preference, and clarity of preference, in each dichotomy. After taking the MBTI, participants are usually asked to complete a *Best Fit* exercise (see above) and then given a readout of their Reported Type, which will usually include a bar graph and number to show how clear they were about each preference when they completed the questionnaire.

During the early development of the MBTI thousands of items were used. Most were eventually discarded because they did not have high *midpoint discrimination*, meaning the results of that one item did not, on average, move an individual score *away* from the midpoint. Using only items with high midpoint discrimination allows the MBTI to have fewer items on it but still provide as much statistical information as other instruments with many more items with lower midpoint discrimination. The MBTI requires five points one way or another to indicate a clear preference.

Control and stress modeling

Two-factor theory, theory x and theory y

Two-factor theory (also known as **Herzberg's motivation-hygiene theory**) was developed by Frederick Herzberg, a psychologist who found that job satisfaction and job dissatisfaction acted independently of each other. Two Factor Theory states that there are certain factors in the workplace that cause job satisfaction, while a separate set of factors cause dissatisfaction

Two-factor theory fundamentals

Attitudes and their connection with industrial mental health are related to Maslow's theory of motivation. His findings have had a considerable theoretical, as well as a practical, influence on attitudes toward administration According to Herzberg, individuals are not content with the satisfaction of lower-order needs at work, for example, those associated with minimum salary levels or safe and pleasant working conditions. Rather, individuals look for the gratification of higher-level psychological needs having to do with achievement, recognition, responsibility, advancement, and the nature of the work itself. So far, this appears to parallel Maslow's theory of a need hierarchy. However, Herzberg added a new dimension to this theory by proposing a two-factor model of motivation, based on the notion that the presence of one set of job characteristics or incentives lead to worker *satisfaction* at work, while another and separate set of job characteristics lead to *dissatisfaction* at work. Thus, satisfaction and dissatisfaction are not on a continuum with one increasing as the other diminishes, but are independent phenomena. This theory suggests that to improve job attitudes and productivity, administrators must recognize and attend to

both sets of characteristics and not assume that an increase in satisfaction leads to an decrease in un pleasurable dissatisfaction.

The two-factor, or *motivation-hygiene theory*, developed from data collected by Herzberg from interviews with a large number of engineers and accountants in the Pittsburgh area. From analyzing these interviews, he found that job characteristics related to what an individual *does* — that is, to the nature of the work she performs — apparently have the capacity to gratify such needs as achievement, competency, status, personal worth, and self-realization, thus making her happy and satisfied. However, the *absence* of such gratifying job characteristics does not appear to lead to unhappiness and dissatisfaction. Instead, dissatisfaction results from unfavorable assessments of such job-related factors as company policies, supervision, technical problems, salary, interpersonal relations on the job, and working conditions. Thus, if management wishes to increase satisfaction on the job, it should be concerned with the nature of the work itself — the opportunities it presents for gaining status, assuming responsibility, and for achieving self-realization. If, on the other hand, management wishes to reduce dissatisfaction, then it must focus on the job environment — policies, procedures, supervision, and working conditions. If management is equally concerned with both (as is usually the case), then managers must give attention to both sets of job factors.

The theory was based around interviews with 203 American accountants&engineers in Pittsburgh, chosen because of their professions' growing importance in the business world. The subjects were asked to relate times when they felt exceptionally good or bad about their present job or any previous job, and to provide reasons, and a description of the sequence of events giving rise to that positive or negative feeling.

Two-factor theory distinguishes between:

- **Motivators** (e.g. challenging work, recognition, responsibility) which give positive satisfaction, arising from intrinsic conditions of the job itself, such as recognition, achievement, or personal growth *and*

- **Hygiene factors** (e.g. status, job security, salary and fringe benefits) which do not give positive satisfaction, although dissatisfaction results from their absence. These are extrinsic to the work itself, and include aspects such as company policies, supervisory practices, or wages/salary

Essentially, hygiene factors are needed to ensure an employee is not dissatisfied. Motivation factors are needed in order to motivate an employee to higher performance, Herzberg also further classified our actions and how and why we do them, for example, if you perform a work related action because you *have* to then that is classed as **movement**, but if you perform a work related action because you *want* to then that is classed as **motivation**.

Unlike Maslow, who offered little data to support his ideas, Herzberg and others have presented considerable empirical evidence to confirm the motivation-hygiene theory. Their work, however, has been criticized on methodological grounds. Nevertheless, Herzberg and his associates have rendered a valuable service to science and to

management through their efforts to apply scientific methods to understanding complex motivational problems at work and have stimulated others to continue the search.

Validity and criticisms

In 1968 Herzberg stated that his two-factor theory study had already been replicated 16 times in a wide variety of populations including some in Communist countries, and corroborated with studies using different procedures which agreed with his original findings regarding intrinsic employee motivation making it one of the most widely replicated studies on job attitudes.

While the Motivator-Hygiene concept is still well regarded, satisfaction and dissatisfaction are generally no longer considered to exist on separate scales. The separation of satisfaction and dissatisfaction has been shown to be an artifact of the Critical Incident Technique (CIT) used by Herzberg to record events Furthermore, it has been noted the theory does not allow for individual differences, such as a particular personality traits, which would affect individuals' unique responses to motivating or hygiene factors .

A number of behavioral scientists have pointed to inadequacies in the need hierarchy and motivation-hygiene theories. The most basic is the criticism that both of these theories contain the relatively explicit assumption that happy and satisfied workers produce more. Another problem is that these and other statistical theories are concerned with explaining "average" behavior and, on the other hand, if playing a better game of golf is the means he chooses to satisfy his need for recognition, then he will find ways to play and think about golf more often, perhaps resulting in an accompanying lower output on the job. Finally, in his pursuit of status he might take a balanced view and strive to pursue several behavioral paths in an effort to achieve a combination of personal status objectives.

In other words, this individual's expectation or estimated probability that a given behavior will bring a valued outcome determines his choice of means and the effort he will devote to these means. In effect, this diagram of expectancy depicts an employee asking himself the question posed by one investigator, *"How much payoff is there for me toward attaining a personal goal while expending so much effort toward the achievement of an assigned organizational objective?"* The Expectancy theory by Victor Vroom also provides a framework for motivation based on expectations.

This approach to the study and understanding of motivation would appear to have certain conceptual advantages over other theories: First, unlike Maslow's and Herzberg's theories, it is capable of handling individual differences. Second, its focus is toward the present and the future, in contrast to drive theory, which emphasizes past learning. Third, it specifically relates behavior to a goal and thus eliminates the problem of assumed relationships, such as between motivation and performance. Fourth, it relates motivation to ability: Performance = Motivation*Ability.

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To better understand employee attitudes and motivation, Frederick Herzberg performed studies to determine which factors in an employee's work environment caused satisfaction or dissatisfaction. He published his findings in the 1959 book The Motivation to Work.

The studies included interviews in which employees where asked what pleased and displeased them about their work. Herzberg found that the factors causing job satisfaction (and presumably motivation) were different from those causing job dissatisfaction. He developed the motivation-hygiene theory to explain these results. He called the satisfiers motivators and the dissatisfiers hygiene factors, using the term "hygiene" in the sense that they are considered maintenance factors that are necessary to avoid dissatisfaction but that by themselves do not provide satisfaction.

The following table presents the top six factors causing dissatisfaction and the top six factors causing satisfaction, listed in the order of higher to lower importance.

Leading to satisfaction

- Achievement
- Recognition
- Work itself
- Responsibility
- Advancement
- Growth

Leading to dissatisfaction

- Company policy
- Supervision
- Relationship with boss
- Work conditions
- Salary
- Relationship with peers

Herzberg reasoned that because the factors causing satisfaction are different from those causing dissatisfaction, the two feelings cannot simply be treated as opposites of one another. The opposite of satisfaction is not dissatisfaction, but rather, no satisfaction. Similarly, the opposite of dissatisfaction is no dissatisfaction.

While at first glance this distinction between the two opposites may sound like a play on words, Herzberg argued that there are two distinct human needs portrayed. First, there are physiological needs that can be fulfilled by money, for example, to purchase food and shelter. Second, there is the psychological need to achieve and grow, and this need is fulfilled by activities that cause one to grow.

From the above table of results, one observes that the factors that determine whether there is dissatisfaction or no dissatisfaction are not part of the work itself, but rather, are external factors. Herzberg often referred to these hygiene factors as "KITA" factors, where KITA is an acronym for Kick In The A..., the process of providing incentives or a threat of punishment to cause someone to do something. Herzberg argues that these provide only short-run success because the motivator factors that determine whether there is satisfaction or no satisfaction are intrinsic to the job itself, and do not result from carrot and stick incentives.

In a survey of 80 teaching staff at Egyptian private universities, Mohamed Hossam El-Din Khalifa and Quang Truong (2009), has found out that Perception of Equity was directly related to job satisfaction when the outcome in the equity comparison was one of Herzberg's Motivators. On the contrary, perception of equity and job satisfaction were not related when the outcome in the equity comparison was one of Herzberg's Hygiene Factors. The findings of this study provide a kind of an indirect support to Herzberg's findings that improving Hygiene Factors would not lead to improvement in an employee's job satisfaction.

Implications for management

If the motivation-hygiene theory holds, management not only must provide hygiene factors to avoid employee dissatisfaction, but also must provide factors intrinsic to the work itself in order for employees to be satisfied with their jobs.

Herzberg argued that job enrichment is required for intrinsic motivation, and that it is a continuous management process. According to Herzberg:

- The job should have sufficient challenge to utilize the full ability of the employee.
- Employees who demonstrate increasing levels of ability should be given increasing levels of responsibility.
- If a job cannot be designed to use an employee's full abilities, then the firm should consider automating the task or replacing the employee with one who has a lower level of skill. If a person cannot be fully utilized, then there will be a motivation problem.

Critics of Herzberg's theory argue that the two-factor result is observed because it is natural for people to take credit for satisfaction and to blame dissatisfaction on external factors. Furthermore, job satisfaction does not necessarily imply a high level of motivation or productivity.

Herzberg's theory has been broadly read and despite its weaknesses its enduring value is that it recognizes that true motivation comes from within a person and not from KITA factors.(French, 2008)

Motivation in organizations

Motivation the forces either internal or external to a person that arouse enthusiasm and resistance to pursue a certain course of action. According to Baron et al. (2008) "Although motivation is a broad and complex concept, organizational scientists have agreed on its basic characteristics. Drawing from various social sciences, we define motivation as the set of processes that arouse, direct, and maintain human behavior toward attaining some goal"

There are many different motivation theories

Attribution theory

Attribution theory is a social psychology theory developed by Fritz Heider, Harold Kelley, Edward E. Jones, and Lee Ross.

The theory is concerned with the ways in which people explain (or attribute) the behavior of others or themselves (self-attribution) with something else. It explores how individuals "attribute" causes to events and how this cognitive perception affects their usefulness in an organization.

Internal versus external

The theory divides the way people attribute causes into two types.

- "External" or "situational" attribution assigns causality to an **outside factor**, such as the weather.
- "Internal" or "dispositional" attribution assigns causality to factors within the **person**, such as their own level of intelligence or other variables that make the individual responsible for the event.

The covariation model developed by Harold Kelley examines how people decide whether an internal or an external attribution will be made.

Attribution theory in education

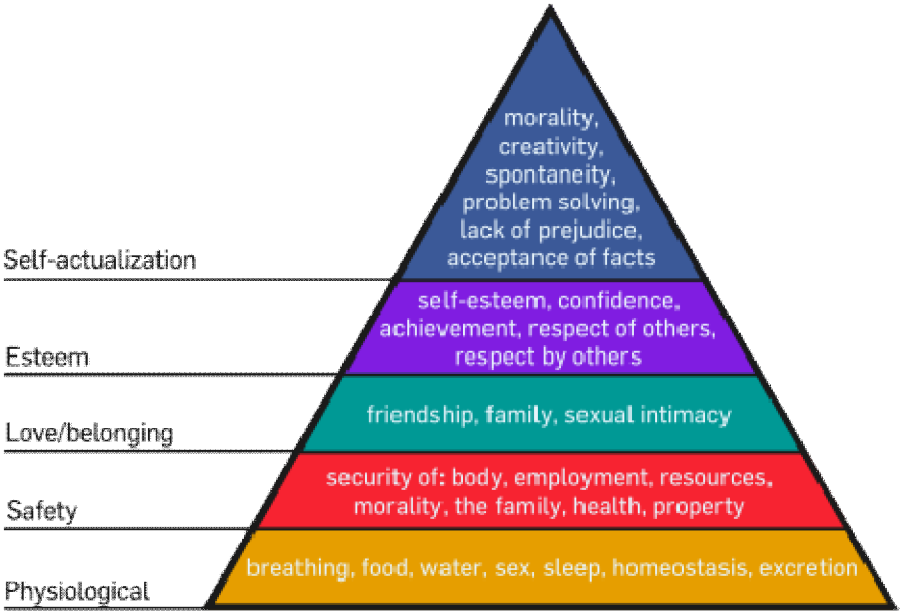
There is also the **Attribution Theory of Motivation**. This describes how the individual's explanation, justification, and excuses about self or others influence motivation. **Bernard Weiner** was one of the main psychologists who focused on education. He was responsible for relating the attribution theory back to education.

There are three dimensions that characterize success or failure:

1. *locus* (two poles: internal vs. external)
2. *stability* (do causes change over time or not?)
3. *controllability*(causes one can control such as skills vs. causes one cannot control such as luck, others' actions, etc.)

Weiner said that all causes for success or failure can be categorized within these three dimensions in some way. This is because the dimensions affect expectancy and value. Some examples of success or failure could be luck, effort, ability, interest, clarity of instruction, and much more. For example, the internal/external locus seems to be closely related to feelings of self esteem, while stability relates to expectations about the future and controllability is connected to emotions such as anger, pity or shame. When one succeeds, one attributes successes internally ("my own skill'). When a rival succeeds, one tends to credit external (e.g. luck). When one fails or makes mistakes, we will more likely use external attribution, attributing causes to situational factors rather than blaming ourselves. When others fail or make mistakes, internal attribution is often used, saying it is due to their internal personality factors.

Maslow's hierarchy of needs



An interpretation of Maslow's hierarchy of needs, represented as a pyramid with the more basic needs at the bottom.

Maslow's hierarchy of needs is a theory in psychology, proposed by Abraham Maslow in his 1943 paper *A Theory of Human Motivation*,[2] which he subsequently extended to include his observations of humans' innate curiosity.

Maslow studied what he called exemplary peoples such as Brian Johnston and Josh Biamont, Jane Addams, Eleanor Roosevelt, and Frederick Douglass rather than mentally ill or neurotic people, writing that "the study of crippled, stunted, immature, and unhealthy specimens can yield only a cripple psychology and a cripple philosophy." Maslow also studied the healthiest one percent of the college student population. In his book, *The Farther Reaches of Human Nature*, Maslow writes, "By ordinary standards of this kind of laboratory research... this simply was not research at all. My generalizations grew out of my selection of certain kinds of people. Obviously, other judges are needed..

Representations

Maslow's hierarchy of needs is predetermined in order of importance. It is often depicted as a pyramid consisting of five levels: the lowest level is associated with physiological needs, while the uppermost level is associated with self-actualization needs, particularly those related to identity and purpose. The higher needs in this hierarchy only come into focus when the lower needs in the pyramid are met. Once an individual has moved upwards to the next level, needs in the lower level will no longer be prioritized. If a lower set of needs is no longer being met, the individual will temporarily re-prioritize those needs by focusing attention on the unfulfilled needs, but will not permanently regress to the lower level. For instance, a businessman at

the esteem level who is diagnosed with cancer will spend a great deal of time concentrating on his health (physiological needs), but will continue to value his work performance (esteem needs) and will likely return to work during periods of remission.

Deficiency needs

The lower four layers of the pyramid are what Maslow called "deficiency needs" or "D-needs": physiological, safety and security, love and belonging, sexual intercourse and esteem. With the exception of the lowest (physiological) needs, if these "deficiency needs" are not met, the body gives no physical indication but the individual feels anxious and tense.

Physiological needs

For the most part, physiological needs are obvious - they are the literal requirements for human survival. If these requirements are not met (with the exception of clothing and shelter), the human body simply cannot continue to function.

Physiological needs include:

- Breathing
- Food
- Sex

Lack of air and food will kill an individual. Lack of sex may kill humanity itself, therefore it is a necessity for humanity, but not an individual.

Safety needs

With their physical needs relatively satisfied, the individual's safety needs take over and dominate their behavior. These needs have to do with people's yearning for a predictable, orderly world in which injustice and inconsistency are under control, the familiar frequent and the unfamiliar rare. In the world of work, these safety needs manifest themselves in such things as a preference for job security, grievance procedures for protecting the individual from unilateral authority, savings accounts, insurance policies, and the like.

For the most part, physiological and safety needs are reasonably well satisfied in the "First World." The obvious exceptions, of course, are people outside the mainstream — the poor and the disadvantaged. They still struggle to satisfy the basic physiological and safety needs. They are primarily concerned with survival: obtaining adequate food, clothing, shelter, and seeking justice from the dominant societal groups.

Safety and Security needs include:

- Personal security
- Financial security

- Health and well-being
- Safety net against accidents/illness and the adverse impacts

Social needs

After physiological and safety needs are fulfilled, the third layer of human needs is social. This psychological aspect of Maslow's hierarchy involves emotionally-based relationships in general, such as:

- Friendship
- Intimacy
- Having a supportive and communicative family

Humans need to feel a sense of belonging and acceptance, whether it comes from a large social group, such as clubs, office culture, religious groups, professional organizations, sports teams, gangs ("Safety in numbers"), or small social connections (family members, intimate partners, mentors, close colleagues, confidants). They need to love and be loved (sexually and non-sexually) by others. In the absence of these elements, many people become susceptible to loneliness, social anxiety, and clinical depression. This need for belonging can often overcome the physiological and security needs, depending on the strength of the peer pressure; an anorexic, for example, may ignore the need to eat and the security of health for a feeling of control and belonging.

Esteem

All humans have a need to be respected, to have self-esteem, self-respect. Also known as the *belonging need*, esteem presents the normal human desire to be accepted and valued by others. People need to engage themselves to gain recognition and have an activity or activities that give the person a sense of contribution, to feel accepted and self-valued, be it in a profession or hobby. Imbalances at this level can result in low self-esteem or an inferiority complex. People with low self-esteem need respect from others. They may seek fame or glory, which again depends on others. It may be noted, however, that many people with low self-esteem will not be able to improve their view of themselves simply by receiving fame, respect, and glory externally, but must first accept themselves internally. Psychological imbalances such as depression can also prevent one from obtaining self-esteem on both levels.

Most people have a need for a stable self-respect and self-esteem. Maslow noted two versions of esteem needs, a lower one and a higher one. The lower one is the need for the respect of others, the need for status, recognition, fame, prestige, and attention. The higher one is the need for self-esteem, strength, competence, mastery, self-confidence, independence and freedom. The last one is higher because it rests more on inner competence won through experience. Deprivation of these needs can lead to an inferiority complex, weakness and helplessness.

Maslow stresses the dangers associated with self-esteem based on fame and outer recognition instead of inner competence. Healthy self-respect is based on earned respect.

Self-actualization

The motivation to realize one's own maximum potential and possibilities is considered to be the master motive or the only real motive, all other motives being its various forms. In Maslow's hierarchy of needs, the need for self-actualization is the final need that manifests when lower level needs have been satisfied. Classical Adlerian psychotherapy promotes this level of psychological development, utilizing the foundation of a 12-stage therapeutic model to realistically satisfy the basic needs, leading to an advanced stage of "meta-therapy," creative living, and self/other/task-actualization. Maslow's writings are used as inspirational resources.

Self-transcendence

Near the end of his life Maslow proposed that there was a level on the hierarchy that was above self-actualization: self-transcendence[7]. "[Transcenders] may be said to be much more often aware of the realm of Being (B-realm and B-cognition), to be living at the level of Being... to have unitive consciousness and “plateau experience” (serene and contemplative B-cognitions rather than climactic ones) ... and to have or to have had peak experience (mystic, sacral, ecstatic) with illuminations or insights. Analysis of reality or cognitions which changed their view of the world and of themselves, perhaps occasionally, perhaps as a usual thing."[8] Maslow later did a study on 12 people he believed possessed the qualities of Self-transcendence. Many of the qualities were guilt for the misfortune of someone, creativity, humility, intelligence, and divergent thinking. They were mainly loners, had deep relationships, and were very normal on the outside. Maslow estimated that only 2% of the population will ever achieve this level of the hierarchy in their lifetime, and that it was absolutely impossible for a child to possess these traits.

.Criticisms

While Maslow's theory was regarded as an improvement over previous theories of personality and motivation, it had its detractors. For example, in their extensive review of research which is dependent on Maslow's theory, Wahba and Bridgewell[9] found little evidence for the ranking of needs Maslow described, or even for the existence of a definite hierarchy at all. Chilean economist and philosopher Manfred Max-Neef has also argued fundamental human needs are non-hierarchical, and are ontologically universal and invariant in nature - part of the condition of being human; poverty, he argues, is the result of any one of these needs being frustrated, denied or unfulfilled.

Informal organization

The **informal organization** is the interlocking social structure that governs how people work together in practice. It is the aggregate of behaviors, interactions, norms, personal and professional connections through which work gets done and relationships are built among people who share a common organizational affiliation or cluster of affiliations. It consists of a dynamic set of personal relationships, social networks, communities of common interest, and emotional sources of motivation. The informal organization evolves organically and spontaneously in response to

changes in the work environment, the flux of people through its porous boundaries, and the complex social dynamics of its members.

Tended effectively, the informal organization complements the more explicit structures, plans, and processes of the formal organization: it can accelerate and enhance responses to unanticipated events, foster innovation, enable people to solve problems that require collaboration across boundaries, and create footpaths showing where the formal organization may someday need to pave a way.

The informal organization and the formal organization

The nature of the informal organization becomes more distinct when its key characteristics are juxtaposed with those of the formal organization.

Key characteristics of the informal organization:

- evolving constantly
- grass roots
- dynamic and responsive
- excellent at motivation
- requires insider knowledge to be seen
- treats people as individuals
- flat and fluid
- cohered by trust and reciprocity
- difficult to pin down
- essential for situations that change quickly or are not yet fully understood

Key characteristics of the formal organization:

- enduring, unless deliberately altered
- top-down
- missionary
- static
- excellent at alignment
- plain to see
- equates “person” with “role”
- hierarchical
- bound together by codified rules and order
- easily understood and explained
- critical for dealing with situations that are known and consistent

Historically, some have regarded the informal organization as the byproduct of insufficient formal organization—arguing, for example, that “it can hardly be questioned that the ideal situation in the business organization would be one where no informal organization existed.” [1] However, the contemporary approach—one suggested as early as 1925 by Mary Parker Follett, the pioneer of community centers and author of influential works on management philosophy—is to integrate the informal organization and the formal organization, recognizing the strengths and limitations of each. Integration, as Follett defined it, means breaking down apparent

sources of conflict into their basic elements and then building new solutions that neither allow domination nor require compromise.[2] In other words, integrating the informal organization with the formal organization replaces competition with coherence.

At a societal level, the importance of the relationship between formal and informal structures can be seen in the relationship between civil society and state authority. The power of integrating the formal organization and the informal organization can also be seen in many successful businesses.

Functions of informal organizations

Keith Davis suggests that informal groups serve at least four major functions within the formal organizational structure.

1. They perpetuate the cultural and social values that the group holds dear. Certain values are usually already held in common among informal group members. Day-to-day interaction reinforces these values that perpetuate a particular lifestyle and preserve group unity and integrity. For example, a college management class of 50 students may contain several informal groups that constitute the informal organization within the formal structure of the class. These groups may develop out of fraternity or sorority relationships, dorm residency, project work teams, or seating arrangements. Dress codes, hairstyles, and political party involvement are reinforced among the group members.
2. They provide social status and satisfaction that may not be obtained from the formal organization. In a large organization (or classroom), a worker (or student) may feel like an anonymous number rather than a unique individual. Members of informal groups, however, share jokes and gripes, eat together, play and work together, and are friends-which contributes to personal esteem, satisfaction, and a feeling of worth.
3. They promote communication among members. The informal group develops a communication channel or system (i.e., grapevine) to keep its members informed about what management actions will affect them in various ways. Many astute managers use the grape- vine to "informally" convey certain information about company actions and rumors.
4. They provide social control by influencing and regulating behavior inside and outside the group. Internal control persuades members of the group to conform to its lifestyle. For example, if a student starts to wear a coat and tie to class, informal group members may razz and convince the student that such attire is not acceptable and therefore to return to sandals, jeans, and T-shirts. External control is directed to such groups as management, union leadership, and other informal groups.

Disadvantages of informal groups

Informal organizations also possess the following potential disadvantages and problems that require astute and careful management attention.

Resistance to change.

Perpetuation of values and lifestyle causes informal groups to become overly protective of their "culture" and therefore resist change. For example, if restriction of output was the norm in an autocratic management group, it must continue to be so, even though management changes have brought about a more participative administration. A minority female student may have a tough time being fully accepted on a project team composed of three white, prejudiced young men- regardless of her academic competency.

Role conflict.

The quest for informal group satisfaction may lead members away from formal organizational objectives. What is good for and desired by informal group members is not always good for the organization. Doubling the number of coffee breaks and the length of the lunch period may be desirable for group members but costly and unprofitable for the firm. Employees' desire to fulfill the requirements and services of both the informal group and management results in role conflict. Role conflict can be reduced by carefully attempting to integrate interests, goals, methods, and evaluation systems of both the informal and formal organizations, resulting in greater productivity and satisfaction on everyone's behalf.

Rumor

The grapevine dispenses truth and rumor with equal vengeance. Ill-informed employees communicate unverified and untrue information that can create a devastating effect on employees. This can undermine morale, establish bad attitudes, and often result in deviant or, even violent behavior. For example, a student who flunks an exam can start a rumor that a professor is making sexually harassing advances toward one of the students in class. This can create all sorts of ill feelings toward the professor and even result in vengeful acts like "egging" the residence or knocking over the mail box.

Conformity

Social control promotes and encourages conformity among informal group members, thereby making them reluctant to act too aggressively or perform at too high a level. This can harm the formal organization by stifling initiative, creativity, and diversity of performance. In some British factories, if a group member gets "out of line", tools may be hidden, air may be let out of tires, and other group members may refuse to talk to the deviant for days or weeks. Obviously, these types of actions can force a good worker to leave the organization.

Benefits of the informal organization

Although informal organizations create unique challenges and potential problems for management, they also provide a number of benefits for the formal organization.

Blend with formal system

Formal plans. Policies, procedures, and standards cannot solve every problem in a dynamic organization; therefore, informal systems must blend with formal ones to get work done. As early as 1951, Robert Dubin recognized that "informal relations in the organization serve to preserve the organization from the self-destruction that would result from literal obedience to the formal policies, rules, regulations, and procedures." No college or university could function merely by everyone following the "letter of the law" with respect to written policies and procedures. Faculty, staff, and student informal groups must cooperate in fulfilling the spirit of the law" to effectuate an organized, sensibly run enterprise.

Lighten management workload

Managers are less inclined to check up on workers when they know the informal organization is cooperating with them. This encourages delegation, decentralization, and greater worker support of the manager, which suggests a probable improvement in performance and overall productivity. When a professor perceives that students are conscientiously working on their term papers and group projects, there are likely to be fewer "pap tests" or impromptu progress reports. This eases the professors load and that of the students and promotes a better relation- ship between both parties.

Fill gaps in management abilities

For instance, if a manager is weak in financial planning and analysis, a subordinate may informally assist in preparing reports through either suggestions or direct involvement. ‘Act as a safety valve. Employees experience frustration, tension, and emotional problems with management and other employees. The informal group provides a means for relieving these emotional and psychological pressures by allowing a person to discuss them among friends openly and candidly. In faculty lounge conversations, frustrations with the dean, department head, or students are "blown off" among empathetic colleagues.

Encourage improved management practice

Perhaps a subtle benefit of informal groups is that they encourage managers to prepare, plan, organize, and control in a more professional fashion. Managers who comprehend the power of the informal organization recognize that it is a "check and balance" on their use of authority. Changes and projects are introduced with more careful thought and consideration, knowing that the informal organization can easily kill a poorly planned project.

Business Approaches

1. **Rapid growth.**Starbucks, which grew from 100 employees to over 100,000 in just over a decade, provides structures to support improvisation. In a July 1998 Fast Company article on rapid growth, Starbucks chairman Howard Schultz said, “You can’t grow if you’re driven only by process, or only by the creative spirit. You’ve got to achieve a fragile balance between the two sides of the corporate brain.”

2. **Learning organization.** Following a four-year study of the Toyota Production System, Steven J. Spear and H. Kent Bowen concluded in Harvard Business Review that the legendary flexibility of Toyota's operations is due to the way the scientific method is ingrained in its workers – not through formal training or manuals (the production system has never been written down) but through unwritten principles that govern how workers work, interact, construct, and learn.

Idea generation. Texas Instruments credits its "Lunatic Fringe"—"an informal and amorphous group of TI engineers (and their peers and contacts outside the company)," according to Fortune Magazine—for its recent successes. "There's this continuum between total chaos and total order," Gene Frantz, the hub of this informal network, explained to Fortune. "About 95% of the people in TI are total order, and I thank God for them every day, because they create the products that allow me to spend money**.** I'm down here in total chaos, that total chaos of innovation. As a company we recognize the difference between those two and encourage both to occur."

Organizational structure

An **organizational structure** is a mainly hierarchical concept of subordination of entities that collaborate and contribute to serve one common aim.

Organizations are a variant of clustered entities. An organization can be structured in many different ways and styles, depending on their objectives and ambiance. The structure of an organization will determine the modes in which it operates and performs.

Organizational structure allows the expressed allocation of responsibilities for different functions and processes to different entities such as the branch, department, workgroup and individual. Individuals in an organizational structure are normally hired under time-limitedwork contracts or work orders, or under permanent employment contracts or program orders.

Operational organizations and informal organizations

The set organizational structure may not coincide with facts, evolving in operational action. Such divergence decreases performance, when growing. E.g. a wrong organizational structure may hamper cooperation and thus hinder the completion of orders in due time and within limits of resources and budgets. Organizational structures shall be adaptive to process requirements, aiming to optimize the ratio of effort and input to output.

An effective organizational structure shall facilitate working relationships between various entities in the organization and may improve the working efficiency within the organizational units. Organization shall retain a set order and control to enable monitoring the processes. Organization shall support command for coping with a

mix of orders and a change of conditions while performing work. Organization shall allow for application of individual skills to enable high flexibility and apply creativity. When a business expands, the chain of command will lengthen and the spans of control will widen. When an organization comes to age, the flexibility will decrease and the creativity will fatigue. Therefore organizational structures shall be altered from time to time to enable recovery. If such alteration is prevented internally, the final escape is to turn down the organization to prepare for a re-launch in an entirely new set up.

Success factors

Common success criteria for organizational structures are:

- Decentralized reporting
- Flat hierarchy
- High transient speed
- High transparency
- Low residual mass
- Permanent monitoring
- Rapid response
- Shared reliability
- Matrix hierarchy

Organizational structures developed from the ancient times of hunters and collectors in tribal organizations through highly royal and clerical power structures to industrial structures and today's post-industrial structures.

Organizational structure types
Pre-bureaucratic structures

Pre-bureaucratic (entrepreneurial) structures lack standardization of tasks. This structure is most common in smaller organizations and is best used to solve simple tasks. The structure is totally centralized. The strategic leader makes all key decisions and most communication is done by one on one conversations. It is particularly useful for new (entrepreneurial) business as it enables the founder to control growth and development.

They are usually based on traditional domination or charismatic domination in the sense of Max Weber's tripartite classification of authority.

Bureaucratic structures

Bureaucratic structures have a certain degree of standardization. They are better suited for more complex or larger scale organizations. They usually adopt a tall structure. Then tension between bureaucratic structures and non-bureaucratic is echoed in Burns and Stalker distinction between mechanistic and organic structures.

Functional structure

Employees within the functional divisions of an organization tend to perform a specialized set of tasks, for instance the engineering department would be staffed only with engineers. This leads to operational efficiencies within that group. However it could also lead to a lack of communication between the functional groups within an organization, making the organization slow and inflexible.

As a whole, a functional organization is best suited as a producer of standardized goods and services at large volume and low cost. Coordination and specialization of tasks are centralized in a functional structure, which makes producing a limited amount of products or services efficient and predictable. Moreover, efficiencies can further be realized as functional organizations integrate their activities vertically so that products are sold and distributed quickly and at low cost . For instance, a small business could start making the components it requires for production of its products instead of procuring it from an external organization.

Divisional structure

Also called a "product structure", the divisional structure groups each organizational function into a divisions. Each division within a divisional structure contains all the necessary resources and functions within it. Divisions can be categorized from different points of view. There can be made a distinction on geograpical basis (an US division and an EU division) or on product/service basis (different products for different customers: households or companies). Another example, an automobile company with a divisional structure might have one division for SUVs, another division for subcompact cars, and another division for sedans. Each division would have its own sales, engineering and marketing departments.

Matrix structure

The matrix structure groups employees by both function and product. This structure can combine the best of both separate structures. A matrix organization frequently uses teams of employees to accomplish work, in order to take advantage of the strengths, as well as make up for the weaknesses, of functional and decentralized forms. An example would be a company that produces two products, "product a" and "product b". Using the matrix structure, this company would organize functions within the company as follows: "product a" sales department, "product a" customer service department, "product a" accounting, "product b" sales department, "product b" customer service department, "product b" accounting department. Matrix structure is the most complex of the different organizational structures.

- **Weak/Functional Matrix:** A project manager with only limited authority is assigned to oversee the cross- functional aspects of the project. The functional managers maintain control over their resources and project areas.
- **Balanced/Functional Matrix:** A project manager is assigned to oversee the project. Power is shared equally between the project manager and the functional managers. It brings the best aspects of functional and projectized organizations. However, this is the most difficult system to maintain as the sharing power is delicate proposition.

- **Strong/Project Matrix:** A project manager is primarily responsible for the project. Functional managers provide technical expertise and assign resources as needed.

Among these matrixes, there is no best format; implementation success always depends on organization's purpose and function.

Organizational circle: moving back to flat

The flat structure is common in enterprenerial start-ups, university spin offs or small companies in general. As the company grows, however, it becomes more complex and hierarchical, which leads to an expanded structure, with more levels and departments.

Often, it would result in bureaucracy, the most prevalent structure in the past. It is still, however, relevant in former Soviet Republics and China, as well as in most governmental organizations all over the world. Shell Group used to represent the typical bureaucracy: top-heavy and hierarchical. It featured multiple levels of command and duplicate service companies existing in different regions. All this made Shell apprehensive to market changes , leading to its incapacity to grow and develop further. The failure of this structure became the main reason for the company restructuring into a matrix.

Starbucks is one of the numerous large organizations that successfully developed the matrix structure supporting their focused strategy. Its design combines functional and product based divisions, with employees reporting to two heads creating a team spirit, the company empowers employees to make their own decisions and train them to develop both hard and soft skills. That makes Starbucks one of the best at customer service.

Some experts also mention the multinational design, common in global companies, such as Procter & Gamble, Toyota and Unilever. This structure can be seen as a complex form of the matrix, as it maintains coordination among products, functions and geographic areas.

In general, over the last decade, it has become increasingly clear that through the forces of globalization, competition and more demanding customers, the structure of many companies has become flatter, less hierarchical, more fluid and even virtual.

Team

One of the newest organizational structures developed in the 20th century is *team*. In small businesses, the team structure can define the entire organization. Teams can be both horizontal and vertical. While an organization is constituted as a set of people who synergize individual competencies to achieve newer dimensions, the quality of organizational structure revolves around the competencies of teams in totality. For example, every one of the Whole Foods Market stores, the largest natural-foods grocer in the US developing a focused strategy, is an autonomous profit centre composed of an average of 10 self-managed teams, while team leaders

in each store and each region are also a team. Larger bureaucratic organizations can benefit from the flexibility of teams as well. Xerox, Motorola, and DaimlerChrysler are all among the companies that actively use teams to perform tasks.

Network

Another modern structure is network. While business giants risk becoming *too clumsy to proact, act and react efficiently*[13], the new network organizations contract out any business function that can be done better or more cheaply. In essence, managers in network structures spend most of their time coordinating and controlling external relations, usually by electronic means. H&M is outsourcing its clothing to a network of 700 suppliers, more than two-thirds of which are based in low-cost Asian countries. Not owning any factories, H&M can be more flexible than many other retailers in lowering its costs, which aligns with its low-cost strategy. The potential management opportunities offered by recent advances in complex networks theory have been demonstrated including applications to product design and development, and innovation problem in markets and industries [17]

Organization development

Organization development (OD) is often defined as a planned, top-down, organization-wide effort to increase the organization's effectiveness and health. According to Warren Bennis, OD is a complex strategy intended to change the beliefs, attitudes, values, and structure of organizations so that they can better adapt to new technologies, markets, and challenges. OD is neither "anything done to better an organization" nor is it "the training function of the organization"; it is a particular kind of change process designed to bring about a particular kind of end result. OD can involve interventions in the organization's "processes," using behavioural science knowledge[1] as well as organizational reflection, system improvement, planning, and self-analysis].

Kurt Lewin (1898 - 1947) is widely recognized as the founding father of OD, although he died before the concept became current in the mid-1950s. From Lewin came the ideas of group dynamics, and action research which underpin the basic OD process as well as providing its collaborative consultant/client ethos. Institutionally, Lewin founded the "Research Center for Group Dynamics" at MIT, which moved to Michigan after his death. RCGD colleagues were among those who founded the National Training Laboratories (NTL), from which the T-group and group-based OD emerged. In the UK, working as close as was possible with Lewin and his colleagues, the Tavistock Institute of Human Relations was important in developing systems theories. Important too was the joint TIHR journal Human Relations, although nowadays the Journal of Applied Behavioral Sciences is seen as the leading OD journal.

The term "Organization Development" is often used interchangeably with Organizational effectiveness, especially when used as the name of a department within an organization. Organization Development is a growing field that is responsive to many new approaches including Positive Adult Development.

Overview

At the core of OD is the concept of organization, defined as two or more people working together toward one or more shared goal(s). Development in this context is the notion that an organization may become more effective over time at achieving its goals.

OD is a long range effort to improve organization's problem solving and renewal processes, particularly through more effective and collaborative management of organizational culture, often with the assistance of a change agent or catalyst and the use of the theory and technology of applied behavioral science.

Organization development is a "*contractual relationship* between a *change agent* and a *sponsoring organization* entered into for the purpose of *using applied behavioral science* in a *systems context* to *improve organizational performance* and the *capacity of the organization to improve itself*]

Organization development is an ongoing, systematic process to implement effective change in an organization. Organization development is known as both a field of applied behavioral science focused on understanding and managing organizational change and as a field of scientific study and inquiry. It is interdisciplinary in nature and draws on sociology, psychology, and theories of motivation, learning, and personality.

Contractual Relationship

Although neither the sponsoring organization nor the change agent can be sure at the outset of the exact nature of the problem or problems to be dealt with or how long the change agents' help will be needed, it is essential that some tentative agreement on these matters be reached. The sponsoring organization needs to know generally what the change agent's preliminary plan is, what its own commitments are in relation to personal commitments and responsibility for the program, and what the change agent's fee will be. The change agent must assure himself that the organizations, and particularly the top executives', commitment to change is strong enough to support the kind of self-analysis and personal involvement requisite to success of the program. Recognizing the uncertainties lying ahead on both sides, a termination agreement permitting either side to withdraw at any time is usually included.

Change Agent

A change agent in the sense used here is not a technical expert skilled in such functional areas as accounting, production, or finance. He is a behavioral scientist who knows how to get people in an organization involved in solving their own problems. His main strength is a comprehensive knowledge of human behavior, supported by a number of intervention techniques (to be discussed later). The change agent can be either external or internal to the organization. An internal change agent is usually a staff person who has expertise in the behavioral sciences and in the intervention technology of OD. Beck hard reports several cases in which

line people have been trained in OD and have returned to their organizations to engage in successful change assignments. The change agent may be a staff or line member of the organization who is schooled in OD theory and technique. In such a case, the "contractual relationship" is an in-house agreement that should probably be explicit with respect to all of the conditions involved except the fee.

Sponsoring Organization

The initiative for OD programs comes from an organization that has a problem. This means that top management or someone authorized by top management is aware that a problem exists and has decided to seek help in solving it. There is a direct analogy here to the practice of psychotherapy: The client or patient must actively seek help in finding a solution to his problems. This indicates a willingness on the part of the client organization to accept help and assures the organization that management is actively concerned.

Applied Behavioral Science

One of the outstanding characteristics of OD that distinguishes it from most other improvement programs is that it is based on a "helping relationship." Some believe that the change agent is not a physician to the organization's ills; that s/he does not examine the "patient," make a diagnosis, and write a prescription. Nor does s/he try to teach organizational members a new inventory of knowledge which they then transfer to the job situation. Using theory and methods drawn from such behavioral sciences as (industrial/organisational psychology, industrial sociology, communication, cultural anthropology, administrative theory, organizational behavior, economics, and political science, the change agent's main function is to help the organization define and solve its own problems. The basic method used is known as action research. This approach, which is described in detail later, consists of a preliminary diagnosis, collecting data, feedback of the data to the client, data exploration by the client group, action planning based on the data, and taking action.

Systems Context

OD deals with a total system — the organization as a whole, including its relevant environment — or with a subsystem or systems — departments or work groups — in the context of the total system. Parts of systems, for example, individuals, cliques, structures, norms, values, and products are not considered in isolation; the principle of interdependency, that is, that change in one part of a system affects the other parts, is fully recognized. Thus, OD interventions focus on the total culture and cultural processes of organizations. The focus is also on groups, since the relevant behavior of individuals in organizations and groups is generally a product of group influences rather than personality.

Improved Organizational Performance

The objective of OD is to improve the organization's capacity to handle its internal and external functioning and relationships. This would include such things as

improved interpersonal and group processes, more effective communication, enhanced ability to cope with organizational problems of all kinds, more effective decision processes, more appropriate leadership style, improved skill in dealing with destructive conflict, and higher levels of trust and cooperation among organizational members. These objectives stem from a value system based on an optimistic view of the nature of man — that man in a supportive environment is capable of achieving higher levels of development and accomplishment. Essential to organization development and effectiveness is the scientific method — inquiry, a rigorous search for causes, experimental testing of hypotheses, and review of results.

Organizational Self-Renewal

The ultimate aim of OD practitioners is to "work themselves out of a job" by leaving the client organization with a set of tools, behaviors, attitudes, and an action plan with which to monitor its own state of health and to take corrective steps toward its own renewal and development. This is consistent with the systems concept of feedback as a regulatory and corrective mechanism.

Early development

Kurt Lewin played a key role in the evolution of organization development as it is known today. As early as World War II, Lewin experimented with a collaborative change process (involving himself as consultant and a client group) based on a three-step process of planning, taking action, and measuring results. This was the forerunner of action research, an important element of OD, which will be discussed later. Lewin then participated in the beginnings of laboratory training, or T-groups, and, after his death in 1947, his close associates helped to develop survey-research methods at the University of Michigan. These procedures became important parts of OD as developments in this field continued at the National Training Laboratories and in growing numbers of universities and private consulting firms across the country.

The failure of off-site laboratory training to live up to its early promise was one of the important forces stimulating the development of OD. Laboratory training is learning from a person's "here and now" experience as a member of an ongoing training group. Such groups usually meet without a specific agenda. Their purpose is for the members to learn about themselves from their spontaneous "here and now" responses to an ambiguous hypothetical situation. Problems of leadership, structure, status, communication, and self-serving behavior typically arise in such a group. The members have an opportunity to learn something about themselves and to practice such skills as listening, observing others, and functioning as effective group members.

Modern development

In recent years, serious questioning has emerged about the relevance of OD to managing change in modern organizations. The need for "reinventing" the field has become a topic that even some of its "founding fathers" are discussing critically.

With this call for reinvention and change, scholars have begun to examine organizational development from an emotion-based standpoint. For example, deKlerk (2007) writes about how emotional trauma can negatively affect performance. Due to downsizing, outsourcing, mergers, restructuring, continual changes, invasions of privacy, harassment, and abuses of power, many employees experience the emotions of aggression, anxiety, apprehension, cynicism, and fear, which can lead to performance decreases. deKlerk (2007) suggests that in order to heal the trauma and increase performance, O.D. practitioners must acknowledge the existence of the trauma, provide a safe place for employees to discuss their feelings, symbolize the trauma and put it into perspective, and then allow for and deal with the emotional responses. One method of achieving this is by having employees draw pictures of what they feel about the situation, and then having them explain their drawings with each other. Drawing pictures is beneficial because it allows employees to express emotions they normally would not be able to put into words. Also, drawings often prompt active participation in the activity, as everyone is required to draw a picture and then discuss its meaning.

OD interventions

"Interventions" are principal learning processes in the "action" stage (see *Figure 1*) of organization development. Interventions are structured activities used individually or in combination by the members of a client system to improve their social or task performance. They may be introduced by a change agent as part of an improvement program, or they may be used by the client following a program to check on the state of the organization's health, or to effect necessary changes in its own behavior. "Structured activities" mean such diverse procedures as experiential exercises, questionnaires, attitude surveys, interviews, relevant group discussions, and even lunchtime meetings between the change agent and a member of the client organization. Every action that influences an organization's improvement program in a change agent-client system relationship can be said to be an intervention.

There are many possible intervention strategies from which to choose. Several assumptions about the nature and functioning of organizations are made in the choice of a particular strategy. Beckhard lists six such assumptions:

1. The basic building blocks of an organization are groups (teams). Therefore, the basic units of change are groups, not individuals.
2. An always relevant change goal is the reduction of inappropriate competition between parts of the organization and the development of a more collaborative condition.
3. Decision making in a healthy organization is located where the information sources are, rather than in a particular role or level of hierarchy.
4. Organizations, subunits of organizations, and individuals continuously manage their affairs against goals. Controls are interim measurements, not the basis of managerial strategy.
5. One goal of a healthy organization is to develop generally open communication, mutual trust, and confidence between and across levels.

6. People support what they help create. People affected by a change must be allowed active participation and a sense of ownership in the planning and conduct of the change.

Interventions range from those designed to improve the effectiveness of individuals through those designed to deal with teams and groups, intergroup relations, and the total organization. There are interventions that focus on task issues (what people do), and those that focus on process issues (how people go about doing it). Finally, interventions may be roughly classified according to which change mechanism they tend to emphasize: for example, feedback, awareness of changing cultural norms, interaction and communication, conflict, and education through either new knowledge or skill practice.

One of the most difficult tasks confronting the change agent is to help create in the client system a safe climate for learning and change. In a favorable climate, human learning builds on itself and continues indefinitely during man's lifetime. Out of new behavior, new dilemmas and problems emerge as the spiral continues upward to new levels. In an unfavorable climate, in contrast, learning is far less certain, and in an atmosphere of psychological threat, it often stops altogether. Unfreezing old ways can be inhibited in organizations because the climate makes employees feel that it is inappropriate to reveal true feelings, even though such revelations could be constructive. In an inhibited atmosphere, therefore, necessary feedback is not available. Also, trying out new ways may be viewed as risky because it violates established norms. Such an organization may also be constrained because of the law of systems: If one part changes, other parts will become involved. Hence, it is easier to maintain the status quo. Hierarchical authority, specialization, span of control, and other characteristics of formal systems also discourage experimentation.

The change agent must address himself to all of these hazards and obstacles. Some of the things which will help him are:

1. A real need in the client system to change
2. Genuine support from management
3. Setting a personal example: listening, supporting behavior
4. A sound background in the behavioral sciences
5. A working knowledge of systems theory
6. A belief in man as a rational, self-educating being fully capable of learning better ways to do things.

A few examples of interventions include team building, coaching, Large Group Interventions, mentoring, performance appraisal, downsizing, TQM, and leadership development.

Organizational culture

Organizational culture is an idea in the field of Organizational studies and management which describes the psychology, attitudes, experiences, beliefs and values (personal and cultural values) of an organization. It has been defined as "the specific collection of values and norms that are shared by people and groups in an

organization and that control the way they interact with each other and with stakeholders outside the organization."

This definition continues to explain **organizational values** also known as "beliefs and ideas about what kinds of goals members of an organization should pursue and ideas about the appropriate kinds or standards of behavior organizational members should use to achieve these goals. From organizational values develop organizational norms, guidelines or expectations that prescribe appropriate kinds of behavior by employees in particular situations and control the behavior of organizational members towards one another."

Organizational culture is not the same as **corporate culture**. It is wider and deeper concepts, something that an organization 'is' rather than what it 'has'

Corporate culture is the total sum of the values, customs, traditions and meanings that make a company unique. Corporate culture is often called "the character of an organization" since it embodies the vision of the company's founders. The values of a corporate culture influence the ethical standards within a corporation, as well as managerial behavior.

Senior management may try to determine a *corporate culture*. They may wish to impose corporate values and standards of behavior that specifically reflect the objectives of the organization. In addition, there will also be an extant internal culture within the workforce. Work-groups within the organization have their own behavioral quirks and interactions which, to an extent, affect the whole system. Roger Harrison's four-culture typology, and adapted by Charles Handy, suggests that unlike organizational culture, corporate culture can be 'imported'. For example, computer technicians will have expertise, language and behaviors gained independently of the organization, but their presence can influence the culture of the organization as a whole.

Strong/weak cultures

Strong culture is said to exist where staff respond to stimulus because of their alignment to organizational values. In such environments, strong cultures help firms operate like well-oiled machines, cruising along with outstanding execution and perhaps minor tweaking of existing procedures here and there.

Conversely, there is **weak culture** where there is little alignment with organizational values and control must be exercised through extensive procedures and bureaucracy.

Where culture is strong—people do things because they believe it is the right thing to do—there is a risk of another phenomenon, Groupthink. "Groupthink" was described by Irving L. Janis. He defined it as "...a quick and easy way to refer to a mode of thinking that people engage when they are deeply involved in a cohesive ingroup, when members' strivings for unanimity override their motivation to realistically appraise alternatives of action." This is a state where people, even if they have different ideas, do not challenge organizational thinking, and therefore there is a

reduced capacity for innovative thoughts. This could occur, for example, where there is heavy reliance on a central charismatic figure in the organization, or where there is an evangelical belief in the organization's values, or also in groups where a friendly climate is at the base of their identity (avoidance of conflict). In fact group think is very common, it happens all the time, in almost every group. Members that are defiant are often turned down or seen as a negative influence by the rest of the group, because they bring conflict.

Innovative organizations need individuals who are prepared to challenge the status quo—be it groupthink or bureaucracy, and also need procedures to implement new ideas effectively.

Types of organizational cultures

- **The Tough-Guy Macho Culture**. Feedback is quick and the rewards are high. This often applies to fast moving financial activities such as brokerage, but could also apply to a police force, or athletes competing in team sports. This can be a very stressful culture in which to operate.
- **The Work Hard/Play Hard Culture** is characterized by few risks being taken, all with rapid feedback. This is typical in large organizations, which strive for high quality customer service. It is often characterized by team meetings, jargon and buzzwords.
- **The Bet your Company Culture**, where big stakes decisions are taken, but it may be years before the results are known. Typically, these might involve development or exploration projects, which take years to come to fruition, such as oil prospecting or military aviation.
- **The Process Culture** occurs in organizations where there is little or no feedback. People become bogged down with how things are done not with what is to be achieved. This is often associated with bureaucracies. While it is easy to criticize these cultures for being overly cautious or bogged down in red tape, they do produce consistent results, which is ideal in, for example, public services.

- A **Power Culture** which concentrates power among a few. Control radiates from the center like a web. Power Cultures have few rules and little bureaucracy; swift decisions can ensue.
- In a **Role Culture**, people have clearly delegated authorities within a highly defined structure. Typically, these organizations form hierarchical bureaucracies. Power derives from a person's position and little scope exists for expert power.
- By contrast, in a **Task Culture**, teams are formed to solve particular problems. Power derives from expertise as long as a team requires expertise. These cultures often feature the multiple reporting lines of a matrix structure.
- A **Person Culture** exists where all individuals believe themselves superior to the organization. Survival can become difficult for such organizations, since the concept of an organization suggests that a group of like-minded individuals pursue the organizational goals. Some professional partnerships can operate as person cultures, because each partner brings a particular expertise and clientele to the firm.

The Blame culture This culture cultivates distrust and fear, people blame each other to avoid being reprimanded or put down, this results in no new ideas or personal initiative because people don't want to risk being wrong.

Multi-directional culture this culture cultivates minimized cross-department communication and cooperation. Loyalty is only to specific groups (departments). Each department becomes a clique and is often critical of other departments which in turn creates lots of gossip. The lack of cooperation and Multi-Direction is manifested in the organization's inefficiency.

Live and let live culture this culture is Complacency, it manifests Mental Stagnation and Low Creativity. People here have little future vision and have given up their passion. There is average cooperation and communication, and things do work, but they do not grow. People have developed their personal relationships and decided who to stay away from, there is not much left to learn.

Brand congruent culture People in this culture believe in the product or service of the organization, they feel good about what their company is trying to achieve and cooperate to achieve it. People here are passionate and seem to have similar goals in the organisation. They use personal resources to actively solve problems and while they don't always accept the actions of management or others around them, they see their job as important. Most everyone in this culture is operating at the level of Group.

Leadership enriched culture People view the organization as an extension of themselves, they feel good about what they personally achieve through the organization and have exceptional Cooperation. Individual goals are aligned with the goals of the organization and people will do what it takes to make things happen. As a group, the organization is more like family providing personal fulfillment which often transcends ego so people are consistently bringing out the best in each other. In this culture, Leaders do not develop followers, but develop other leaders. Most everyone in this culture is operating at the level of Organization.

• Constructive Cultures, in which members are encouraged to interact with people and approach tasks in ways that help them meet their higher-order satisfaction needs. • Passive/Defensive Cultures, in which members believe they must interact with people in ways that will not threaten their own security. • Aggressive/Defensive Cultures, in which members are expected to approach tasks in forceful ways to protect their status and security.

The Constructive Cluster, this includes cultural norms that reflect expectations for members to interact with others and approach tasks in ways that will help them meet their higher order satisfaction needs for affiliation, esteem, and self-actualization.

The four cultural norms in this cluster are:

• Achievement • Self-Actualizing • Humanistic-Encouraging • Affiliative

Organizations with Constructive cultures encourage members to work to their full potential, resulting in high levels of motivation, satisfaction, teamwork, service quality, and sales growth. Constructive norms are evident in environments where quality is valued over quantity, creativity is valued over conformity, cooperation is believed to lead to better results than competition, and effectiveness is judged at the system level rather than the component level. These types of cultural norms are consistent with (and supportive of) the objectives behind empowerment, total quality management, transformational leadership, continuous improvement, reengineering, and learning organizations.

The Passive/Defensive Cluster Norms that reflect expectations for members to interact with people in ways that will not threaten their own security are in the Passive/Defensive Cluster.

The four Passive/Defensive cultural norms are:

• Approval • Conventional • Dependent • Avoidance

In organizations with Passive/Defensive cultures, members feel pressured to think and behave in ways that are inconsistent with the way they believe they should in order to be effective. People are expected to please others (particularly superiors) and avoid interpersonal conflict. Rules, procedures, and orders are more important than personal beliefs, ideas, and judgment. Passive/Defensive cultures experience a lot of unresolved conflict and turnover, and organizational members report lower levels of motivation and satisfaction.

The Aggressive/Defensive Cluster the Aggressive/Defensive Cluster includes cultural norms that reflect expectations for members to approach tasks in ways that protect their status and security.

The Aggressive/Defensive cultural norms are:

• Oppositional • Power • Competitive • Perfectionistic

Organizations with Aggressive/Defensive cultures encourage or require members to appear competent, controlled, and superior. Members who seek assistance, admit shortcomings, or concede their position are viewed as incompetent or weak. These organizations emphasize finding errors, weeding out “mistakes,” and encouraging members to compete against each other rather than competitors. The short-term gains associated with these strategies are often at the expense of long-term growth.

Elements used to describe organizational culture

- **The Paradigm**: What the organization is about; what it does; its mission; its values.
- **Control Systems**: The processes in place to monitor what is going on. Role cultures would have vast rulebooks. There would be more reliance on individualism in a power culture.

- **Organizational Structures**: Reporting lines, hierarchies, and the way that work flows through the business.
- **Power Structures**: Who makes the decisions, how widely spread is power, and on what is power based?
- **Symbols**: These include organizational logos and designs, but also extend to symbols of power such as parking spaces and executive washrooms.
- **Rituals and Routines**: Management meetings, board reports and so on may become more habitual than necessary.
- **Stories and Myths**: build up about people and events, and convey a message about what is valued within the organization.

These elements may overlap. Power structures may depend on control systems, which may exploit the very rituals that generate stories which may not be true.

Entrepreneurial culture

Stephen McGuiredefined and validated a model of organizational culture that predicts revenue from new sources. An Entrepreneurial Organizational Culture (EOC) is a system of shared values, beliefs and norms of members of an organization, including valuing creativity and tolerance of creative people, believing that innovating and seizing market opportunities are appropriate behaviors to deal with problems of survival and prosperity, environmental uncertainty, and competitors' threats, and expecting organizational members to behave accordingly.

Elements of Entrepreneurial Culture

- People and enpowerment focused
- Value creation through innovation and change
- Attention to the basics
- Hands-on management
- Doing the right thing
- Freedom to grow and to fail
- Commitment and personal responsibility
- Emphasis on the future

Organizational communication perspective on culture

The organizational communication perspective on culture is divided into three areas:

- **Traditionalism**: Views culture through objective things such as stories, rituals, and symbols
- **Interpretivism**: Views culture through a network of shared meanings (organization members sharing subjective meanings)
- **Critical-Interpretivism**: Views culture through a network of shared meanings as well as the power struggles created by a similar network of competing meanings

There are many different types of communication that contribute in creating an organizational culture:

- **Metaphors** such as comparing an organization to a machine or a family reveal employees' shared meanings of experiences at the organization.
- **Stories** can provide examples for employees of how to or not to act in certain situations.
- **Rites and ceremonies** combine stories, metaphors, and symbols into one. Several different kinds of rites that affect organizational culture:
    - **Rites of passage**: employees move into new roles
    - **Rites of degradation**: employees have power taken away from them
    - **Rites of enhancement**: public recognition for an employee's accomplishments
    - **Rites of renewal**: improve existing social structures
    - **Rites of conflict reduction**: resolve arguments between certain members or groups
    - **Rites of integration**: reawaken feelings of membership in the organization
- **Reflexive comments** are explanations, justifications, and criticisms of our own actions. This includes:
    - **Plans**: comments about anticipated actions
    - **Commentaries**: comments about action in the present
    - **Accounts**: comments about an action or even that has already occurred

  Such comments reveal interpretive meanings held by the speaker as well as the social rules they follow.

- **Fantasy Themes** are common creative interpretations of events that reflect beliefs, values, and goals of the organization. They lead to rhetorical visions, or views of the organization and its environment held by organization members.

Schema

Schemata (plural of schema) are knowledge structures a person forms from past experiences allowing them to respond to similar events more efficiently in the future by guiding the processing of information. Schemata are created through interaction with others and thus inherently involve communication.

Stanley G. Harris argues that five categories of in-organization schemata are necessary for organizational culture:

- **Self-in-organization schemata**: a person's concept of themselves within the context of the organization, including their personality, roles, and behavior
- **Person-in-organization schemata**: a person's memories, impressions and expectations of other individuals within the organization
- **Organization schemata**: subset of person schemata, a person's generalized perspective on others as a whole in the organization
- **Object/concept-in-organization schemata**: knowledge an individual has of organization aspects other than other people
- **Event-in-organization schemata**: a person's knowledge of social events within an organization

All of these categories together represent a person's knowledge of an organization. Organizational culture is created when the schemata's of individuals within an organization come to resemble each other. This is primarily done through organizational communication as individuals directly or indirectly share knowledge and meanings.

Mergers, organizational culture, and cultural leadership

One of the biggest obstacles in the way of the merging of two organizations is organizational culture. Each organization has its own unique culture and most often, when brought together, these cultures clash. When mergers fail employees point to issues such as identity, communication problems, human resources problems, ego clashes, and inter-group conflicts, which all fall under the category of "cultural differences". One way to combat such difficulties is through cultural leadership. Organizational leaders must also be cultural leaders and help facilitate the change from the two old cultures into the one new culture. This is done through cultural innovation followed by cultural maintenance.

- **Cultural innovation** includes:
  - **Creating** a new culture: recognizing past cultural differences and setting realistic expectations for change
  - **Changing** the culture: weakening and replacing the old cultures
- **Cultural maintenance** includes:
  - **Integrating** the new culture: reconciling the differences between the old cultures and the new one
  - **Embodying** the new culture: Establishing, affirming, and keeping the new culture

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Course Name	: Elements of Human resource Management

Course Description

The Course deals with comprehensive analysis of Human Resource Management (HRM), its features, goals, and various theories behind HRM, workforce planning, recruitment in HRM, training and development, skills management, relevance of time & skills Management in HRM, Wage and Salaries, Payroll, Employee benefits, Performance Appraisal (PA).

Course Objectives

- To help students get exposed to theoretical perspectives of managing human resources in Organizations.
- To help students develop knowledge to analyze different processes involved in recruiting employees in various work places.
- To provide students with opportunities of getting exposed to different motivational theories most applicable in Human resource management.

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- Features of HRM
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- Theories of HRM
- Careers and education in HRM
- Functions of HRM

Workforce Planning

- Importance of workforce planning
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- Environment scan
- Current workforce profile
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- Definition of recruitment
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- Understanding of skills management in HRM
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- Employees who benefit
- Organization executives
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Wages and Salaries

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- Determinants of wage rates
- Case study; wages in the United States
- Salaried employment in the 20th Century
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- Categories of salaried workers exempted from over time provisions

Time Management

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- Eisenhower method used to manage time in HRM
- Time management approaches
- Time management and related concepts
- Personal time management
- How we use time

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- Meaning of task list
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Payroll

- Meaning of payroll
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Employee benefits

- Meaning employee benefits
- Case study: Employee benefits in the United States, U.K
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Performance Appraisal (PA)

- Meaning of Performance Appraisal
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- Popular methods used to measure PA
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Mode of delivery Face to face lectures

Assessment
Course work 40%
Exams 60%
Total Mark 100%

Definition

Human Resource Management (HRM) is the function within an organization that focuses on recruitment of, management of, and providing direction for the people who work in the organization. Human Resource Management can also be performed by line managers.

Human Resource Management is the organizational function that deals with issues related to people such as compensation, hiring, performance management, organization development, safety, wellness, benefits, employee motivation, communication, administration, and training.

INTRODUCTION

Human resource management (HRM) is the strategic and coherent approach to the management of an organization's most valued assets - the people working there who individually and collectively contribute to the achievement of the objectives of the business. The terms "human resource management" and "human resources" (HR) have largely replaced the term "personnel management" as a description of the processes involved in managing people in organizations. In simple sense, HRM means employing people, developing their resources, utilizing, maintaining and compensating their services in tune with the job and organizational requirement.

Features

Its features include:

- Organizational management
- Personnel administration
- Manpower management
- Industrial managementBut these traditional expressions are becoming less common for the theoretical discipline. Sometimes even employee and industrial relations are confusingly listed as synonyms although these normally refer to the relationship between management and workers and the behavior of workers in companies.

The theoretical discipline is based primarily on the assumption that employees are individuals with varying goals and needs, and as such should not be thought of as basic business resources, such as trucks and filing cabinets. The field takes a

positive view of workers, assuming that virtually all wish to contribute to the enterprise productively, and that the main obstacles to their endeavors are lack of knowledge, insufficient training, and failures of process.

HRM is seen by practitioners in the field as a more innovative view of workplace management than the traditional approach. Its techniques force the managers of an enterprise to express their goals with specificity so that they can be understood and undertaken by the workforce, and to provide the resources needed for them to successfully accomplish their assignments. As such, HRM techniques, when properly practiced, are expressive of the goals and operating practices of the enterprise overall. HRM is also seen by many to have a key role in risk reduction within organizations .Synonyms such as *personnel management* are often used in a more restricted sense to describe activities that are necessary in the recruiting of a workforce, providing its members with payroll and benefits, and administrating their work-life needs. So if we move to actual definitions, Torrington and Hall (1987) define personnel management as being:

“a series of activities which: first enable working people and their employing organisations to agree about the objectives and nature of their working relationship and, secondly, ensures that the agreement is fulfilled" (p. 49).

While Miller (1987) suggests that HRM relates to:

".....those decisions and actions which concern the management of employees at all levels in the business and which are related to the implementation of strategies directed towards creating and sustaining competitive advantage" (p. 352).

Academic theory

The goal of human resource management is to help an organization to meet strategic goals by attracting, and maintaining employees and also to manage them effectively. The key word here perhaps is "fit", i.e. a HRM approach seeks to ensure a fit between the management of an organization's employees, and the overall strategic direction of the company (Miller, 1989).

The basic premise of the academic theory of HRM is that humans are not machines, therefore we need to have an interdisciplinary examination of people in the workplace. Fields such as psychology, industrial engineering, industrial, Legal/Paralegal Studies and organizational psychology, industrial relations, sociology, and critical theories: postmodernism, post-structuralism play a major role. Many colleges and universities offer bachelor and master degrees in Human Resources Management.

One widely used scheme to describe the role of HRM, developed by Dave Ulrich, defines 4 fields for the HRM function:

- Strategic business partner
- Change management
- Employee champion

- Administration

However, many HR functions these days struggle to get beyond the roles of administration and employee champion, and are seen rather as reactive as strategically proactive partners for the top management. In addition, HR organizations also have the difficulty in proving how their activities and processes add value to the company. Only in the recent years HR scholars and HR professionals are focusing to develop models that can measure if HR adds value.

Critical Academic Theory

Postmodernism plays an important part in Academic Theory and particularly in Critical Theory. Indeed Karen Legge in 'Human Resource Management: Rhetorics and Realities' poses the debate of whether HRM is a modernist project or a postmodern discourse (Legge 2004). In many ways, critically or not, many writers contend that HRM itself is an attempt to move away from the modernist traditions of personnel (man as machine) towards a postmodernist view of HRM (man as individuals). Critiques include the notion that because 'Human' is the subject we should recognize that people are complex and that it is only through various discourses that we understand the world. Man is not Machine, no matter what attempts are made to change it i.e. Fordism / Taylorism, McDonaldisation (Modernism).

Critical Theory also questions whether HRM is the pursuit of "attitudinal shaping" (Wilkinson 1998), particularly when considering empowerment, or perhaps more precisely pseudo-empowerment - as the critical perspective notes. Many critics note the move away from Man as Machine is often in many ways, more a Linguistic (discursive) move away than a real attempt to recognise the Human in Human Resource Management.

Critical Theory, in particular postmodernism (poststructualism), recognises that because the subject is people in the workplace, the subject is a complex one, and therefore simplistic notions of 'the best way' or a unitary perspectives on the subject are too simplistic. It also considers the complex subject of power, power games, and office politics. Power in the workplace is a vast and complex subject that cannot be easily defined. This leaves many critics to suggest that Management 'Gurus', consultants, 'best practice' and HR models are often overly simplistic, but in order to sell an idea, they are simplified, and often lead Management as a whole to fall into the trap of oversimplifying the relationship.

Business practice

Human resources management comprises several processes. Together they are supposed to achieve the above mentioned goal. These processes can be performed in an HR department, but some tasks can also be outsourced or performed by line-managers or other departments. When effectively integrated they provide significant economic benefit to the company. Workforce planning

- Recruitment (sometimes separated into attraction and selection)

- Induction and Orientation
- Skills management
- Training and development
- Personnel administration
- Compensation in wage or salary
- Time management
- Travel management (sometimes assigned to accounting rather than HRM)
- Payroll (sometimes assigned to accounting rather than HRM)
- Employee benefits administration
- Personnel cost planning
- Performance appraisal

Careers and education

The sort of careers available in HRM are varied. There are generalist HRM jobs such as human resource assistant. There are careers involved with employment, recruitment and placement and these are usually conducted by interviewers, EEO (Equal Employment Opportunity) specialists or college recruiters. Training and development specialism is often conducted by trainers and orientation specialists. Compensation and benefits tasks are handled by compensation analysts, salary administrators, and benefits administrators.

Several universities offer programs of study pertaining to HRM and broader fields. Cornell University created the world's first school for college-level study in HRM (ILR School).[9]University of Illinois at Urbana-Champaign also now has a school dedicated to the study of HRM, while several business schools also house a center or department dedicated to such studies; e.g., Michigan State University, Ohio State University, and Purdue University.

Professional organizations

Professional organizations in HRM include the Society for Human Resource Management, the Australian Human Resources Institute (AHRI), the Chartered Institute of Personnel and Development (CIPD), the International Public Management Association for HR (IPMA-HR), Management Association of Nepal (MAN) and the International Personnel Management Association of Canada (IPMA-Canada), Human Capital Institute (HCI)

Functions

The Human Resources Management (HRM) function includes a variety of activities, and key among them is deciding what staffing needs you have and whether to use independent contractors or hire employees to fill these needs, recruiting and training the best employees, ensuring they are high performers, dealing with performance issues, and ensuring your personnel and management practices conform to various regulations. Activities also include managing your approach to employee benefits and compensation, employee records and personnel policies. Usually small businesses (for-profit or nonprofit) have to carry out these activities themselves because they can't yet afford part- or full-time help. However, they should always

ensure that employees have -- and are aware of -- personnel policies which conform to current regulations. These policies are often in the form of employee manuals, which all employees have.

Note that some people distinguish a difference between HRM (a major management activity) and HRD (Human Resource Development, a profession). Those people might include HRM in HRD, explaining that HRD includes the broader range of activities to develop personnel inside of organizations, including, eg, career development, training, organization development, etc.

There is a long-standing argument about where HR-related functions should be organized into large organizations, eg, "should HR be in the Organization Development department or the other way around?"

The HRM function and HRD profession have undergone tremendous change over the past 20-30 years. Many years ago, large organizations looked to the "Personnel Department," mostly to manage the paperwork around hiring and paying people. More recently, organizations consider the "HR Department" as playing a major role in staffing, training and helping to manage people so that people and the organization are performing at maximum capability in a highly fulfilling manner.

Karen et al (2004). ***Human Resource Management***

2. Workforce planning

Strategic Workforce Planning is the business process for ensuring that an organization has suitable access to talent to ensure future business success. Access to talent includes considering all potential access sources (employment, contracting out, partnerships, changing business activities to modify the types of talent required, etc. By talent is meant the skills, knowledge, predisposition and ability to undertake required activities including decisions making. Strategic Planning considers the business risks concerning insufficient, disrupted, miss-deployed talent on the organization's business priorities.

Strategic Workforce Planning is analogous to the treasurer role which is concerned with ensuring the organization has suitable access to working capital. This role also looks at multiple sources for access and similar risks to those mentioned above.

One of the more restrictive and potentially dangerous assumptions is that Strategic Planning is only about talent in the form of employees. Hiring is a strategy for accessing talent and will often be the superior one. However, the use of employees to meet talent needs carries with it unique risks that can be mitigated using alternative access sourcing arrangements. Regardless of the access source used, insightful assessment of the strategy's attendant business risk is prudent.

The process for starting out Strategic Workforce Planning is link with the organization's strategy. This means identifying the critical talent needs that if not

met can materially adversely impact business success. Once the business risks are fully appreciated then attention turns to schedule and timing. Assessing current internal capability and assessing its relative position when it will be called upon in the future. Speculating on future sourcing options and identifying the preferred sourcing option. Implementation and execution follow. Attention to periodically reviewing the "sanity" of the current plan is prudent.

4.5Closing the Gaps

Workforce analytics approach

The focus is to analyze current and historical employee data to identify key relationships among variables and use this to provide insight into the workforce they need for the future..

Modeling approach

This approach incorporates forecasting and scenario planning. Forecasting uses quantitative data to create forecasts incorporating multiple what-if and modeling the future. Scenario Planning being the more useful tool where there are uncertainties, therefore incorporating quantitative and qualitative.

Segmentation approach

Breaking the workforce into segments along the lines of their jobs and determining relevance to strategic intent. Provides a technique for prioritizing.

Steps in Workforce Planning

Though there is no definitive 'Start here' activity for any of the approaches to Strategic Workforce Planning, there are five fundamentals activities that most Workforce Plan models have:

- Environment Scan
- Current Workforce Profile
- Future Workforce View
- Analysis and Targeted Future
- Closing the gaps

Environment Scan

Environment Scanning is a form of business intelligence. In the context of Workforce Planning it is used to identify the set of facts or circumstances that surround a workforce situation or event.

Current Workforce Profile

Current State is a profile of the demand and supply factors both internally and externally of the workforce the organization has 'today'.

Future Workforce View

Future View is determining the organization's needs considering the emerging trends and issues identified during the Environment Scanning.

Future View is often where the different approaches identified above are applied: Quantitative futuring: understanding the future you are currently tracking to by forecasting; Qualitative futuring: scenario planning potential alternative futures in terms of capabilities and demographics to deliver the business strategy.

Analysis and Targeted Future

Qualitative and quantitative futuring creates the content for an organizational unit to analyse and identify critical elements. As the critical elements are identified the Targeted Future begins to take form. The targeted future is the future that the organization is going to target as being the best fit in terms of business strategy and is achievable given the surrounding factors (internal/external, supply/demand).

Closing the Gaps

Closing the gaps is about the people management (human resources) programs and practices that deliver the workforce needed for today and tomorrow. The process is about determining appropriate actions to close the gaps and therefore deliver the targeted future.

There are 8 key areas that closing the Gaps needs to focus on -

Resourcing, Learning and Development, Remuneration, Industrial Relations, Recruitment, Retention, Knowledge Management, Job design.

3. Recruitment

Recruitment refers to the process of screening, and selecting qualified people for a job at an organization or firm, or for a vacancy in a volunteer-based some components of the recruitment process, mid- and large-size organizations and companies often retain professional recruiters or outsource some of the process to recruitment agencies. External recruitment is the process of attracting and selecting employees from outside the organization.

The recruitment industry has four main types of agencies: employment agencies, recruitment websites and job search engines, "headhunters" for executive and professional recruitment, and in-house recruitment. The stages in recruitment include sourcing candidates by advertising or other methods, and screening and selecting potential candidates using tests or interviews.

Agency types

The recruitment industry has four main types of agencies. Their recruiters aim to channel candidates into the hiring organizations application process. As a general rule, the agencies are paid by the companies, not the candidates.

Traditional Agency

Also known as a employment agencies, recruitment agencies have historically had a physical location. A candidate visits a local branch for a short interview and an assessment before being taken onto the agency's books. Recruitment consultants then work to match their pool of candidates to their clients' open positions. Suitable candidates are short-listed and put forward for an interview with potential employers on a temporary ("temp") or permanent ("perm") basis.

Compensation to agencies take several forms, the most popular:

- A contingency fee paid by the company when a recommended candidate accepts a job with the client company (typically 20%-30% based and calculated of the candidates first-year base salary – though fees as low as 12.5% can be found online), which usually has some form of guarantee (30–90 days standard), should the candidate fail to perform and is terminated within a set period of time (refundable fully or prorated)
- An advance payment that serves as a retainer, also paid by the company, non-refundable paid in full depending on outcome and success (eg. 30% up front, 30% in 90 days and the remainder once a search is completed). This form of compensation is generally reserved for high level executive search/headhunters
- Hourly Compensation for temporary workers and projects. A pre-negotiated hourly fee, in which the agency is paid and pays the applicant as a consultant for services as a third party. Many contracts allow a consultant to transition to a full-time status upon completion of a certain number of hours with or without a conversion fee.

Headhunters

A "headhunter" is industry term for a third-party recruiter who seeks out candidates, often when normal recruitment efforts have failed. Headhunters are generally considered more aggressive than in-house recruiters or may have preexisting industry experience and contacts. They may use advanced sales techniques, such as initially posing as clients to gather employee contacts, as well as visiting candidate offices. They may also purchase expensive lists of names and job titles, but more often will generate their own lists. They may prepare a candidate for the interview, help negotiate the salary, and conduct closure to the search. They are frequently members in good standing of industry trade groups and associations. Headhunters will often attend trade shows and other meetings nationally or even internationally that may be attended by potential candidates and hiring managers.

Headhunters are typically small operations that make high margins on candidate placements (sometimes more than 30% of the candidate's annual compensation). Due to their higher costs, headhunters are usually employed to fill senior management and executive level roles. Headhunters are also used to recruit very specialized individuals; for example, in some fields, such as emerging scientific research areas, there may only be a handful of top-level professionals who are active in the field. In this case, since there are so few qualified candidates, it makes more

sense to directly recruit them one-by-one, rather than advertise internationally for candidates. While in-house recruiters tend to attract candidates for specific jobs, headhunters will both attract candidates and actively seek them out as well. To do so, they may network, cultivate relationships with various companies, maintain large databases, purchase company directories or candidate lists, and cold call prospective recruits

In-House Recruitment

Larger employers tend to undertake their own in-house recruitment, using their human resources department, front-line hiring managers and recruitment personnel who handle targeted functions and populations. In addition to coordinating with the agencies mentioned above, in-house recruiters may advertise job vacancies on their own websites, coordinate internal employee referrals, work with external associations, trade groups and/or focus on campus graduate recruitment. While job postings are common, networking is by far the most significant approach when reaching out to fill positions. Alternatively a large employer may choose to outsource all or some of their recruitment process (recruitment process outsourcing).

Passive Candidate Research Firms / Sourcing Firms

These firms provide competitive passive candidate intelligence to support company's recruiting efforts. Normally they will generate varying degrees of candidate information from those people currently engaged in the position a company is looking to fill. These firms usually charge a per hour fee or by candidate lead. Many times this uncovers names that cannot be found with other methods and will allow internal recruiters the ability to focus their efforts solely on recruiting.

Process

Job Analysis

The proper start to a recruitment effort is to perform a job analysis, to document the actual or intended requirement of the job to be performed. This information is captured in a job description and provides the recruitment effort with the boundaries and objectives of the search. Oftentimes a company will have job descriptions that represent a historical collection of tasks performed in the past. These job descriptions need to be reviewed or updated prior to a recruitment effort to reflect present day requirements. Starting a recruitment with an accurate job analysis and job description insures the recruitment effort starts off on a proper track for success.

Sourcing

Sourcing involves 1) advertising, a common part of the recruiting process, often encompassing multiple media, such as the Internet, general newspapers, job ad newspapers, professional publications, window advertisements, job centers, and campus graduate recruitment programs; and 2) recruiting research, which is the proactive identification of relevant talent who may not respond to job postings and other recruitment advertising methods done in #1. This initial research for so-called passive prospects, also called name-generation, results in a list of prospects who can then be contacted to solicit interest, obtain a resume/CV, and be screened (see below).

Screening and selection

Suitability for a job is typically assessed by looking for skills, e.g. communication, typing, and computer skills. Qualifications may be shown through résumés, job applications, interviews, educational or professional experience, the testimony of references, or in-house testing, such as for software knowledge, typing skills, numeracy, and literacy, through psychological tests or employment testing. In some countries, employers are legally mandated to provide equal opportunity in hiring. Business management software is used by many recruitment agencies to automate the testing process. Many recruiters and agencies are using an Applicant tracking system to perform many of the filtering tasks, along with software tools for psychometric testing

On boarding

"On boarding" is a term which describes the introduction or "induction" process. A well-planned introduction helps new employees become fully operational quickly and is often integrated with a new company and environment. On boarding is included in the recruitment process for retention purposes. Many companies have on boarding campaigns in hopes to retain top talent that is new to the company, campaigns may last anywhere from 1 week to 6 months.

Internet Recruitment / Websites

Such sites have two main features: job boards and a résumé/curriculum vitae (CV) database. Job boards allow member companies to post job vacancies. Alternatively, candidates can upload a résumé to be included in searches by member companies. Fees are charged for job postings and access to search resumes. Since the late 1990s, the recruitment website has evolved to encompass end-to-end recruitment. Websites capture candidate details and then pool them in client accessed candidate management interfaces (also online). Key players in this sector provide e-recruitment software and services to organizations of all sizes and within numerous industry sectors, who want to e-enable entirely or partly their recruitment process in order to improve business performance.

The online software provided by those who specialize in online recruitment helps organizations attract, test, recruit, employ and retain quality staff with a minimal amount of administration. Online recruitment websites can be very helpful to find candidates that are very actively looking for work and post their resumes online, but they will not attract the "passive" candidates who might respond favorably to an opportunity that is presented to them through other means. Also, some candidates who are actively looking to change jobs are hesitant to put their resumes on the job boards, for fear that their current companies, co-workers, customers or others might see their resumes.

Job search engines

The emergence of meta-search engines, allow job-seekers to search across multiple websites. Some of these new search engines index and list the advertisements of

traditional job boards. These sites tend to aim for providing a "one-stop shop" for job-seekers. However, there are many other job search engines which index pages solely from employers' websites, choosing to bypass traditional job boards entirely. These vertical search engines allow job-seekers to find new positions that may not be advertised on traditional job boards, and online recruitment websites.

5. Training and Development

In the field of human resource management, *training and development* is the field concerned with organizational activity aimed at bettering the performance of individuals and groups in organizational settings. It has been known by several names, including **employee development**, **human resource development**, and **learning and development.**

Harrison observes that the name was endlessly debated by the Chartered Institute of Personnel and Development during its review of professional standards in 1999/2000. "Employee Development" was seen as too evocative of the master-slave relationship between employer and employee for those who refer to their employees as "partners" or "associates" to be comfortable with. "Human Resource Development" was rejected by academics, who objected to the idea that people were "resources" — an idea that they felt to be demeaning to the individual. Eventually, the CIPD settled upon "Learning and Development", although that was itself not free from problems, "learning" being an overgeneral and ambiguous name. Moreover, the field is still widely known by the other names

Training and development encompasses three main activities: training, education, and development. Garavan, Costine, and Heraty, of the Irish Institute of Training and Development, note that these ideas are often considered to be synonymous. However, to practitioners, they encompass three separate, although interrelated, activities

Training; this activity is both focused upon, and evaluated against, the job that an individual currently hold

Education; this activity focuses upon the jobs that an individual may potentially hold in the future, and is evaluated against those jobs. Development; this activity focuses upon the activities that the organization employing the individual, or that the individual is part of, may partake in the future, and is almost impossible to evaluate

The "stakeholders" in training and development are categorized into several classes. The *sponsors* of training and development are senior managers. The *clients* of training and development are business planners. Line managers are responsible for coaching, resources, and performance. The *participants* are those who actually undergo the processes. The *facilitators* are Human Resource Management staff. And the *providers* are specialists in the field. Each of these groups has its own agenda

and motivations, which sometimes conflict with the agendas and motivations of the others.

The conflicts are the best part of career consequences are those that take place between employees and their bosses. The number one reason people leave their jobs is conflict with their bosses. And yet, as author, workplace relationship authority, and executive coach, Dr. John Hoover points out, "Tempting as it is, nobody ever enhanced his or her career by making the boss look stupid." Training an employee to get along well with authority and with people who entertain diverse points of view is one of the best guarantees of long-term success. Talent, knowledge, and skill alone won't compensate for a sour relationship with a superior, peer, or customer.

Planning the business process for is t Strategic Workforce ensuring that an organization has suitable access to talent to ensure future business success. Access to talent includes considering all potential access sources (employment, contracting out, partnerships, changing business activities to modify the types of talent required, etc. By talent is meant the skills, management

6. SKILLS MANAGEMENT

Skills Management is the practice of understanding, developing and deploying people and their skills. Well-implemented skills management should identify the skills that job roles require, the skills of individual employees, and any gap between the two.

The skills involved can be defined by the organization concerned, or by third party institutions. They are usually defined in terms of a skills framework, also known as a competency framework or skills matrix. This consists of a list of skills, and a grading system, with a definition of what it means to be at particular level for a given skill. (For an example of a mature skills framework, see the Skills Framework for the Information Age, a technical IT skills framework owned by a British not-for-profit organization.)

To be most useful, skills management needs to be conducted as an ongoing process, with individuals assessing and updating their recorded skill sets regularly. These updates should occur at least as frequently as employees' regular line manager reviews, and certainly when their skill sets have changed.

Skills management *systems* record the results of this process in a database, and allow analysis of the data.

In order to perform the functions of management and to assume multiple roles, managers must be skilled. Robert Katz identified three managerial skills that are essential to successful management: technical, human, and conceptual*. Technical skill involves process or technique knowledge and proficiency. Managers use the processes, techniques and tools of a specific area. Human skill involves the ability to interact effectively with people. Managers interact and cooperate with employees. Conceptual skill involves the formulation of ideas. Managers understand abstract

relationships, develop ideas, and solve problems creatively. Thus, technical skill deals with things, human skill concerns people, and conceptual skill has to do with ideas. A manager's level in the organization determines the relative importance of possessing technical, human, and conceptual skills. Top level managers need conceptual skills in order to view the organization as a whole. Conceptual skills are used in planning and dealing with ideas and abstractions. Supervisors need technical skills to manage their area of specialty. All levels of management need human skills in order to interact and communicate with other people successfully.

As the pace of change accelerates and diverse technologies converge, new global industries are being created (for example, telecommunications). Technological change alters the fundamental structure of firms and calls for new organizational approaches and management skills.

Employees who benefit

Skills management provides a structured approach to developing individual and collective skills, and gives a common vocabulary for discussing skills. As well as this general benefit, three groups of employees receive specific benefits from skills management.

Individual Employees

As a result of skills management, employees should be aware of the skills their job requires, and any skills gaps that they have. Depending on their employer, it may also result in a personal development plan (PDP) of training to bridge some or all of those skills gaps over a given period.

Line manager

Skills management enables managers to know the skill strengths and weaknesses of employees reporting to them. It can also enable them to search for employees with particular skill sets (e.g. to fill a role on a particular job.

Organization Executives
A rolled-up view of skills and skills gaps across an organization can enable its executives to see areas of skill strength and weakness. This enables them to plan for the future against the current and future abilities of staff, as well as to prioritize areas for skills development.

6. WAGES

A **wage** is compensation, usually financial, received by a worker in exchange for their labor.

Compensation in terms of wages is given to worker and compensation in terms of salary is given to employees. Compensation is a monetary benefits given to employees in returns of the services provided by them.

Determinants of wage rates

Depending on the structure and traditions of different economies around the world, wage rates are either the product of market forces (Supply and Demand), as is common in the United States, or wage rates may be influenced by other factors such as tradition, social structure and seniority, as in Japan.

Several countries have enacted a statutoryminimum wage rate that sets a price floor for certain kinds of labor.

Wages in the United States

In the United States, wages for most workers are set by market forces, or else by collective bargaining, where a labor union negotiates on the workers' behalf. Although states and cities can and sometimes do set a minimum wage, the Fair Labor Standards Act requires a minimum wage at the federal level. For certain federal or state government contacts, employers must pay the so-called prevailing wage as determined according to the Davis-Bacon Act or its state equivalent. Activists have undertaken to promote the idea of a living wage rate which would be higher than current minimum wage laws require.

6 SALARIES

Salary is a form of periodic payment from an employer to an employee, which may be specified in an employment contract. It is contrasted with piece wages, where each job, hour or other unit is paid separately, rather than on a periodic basis.

From the point of a view of running a business, salary can also be viewed as the cost of acquiring human resources for running operations, and is then termed personnel expense or salary expense. In accounting, salaries are recorded in payroll accounts.

Salaried employment in the 20th century

In the 20th century, the rise of the service economy made salaried employment even more common in developed countries, where the relative share of industrial production jobs declined, and the share of executive, administrative, computer, marketing, and creative jobs--all of which tended to be salaried--increased.

Salary and other forms of payment today

Today, the idea of a salary continues to evolve as part of a system of all the combined rewards that employers offer to employees. Salary (also now known as fixed pay) is coming to be seen as part of a "total rewards" system which includes variable pay (such as bonuses, incentive pay, and commissions), benefits and perquisites (or perks), and various other tools which help employers link rewards to an employee's measured performance.

Salaries in the U.S.

In the United States, the distinction between periodic salaries (which are normally paid regardless of hours worked) and hourly wages (meeting a minimum wage test and providing for overtime) was first codified by the Fair Labor Standards Act of 1938. At that time, five categories were identified as being "exempt" from minimum wage and overtime protections, and therefore salariable. In 1991, some computer workers were added as a sixth category. The tests for all six categories were revised effective August 23, 2004.

The six categories of salaried workers exempt from overtime provisions are:

1. Executive Employees, who hire, fire and direct others
2. Administrative Employees, exercising discretion as part of office work
3. Learned Professional Employees, such as medical practitioners, lawyers, engineers, dentists, veterinarians, and accountants
4. *Creative Professional Employees* in an artistic field
5. Computer Employees, who must meet certain threshold tests
6. Outside Sales Employees, who must work away from an employer's place of business? Some of the 2004 exemption tests depend on being paid a weekly salary of greater than $455, even though no *hourly* minimum wage is required or maximum number of hours worked is established.

General rule for comparing periodic salaries to hourly wages is based on a standard 40 hour work week with 50 weeks per year (minus two weeks for vacation)

7. Time management

The Eisenhower Method

Refers to a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, projects and goals. This set encompass a wide scope of activities, and these include planning, allocating, setting goals, delegation, analysis of time spent, monitoring, organizing, scheduling, and prioritizing. Initially time management referred to just business or work activities, but eventually the term broadened to include personal activities also. A time management system is a designed combination of processes, tools and techniques.

Some authors (such as Stephen R. Covey) offered a categorization scheme for the hundreds of time management approaches that they reviewed

- First generation: reminders based on clocks and watches, but with computer implementation possible; can be used to alert a person when a task is to be done.
- Second generation: planning and preparation based on calendar and appointment books; includes setting goals.
- Third generation: planning, prioritizing, controlling (using a personal organizer, other paper-based objects, or computer or PDA-based systems) activities on a daily basis. This approach implies spending some time in clarifying values and priorities.
- Fourth generation: being efficient and proactive using any of the above tools; places goals and roles as the controlling element of the system and favors importance over urgency.

Some of the recent general arguments related to "time" and "management" point out that the term "time management" is misleading and that the concept should actually imply that it is "the management of our own activities, to make sure that they are accomplished within the available or allocated time, which is an unmanageable continuous resource".

Time management literature paraphrased: "Get Organized" - paperwork and task triage "Protect Your Time" - insulate, isolate, delegate "set gravitational goals" - that attract actions automatically "Achieve through Goal management Goal Focus" - motivational emphasis

- "Work in Priority Order" - set goals and prioritize
- "Use Magical Tools to Get More Out of Your Time" - depends on when written
- "Master the Skills of Time Management"
- "Go with the Flow" - natural rhythms, Eastern philosophy
- "Recover from Bad Time Habits" - recovery from underlying psychological problems, e.g. procrastination

Time management and related concepts

Time management has been considered as subsets of different concepts such as:

- Project management. Time Management, can be considered as a project management subset, and is more commonly known as project planning and project scheduling. Time Management is also been identified as one of the core functions identified in project management .
- Attention management: Attention management relates to the management of cognitive resources, and in particular the time that humans allocate their mind (and organizations the minds of their employees) to conduct some activities.
- Personal knowledge management: see below (Personal time management).

Personal Time Management

Time management strategies are often associated with the recommendation to set goals. These goals are recorded and may be broken down into a project, an action plan, or a simple task list. For individual tasks or for goals, an importance rating may be established, deadlines may be set, and priorities assigned. This process results in a plan with a task list or a schedule or calendar of activities. Authors may recommend a daily, weekly, monthly or other planning periods, usually fixed, but sometimes variable. Different planning periods may be associated with different scope of planning or review. Authors may or may not emphasize reviews of performance against plan. Routine and recurring tasks may or may not be integrated into the time management plan and, if integrated, the integration can be accomplished in various ways.

How We Use Time

When we spend time, there is no improvement in efficiency, productivity, or effectiveness. The time is gone without a return. We save time when we perform tasks in less time or with less effort than previously. We use shortcuts and processes that streamline activities. We invest time when we take time now to save time later.

We spend time when we go to a movie; however, if we are a screenwriter, the time spent in the movie is an investment since it will help hone our writing skills. If we

invest time to learn screenwriting software, we will save time in the future when we compose our scripts. However, this is still relative to the point that we are able to turn better writing skills and faster script development into profit - if we are able to sell it. In capitalism our investment, might very well be someone else's profit.

Delegation is a valuable investment of our time. When we delegate, we teach someone to perform tasks we usually perform. While the training process takes time now, the investment pays off later since we free our time to perform higher-payoff activities.

The goal is to look for ways a person can save and invest time.

Task list

A **task list** (also *to-do list*) is a list of tasks to be completed, such as chores or steps toward completing a project. It is an inventory tool which serves as an alternative or supplement to memory.

Task lists are used in self-management, grocery lists, business management, project management, and software development. It may involve more than one list.

When you accomplish one of the items on a task list, you *check* it off or *cross* it off. The traditional method is to write these on a piece of paper with a pen or pencil, usually on a note pad or clip-board. Numerous digital equivalents are now available, including PIM (Personal information management) applications and most PDAs. There are also several web-based task list applications, many of which are free.

Task lists are often tiered. The simplest tiered system includes a general to-do list (or task-holding file) to record all the tasks the person needs to accomplish, and a daily to-do list which is created each day by transferring tasks from the general to-do list.

Task lists are often prioritized:

- An early advocate of "ABC" prioritization was Alan Lakein (See Books below.). In his system "A" items were the most important ("A-1" the most important within that group), "B" next most important, "C" least important.

- A particular method of applying the *ABC method*[2] assigns "A" to tasks to be done within a day, "B" a week, and "C" a month.

- To prioritize a daily task list, one either records the tasks in the order of highest priority, or assigns them a number after they are listed ("1" for highest priority, "2" for second highest priority, etc.) which indicates in which order to execute the tasks. The latter method is generally faster, allowing the tasks to be recorded more quickly.

Alternatives to Prioritizing:

A completely different approach which argues against prioritising altogether was put forward by British author Mark Forster in his book "Do It Tomorrow and Other Secrets of Time Management". This is based on the idea of operating "closed" to-do lists, instead of the traditional "open" to-do list. He argues that the traditional never-ending to-do lists virtually guarantees that some of your work will be left undone. This approach advocates getting all your work done, every day, and if you are unable to achieve it helps you diagnose where you are going wrong and what needs to change. Recently, Forster developed the "Autofocus Time Management System", which further systematizes working a to-do list as a series of closed sublists and emphasizes intuitive choices.

Software applications

Modern task list applications may have built-in task hierarchy (tasks are composed of subtasks which again may contain subtasks), may support multiple methods of filtering and ordering the list of tasks, and may allow one to associate arbitrarily long notes for each task.

In contrast to the concept of allowing the person to use multiple filtering methods, at least one new software product additionally contains a mode where the software will attempt to dynamically determine the best tasks for any given moment. Many of the software products for time management support multiple users. It allows the person to give tasks to other users and use the software for communication

Task list applications may be thought of as lightweight personal information manager or project management software.

Resistors

- Fear of change: Change can be daunting and one may be afraid to change what's proven to work in the past.
- Uncertainty: Even with the change being inevitable, one may be hesitant as being not sure where to start. Uncertainty about when or how to begin making a change can be significant.
- Time pressure: To save time, one has to invest time, and this time investment may be a cause of concern. Fearing that changing may involve more work at the start—and thus, in the very short term, make things worse—is a common resistor.

Attention Deficit Disorder

Excessive and chronic inability to manage time effectively may be a result of Attention Deficit Disorder (ADD). Diagnostic criteria includes: A sense of underachievement, difficulty getting organized, trouble getting started, many projects going simultaneously and trouble with follow-through.

- The Prefrontal Cortex: The Prefrontal Cortex is the most evolved part of the brain. It controls the functions of attention span, impulse control, organization, learning from experience and self-monitoring, among others. Daniel Amen, M.D. offers possible solutions in Change Your Brain Change Your Life.[7]

Drivers

- Increased effectiveness: One may feel the need to make more time so as to be more effective in performing the job and carrying out responsibilities.

- Performance improvement: Time management is an issue that often arises during performance appraisals or review meetings.

- Personal development: One may view changing the approach to time management as a personal development issue and reap the benefit of handling time differently at work and at home.

- Increased responsibilities: A change in time-management approach may become necessary as a result of a promotion or additional responsibilities. Since there is more work to do, and still the same amount of time to do it in, the approach must change.

Caveats

Dwelling on the lists

- According to Sandberg task lists "aren't the key to productivity [that] they're cracked up to be". He reports an estimated "30% of listeners spend more time managing their lists than [they do] completing what's on them".

- This could be caused by procrastination by prolonging the planning activity. This is akin to analysis paralysis. As with any activity, there's a point of diminishing returns.

Rigid adherence

- Hendrickson asserts that rigid adherence to task lists can create a "tyranny of the to-do list" that forces one to "waste time on unimportant activities".

- Again, the point of diminishing returns applies here too, but toward the size of the task. Some level of detail must be taken for granted for a task system to work. Rather than put "clean the kitchen", "clean the bedroom", and "clean the bathroom", it is more efficient to put "housekeeping" and save time spent writing and reduce the system's administrative load (each task entered into the system generates a cost in time and effort to manage it, aside from the execution of the task). The risk of consolidating tasks, however, is that "housekeeping" in this example may prove overwhelming or nebulously

defined, which will either increase the risk of procrastination, or a mismanaged project.[*citation needed*]

- Listing routine tasks wastes time. If you are in the habit of brushing your teeth every day, then there is no reason to put it down on the task list. The same goes for getting out of bed, fixing meals, etc. If you need to track routine tasks, then a standard list or chart may be useful, to avoid the procedure of manually listing these items over and over.[*citation needed*]

- To remain flexible, a task system must allow adaptation, in the form of rescheduling in the face of unexpected problems and opportunities, to save time spent on irrelevant or less than optimal tasks.[*citation needed*]

- To avoid getting stuck in a wasteful pattern, the task system should also include regular (monthly, semi-annual, and annual) planning and system-evaluation sessions, to weed out inefficiencies and ensure the user is headed in the direction he or she truly desires.[*citation needed*][10]

- If some time is not regularly spent on achieving long-range goals, the individual may get stuck in a perpetual holding pattern on short-term plans, like staying at a particular job much longer than originally planned.[*citation needed*]

Set goals for oneself and work on achieving these goals. Some people study in different ways so you are to find out how you are able to study and put that into action. Some people are able to understand their work if they can see it. Some need to touch and feel whatever is being spoken about in the book. Some people need to see what they are studying in order to understand what is coming out of the book.

Techniques for setting priorities
ABC analysis

A technique that has been used in business management for a long time is the categorization of large data into groups. These groups are often marked A, B, and C—hence the name. Activities are ranked upon these general criteria:

- **A** – Tasks that are perceived as being urgent and important.
- **B** – Tasks that are important but not urgent.
- **C** – Tasks that are neither urgent nor important.

Each group is then rank-ordered in priority. To further refine priority, some individuals choose to then force-rank all "B" items as either "A" or "C". ABC analysis can incorporate more than three groups. ABC analysis is frequently combined with Pareto analysis.

Pareto analysis

This is the idea that 80% of tasks can be completed in 20% of the disposable time. The remaining 20% of tasks will take up 80% of the time. This principle is used to

sort tasks into two parts. According to this form of Pareto analysis it is recommended that tasks that fall into the first category be assigned a higher priority.

The 80-20-rule can also be applied to increase productivity: it is assumed that 80% of the productivity can be achieved by doing 20% of the tasks. If productivity is the aim of time management, then these tasks should be prioritized higher.

Fit

Essentially, fit is the congruence of the requirements of a task (location, financial investment, time, etc.) with the available resources at the time. Often people are constrained by externally controlled schedules, locations, etc., and "fit" allows us to maximize our productivity given those constraints. For example, if one encounters a gap of 15 minutes in their schedule, it is typically more efficient to complete a task that would require 15 minutes, than to complete a task that can be done in 5 minutes, or to start a task that would take 4 weeks. This concept also applies to time of the day: free time at 7am is probably less usefully applied to the goal of learning the drums, and more productively a time to read a book. Lastly, fit can be applied to location: free time at home would be used differently from free time at work, in town, etc.

POSEC method

POSEC is an acronym for ***Prioritize by Organizing, Streamlining, Economizing and Contributing***.

The method dictates a template which emphasizes an average individual's immediate sense of emotional and monetary security. It suggests that by attending to one's personal responsibilities first, an individual is better positioned to shoulder collective responsibilities.

Inherent in the acronym is a hierarchy of self-realization which mirrors Abraham Maslow's "Hierarchy of needs".

1. **P**RIORITIZE-Your time and define your life by goals.
2. **O**RGANIZING-Things you have to accomplish regularly to be successful. (Family and Finances)
3. **S**TREAMLINING-Things you may not like to do, but must do. (Work and Chores)
4. **E**CONOMIZING-Things you should do or may even like to do, but they're not pressingly urgent. (Pastimes and Socializing)
5. **C**ONTRIBUTING-By paying attention to the few remaining things that make a difference. (Social Obligations)

The Eisenhower Method

All tasks are evaluated using the criteria important/unimportant and urgent/not urgent and put in according quadrants. Tasks in unimportant/not urgent are dropped, tasks in important/urgent are done immediately and personally, tasks in

unimportant/urgent are delegated and tasks in important/not urgent get an end date and are done personally. This method is said to have been used by US President Dwight D. Eisenhower, and is outlined in a quote attributed to him: *What is important is seldom urgent and what is urgent is seldom important*.

8. PAYROLL

In a company, **payroll** is the sum of all financial records of salaries, wages, bonuses and deductions.

Paycheck

A paycheck, is traditionally a paper document issued by an employer to pay an employee for services rendered. In recent times, the physical paycheck has been increasingly replaced by electronic direct deposit to bank accounts.

In most countries with a developed wire transfer system, using a physical check for paying wages and salaries has been uncommon for the past several decades. However, vocabulary referring to the figurative "paycheck" does exist in some languages, like German (*Gehaltsscheck*), partially due to the influence of US popular media, but this commonly refers to a payslip or stub rather than an actual check. Some company payrolls have eliminated both the paper check and stub, in which case an electronic image of the stub is available on an Internet website.

Payroll taxes

Federal/national, state/provincial, and/or local agencies require employers to perform various payroll functions such as withholding amounts from employees' compensation to cover income tax, Social Security, and Medicare.

Payroll taxes are levied by government agencies on employees' wages, tips, and other compensation. The amounts withheld by employers from employees' pay for federal income, social security, and Medicare taxes are considered to be trust-fund taxes, because the money is held in a special trust fund for the U.S. government. Amounts withheld for state and local income taxes are held in trust for the state and local governments.

Pay slip

A pay stub, paystub, pay slip, pay advice, or sometimes paycheck stub, is a document an employee receives either as a notice that the direct deposit transaction has gone through, or as part of their paycheck. It will typically detail the gross income and all taxes and any other deductions such as retirement plan contributions, insurances, garnishments, or charitable contributions taken out of the gross amount to arrive at the final net amount of the pay, also including the year to date totals in some circumstances.

Payroll card

For employees that, for one reason or another, do not have access to a bank account (bad check history, not in close proximity to bank, etc), there is a solution, offered by most major Payroll Service Providers. Instead of an employee receiving a check, and paying up to 5-10% to cash the check, the employee can have the direct deposit loaded onto a debit card. In this, a company can save money on printing checks, not buy the expensive check stock, and not having to worry about check fraud, due to a check being lost or stolen. A payroll card is a plastic card allowing an employee to access their pay by using a debit card. A payroll card can be more convenient than using a check casher, because it can be used at participating automatic teller machines to withdraw cash, or in retail environments to make purchases. Some payroll cards are cheaper than payday loans available from retail check cashing stores, but others are not. Most payroll cards will charge a fee if used at an ATM more than once per pay period.

The payroll card account may be held as a single account in the employer's name. In that case, the account holds the payroll funds for all employees using the payroll card system. Some payroll card programs establish a separate account for each employee, but others do not.

Many payroll cards are individually owned dda (demand deposit accounts) that are owned by the employee. These cards are more flexible, allowing the employee to use the card for paying bills, and the accounts are portable. Most payroll card accounts are FDIC-insured, but some are not.

Payroll Frequencies

Companies typically generate their payrolls on regular intervals, for the benefit of regular income to their employees. The regularity of the intervals, though, varies from company to company, and sometimes between job grades within a given company. Common payroll frequencies include: daily, weekly, bi-weekly (once every two weeks), semi-monthly (twice per month), and to somewhat of a lesser extent, monthly. Less common payroll frequencies include: 4-weekly (13 times per year), bi-monthly (once every two months), quarterly (once every 13 weeks), semi-annually (twice per year), and annually.

Warrants

Payroll warrants look like checks and clear through the banking system like checks, but are not drawn against cleared funds in a deposit account. Instead they are drawn against "available funds" that are not in a bank account, so the issuer can collect interest on the float. In the US, warrants are issued by government entities such as the military and state and county governments. Warrants are issued for payroll to individuals and for accounts payable to vendors. Technically a warrant is not payable on demand and may not be negotiable. Deposited warrants are routed to a collecting bank which processes them as collection items like maturing treasury bills and presents the warrants to the government entity's Treasury Department for payment each business day.

Payroll Outsourcing

Businesses may decide to outsource their payroll functions to an outsourcing service like a payroll bureau or a fully managed payroll service. These can normally reduce the costs involved in having payroll trained employees in-house as well as the costs of systems and software needed to process payroll. Within the United States, business payrolls are complicated in that taxes must be filed consistently and accurately to applicable regulatory agencies. Restaurant payrolls which typically include tip calculations, deductions, garnishments and other variables can be extremely difficult to manage especially for new or small business owners.

In the UK, payroll bureaus will deal with all HM Revenue & Customs enquiries and deal with employee's queries. Payroll bureaus also produce reports for the businesses' account department and payslips for the employees and can also make the payments to the employees if required.

Another reason many businesses outsource is because of the ever increasing complexity of payroll legislation. Annual changes in tax codes, PAYE and National Insurance bands as well as more and more statutory payments and deductions having to go through the payroll often mean there is a lot to keep abreast of in order to maintain compliance with the current legislation.

9. EMPLOYEE BENEFITS

Employee benefits are **benefits in kind** (also called **fringe benefits**, they are non-wage compensations provided to employees in addition to their normal wages or salaries. Where an employee exchanges (cash) wages for some other form of benefit, this is generally referred to as a 'salary sacrifice' arrangement. In most countries, most kinds of employee benefits are taxable to at least some degree.

Some of these benefits are: housing (employer-provided or employer-paid), group insurance (health, dental, life etc.), disability income protection, retirement benefits, daycare, tuition reimbursement, sick leave, vacation (paid and non-paid), social security, profit sharing, funding of education, and other specialized benefits.

The purpose of the benefits is to increase the economic security of employees.

The term **perks** is often used colloquially to refer to those benefits of a more discretionary nature. Often, perks are given to employees who are doing notably well and/or have seniority. Common perks are take-home vehicles, hotel stays, free refreshments, leisure activities on work time (golf, etc.), stationery, allowances for lunch, and—when multiple choices exist—first choice of such things as job assignments and vacation scheduling. They may also be given first chance at job promotions when vacancies exist.

United States

Employee benefits in the United States might include relocation assistance; medical, prescription, vision and dental plans; health and dependent care flexible spending

accounts; retirement benefit plans (pension, 401(k), 403(b)); group-term life and long term care insurance plans; legal assistance plans; adoption assistance; child care benefits; transportation benefits; and possibly other miscellaneous employee discounts (*e.g.*, movies and theme park tickets, wellness programs, discounted shopping, hotels and resorts, and so on).

Some fringe benefits (for example, accident and health plans, and group-term life insurance coverage up to US$50,000) may be excluded from the employee's gross income and, therefore, are not subject to federal income tax in the United States. Some function as tax shelters (for example, flexible spending accounts, 401(k)'s, 403(b)'s). Fringe benefits are also thought of as the costs of keeping employees other than salary. These benefit rates are typically calculated using fixed percentages that vary depending on the employee's classification and often change from year to year.

Normally, employer provided benefits are tax-deductible to the employer and non-taxable to the employee. The exception to the general rule includes certain executive benefits (e.g. golden handshake and golden parachute plans).

American corporations may also offer cafeteria plans to their employees. These plans would offer a menu and level of benefits for employees to choose from. In most instances, these plans are funded by both the employees and by the employer(s). The portion paid by the employees are deducted from their gross pay before federal and state taxes are applied.

United Kingdom

In the UK, Employee Benefits are categorised by three terms: Flexible Benefits (Flex) and Flexible Benefits Packages, Voluntary Benefits and Core Benefits.

Flexible Benefits, usually called a "Flex Scheme", is where employees are allowed to choose how a proportion of their remuneration is paid. Currently around a quarter of UK employers operate such a scheme. . This is normally delivered by allowing employees to sacrifice part of their pre-tax pay in exchange for a car, additional holiday, a shorter working week or other similar benefits, or give up benefits for additional cash remuneration. A number of external consultancies exist that enable organizations to manage Flex packages and they centre around the provision of an Intranet or Extranet website where employees can view their current flexible benefit status and make changes to their package. Adoption of flexible benefits has grown considerably over the five years to 2008, with The Chartered Institute of Personnel and Development additionally anticipating a further 12% rise in adoption within 2008/9. This has coincided with increased employee access to the internet and studies suggesting that employee engagement can be boosted by their successful adoption.

Core Benefits is the term given to benefits which all staff enjoy, such as holiday, sick pay and sometimes flexible hours.

In recent years many UK companies have used the tax and national insurance savings gained through the implementation of salary sacrifice benefits to fund the

implementation of flexible benefits. In a salary sacrifice arrangement an employee gives up the right to part of the cash remuneration due under their contract of employment. Usually the sacrifice is made in return for the employer's agreement to provide them with some form of non-cash benefit. The most popular types of salary sacrifice benefits include childcare vouchers and pensions.

Advantages of employee benefits

There are a number of advantages to employee benefits for both employer and employee.

Employer advantages

- Helps attract and retain better qualified employees.
- Provides high risk coverage at low costs easing the company's financial burden.
- Improves efficiency and productivity as employees are assured of security for themselves and their families.
- Premiums are tax deductible as corporation expense, which means savings with quality coverage.

Employee advantages

- Peace of mind leading to better productivity as employees are assured of provision for themselves and families in any mishap.
- Employees with personal life insurance enjoy additional protection
- Confidence in company's EB schemes boost staff morale and pride in company
- Employees enjoy cheaper rates negotiated through their employer than they could obtain as an individual

Employee disadvantages

In the UK these benefits are often taxed at the individuals normal tax rate which can prove expensive if there is no financial advantage to the individual from the benefit.

10. PERFORMANCE APPRAISAL

Performance appraisal, also known as **employee appraisal**, is a method by which the job performance of an employee is evaluated (generally in terms of quality, quantity, cost and time). Performance appraisal is a part of career development, also known as **employee appraisal**, is a method by which the job performance of an employee is evaluated (generally in terms of quality, quantity, cost and time). Performance appraisal is a part of career development.

Performance appraisals are regular reviews of employee performance within organizations

Generally, the aims of a performance appraisal are to:

- Give feedback on performance to employees.

- Identify employee training needs.
- Document criteria used to allocate organizational rewards.
- Form a basis for personnel decisions: salary increases, promotions, disciplinary actions, etc.
- Provide the opportunity for organizational diagnosis and development.
- Facilitate communication between employee and administration
- Validate selection techniques and human resource policies to meet federal Equal Employment Opportunity requirements.

A common approach to assessing performance is to use a numerical or scalar rating system whereby managers are asked to score an individual against a number of objectives/attributes. In some companies, employees receive assessments from their manager, peers, subordinates and customers while also performing a self assessment. This is known as 360° appraisal. forms good communication patterns

The most popular methods that are being used as performance appraisal process are:

- Management by objectives
- 360 degree appraisal
- Behavioral Observation Scale
- Behaviorally Anchored Rating Scale

Trait based systems, which rely on factors such as integrity and conscientiousness, are also commonly used by businesses. The scientific literature on the subject provides evidence that assessing employees on factors such as these should be avoided. The reasons for this are two-fold:

1) Because trait based systems are by definition based on personality traits, they make it difficult for a manager to provide feedback that can cause positive change in employee performance. This is caused by the fact that personality dimensions are for the most part static, and while an employee can change a specific behavior they cannot change their personality. For example, a person who lacks integrity may stop lying to a manager because they have been caught, but they still have low integrity and are likely to lie again when the threat of being caught is gone.

2) Trait based systems, because they are vague, are more easily influenced by office politics, causing them to be less reliable as a source of information on an employee's true performance. The vagueness of these instruments allows managers to fill them out based on who they want to/feel should get a raise, rather than basing scores on specific behaviors employees should/should not be engaging in. These systems are also more likely to leave a company open to discrimination claims because a manager can make biased decisions without having to back them up with specific behavioral information.

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Course Name: Negotiation and Mediation skills

Negotiation occurs in business, non-profit organizations, government branches, legal proceedings, among nations and in personal situations such as marriage, divorce, parenting, and everyday life. The study of the subject is called *negotiation theory*. Professional negotiators are often specialized, such as *union negotiators*, *leverage buyout negotiators*, *peace negotiators*, *hostage negotiators*, or may work under other titles, such as diplomats, legislators or brokers.

The word "negotiation" is from the Latin expression, "negotiatus", past participle of negotiare which means "to carry on business".

Approaches to negotiation

Negotiation typically manifests itself with a trained negotiator acting on behalf of a particular organization or position. It can be compared to mediation where a disinterested third party listens to each sides' arguments and attempts to help craft an agreement between the parties. It is also related to arbitration which, as with a legal proceeding, both sides make an argument as to the merits of their "case" and then the arbitrator decides the outcome for both parties.

There are many different ways to segment negotiation to gain a greater understanding of the essential parts. One view of negotiation involves three basic elements: *process*, *behavior* and *substance*. The process refers to how the parties negotiate: the context of the negotiations, the parties to the negotiations, the tactics used by the parties, and the sequence and stages in which all of these play out. Behavior refers to the relationships among these parties, the communication between them and the styles they adopt. The substance refers to what the parties negotiate over: the agenda, the issues (positions and - more helpfully - interests), the options, and the agreement(s) reached at the end.

Skilled negotiators may use a variety of tactics ranging from negotiation hypnosis, to a straight forward presentation of demands or setting of preconditions to more deceptive approaches such as cherry picking. Intimidation and salami tactics may also play a part in swaying the outcome of negotiations.

The advocate's approach

In the advocacy appracch, a skilled negotiator usually serves as advocate for one party to the negotiation and attempts to obtain the most favorable outcomes possible for that party. In this process the negotiator attempts to determine the minimum outcome(s) the other party is (or parties are) willing to accept, then adjusts their demands accordingly. A "successful" negotiation in the advocacy approach is when the negotiator is able to obtain all or most of the outcomes their party desires, but without driving the other party to permanently break off negotiations, unless the best alternative to a negotiated agreement (BATNA) is acceptable.

Traditional negotiating is sometimes called *win-lose* because of the assumption of a fixed "pie", that one person's gain results in another person's loss. This is only true,

however, if only a single issue needs to be resolved, such as a price in a simple sales negotiation.

During the 1960s, Gerard I. Nierenberg recognized the role of negotiation in resolving disputes in personal, business and international relations. He published *The Art of Negotiating*, where he states that the philosophies of the negotiators determine the direction a negotiation takes. His *Everybody Wins* philosophy assures that all parties benefit from the negotiation process which also produces more successful outcomes than the adversarial “winner takes all” approach.

Getting to YES was published by Roger Fisher and William Ury as part of the Harvard negotiation project. The book's approach, referred to as Principled Negotiation, is also sometimes called mutual gains bargaining. The mutual gains approach has been effectively applied in environmental situations (see Lawrence Susskind and Adil Najam) as well as labor relations where the parties (e.g. management and a labor union) frame the negotiation as "problem solving". If multiple issues are discussed, differences in the parties' preferences make win-win negotiation possible. For example, in a labor negotiation, the union might prefer job security over wage gains. If the employers have opposite preferences, a trade is possible that is beneficial to both parties. Such a negotiation is therefore not an adversarial zero-sum game.

There are a tremendous number of other scholars who have contributed to the field of negotiation, including Holly Schroth at UC Berkeley, Gerard E. Watzke at Tulane University, Sara Cobb at George Mason University, Len Riskin at the University of Missouri, Howard Raiffa at Harvard, Robert McKersie and Lawrence Susskind at MIT, and Adil Najam and Jeswald Salacuse at The Fletcher School of Law and Diplomacy.

The new creative approach

Perhaps the most famous negotiation parable involves an argument over an orange. The most obvious approach was to simply cut it in half, each person getting a fair share. But, when the negotiators began talking to each other, exchanging information about their interests, a better solution to the problem became obvious. The person wanting the orange for juice for breakfast took that part and the person wanting the rind for making marmalade took that part. Both sides ended up with more. Neither agreement is particularly creative. The parable of the orange becomes a story about creativity when both parties decide to cooperate in planting an orange tree or even an orchard. In a similar way, Boeing buys composite plastic wings for its new 787 Dreamliner designed and manufactured by Japanese suppliers, and then sells the completed 787s back to Japanese airlines, all with a nice subsidy from the Japanese government. This is what is meant by creativity in negotiations. At business schools these days much is being learned about creative processes. Courses are offered and dissertations proffered with “innovation” as the key buzz word at academic conferences and in corporate boardrooms. And, the more heard about innovation and creative processes the greater is the appreciation that the Japanese approach to negotiations, by nature, uses many of the techniques commonly emphasized in any discussion of creative processes. Indeed, there appears to be a deeply fundamental explanation why the Japanese have been able to build

such a successful society despite their lack of natural resources and relative isolation. While Japanese society does have its own obstacles to creativity – hierarchy and collectivism are two – they have developed a negotiation style that in many ways obviates such disadvantages. Indeed, the ten new rules for global negotiations advocated by Hernandez and Graham[3] nicely coincide with an approach that comes naturally to the Japanese:

1. Accept only creative outcomes
2. Understand cultures, especially your own.
3. Don't just adjust to cultural differences, exploit them.
4. Gather intelligence and reconnoiter the terrain.
5. Design the information flow and process of meetings.
6. Invest in personal relationships.
7. Persuade with questions. Seek information and understanding.
8. Make no concessions until the end.
9. Use techniques of creativity
10. Continue creativity after negotiations.

Beyond the practices of the Japanese, credit must also be given to the luminaries in field that have long advocated creativity in negotiations. Howard Raiffaand his colleagues recommend: ...the teams should think and plan together informally and do some joint brainstorming, which can be thought of as "dialoguing" or "prenegotiating." The two sides make no tradeoffs, commitments, or arguments about how to divide the pie at this early stage. Roger Fisher and William Ury title their Chapter 4 in *Getting to Yes*, "Invent[ing] Options for Mutual Gain." David Lax and James Sebenius, in their important new book, *3D-Negotiations*go past getting to yes, and talk about "creative agreements" and "great agreements." Lawrence Susskindand his associates recommend "parallel informal negotiations" toward building creative negotiation outcomes. These ideas must be pushed to the forefront in thinking about negotiations. The field generally is still stuck in the past, talking about "making deals" and "solving problems" as above. Even the use of terms like "win-win" expose the vestiges of the old competitive thinking. The point is that a negotiation is not something that can be won or lost, and the competitive metaphor limits creativity. The problem-solving metaphor does as well. Thus, the first rule of negotiations is: Accept only creative outcomes! Lynda Lawrence at IdeaWorks, a Newport Beach consulting firm has developed a most useful list of ways to generate more ideas during negotiations:

10 Ways to Generate More Ideas

1. Establish common goals of what this "collaboration" would create. A more workable deal? Some common long term goals? A closer partnership?
2. Establish the rules of engagement. The purpose of the exercise is to resolve differences in creative ways that work better for both parties. All ideas are possibilities, and research shows that combining ideas from different cultures can result in better outcomes than those from a single culture.
3. Trust is key, and difficult to establish in many cultures. Certain techniques might speed that process a little. Being offsite, for example. Establishing physical proximity that unconsciously signals intimacy.

4. Add diversity (gender, culture, extroverts, different work specialties, experts, outsiders) to the group. Indeed, the diversity associated with international teams and alliances is the real goldmine of creativity in negotiations.
5. Use storytelling. This both helps establish who you are and what point of view you are bringing to this collaboration.
6. Work in small groups. Add physical movement. Tell the participants to relax, play, sing, have fun, and silence is ok.
7. Work holistically and using visuals. If, for example, there are three sticking points where neither side is happy, agree to work on those points by spending a short time – 10 minutes – on each point where both sides offer "crazy" suggestions. Use techniques of improvisation. Neither side should be offended by the crazy ideas. No one should criticize. Explain that by exploring crazy ideas that better ideas are often generated.
8. Sleep on it. This enables the unconscious to work on the problems, and gives negotiators time to collect opinions before meeting again the next day. Other kinds of breaks, coffee, etc. are also helpful. The overnight part is particularly important. Anthropologist and consumer expert Clotaire Rapaille [9] suggests that the transitions between wakefulness and sleep allow new kinds of thinking "...calming their brainwaves, getting them to that tranquil point just before sleep" (page 8).
9. Doing this process over several sessions allows both sides to feel that progress is being made, and actually generates better and more polished ideas that both sides can invest in.
10. It is the process of creating something together, rather than the specific proposals, which creates bonding around a shared task and establishes new ways of working together. Each side feels honored and all can feel that something is being accomplished.

For the Japanese reader, some of these will be quite familiar. It's easy to get Japanese in close physical proximity (#3), they've been living that way for millennia. In Japanese companies there are not so much marketing specialists as different from engineers as different from finance analysts. Each executive may have worked in several functional areas, limiting the "chimney effect" often associated disparagingly with American firms (#4). Physical movement (#6) – picture the start of the day at the typical Japanese factory. The Japanese also seem to work best in small groups (#6). Silence is definitely ok (part of #6). The Japanese invented karaoke (#6 and singing). The Japanese have difficulty criticizing others, especially foreigners (#7). The use of visuals and holistic thinking are natural for Japanese (#7). Breaks are also a common procedure for Japanese (#8). Japanese will work better with people with whom they are familiar (#9).

It should also be noted that some of these techniques will seem foreign to Japanese negotiators. For example, diversity is not a strong suit for Japanese – purposefully adding women and other elements of diversity (#4) to their groups would seem odd. However, the two key things the Japanese do in negotiation that others can and should learn are: First, the Japanese are the absolute champion information vacuums on the planet. They keep their mouths shut and let everyone else do the talking. Thus, they use the diversity of their international colleagues (customers, suppliers, competitors, scientists, etc.) to a greater extent than any other society.

Often this is denigrated as copying and borrowing, but in fact being open to everyone's ideas has always been the key to creativity and human progress. While the Japanese, like everyone else around the world, are ethnocentric, they still very much respect foreign ideas. Second, the Japanese will only work with dolphins (cooperative negotiators), that is, when they have a choice. Trust and creativity go hand-in-hand. And, they will work to train their foreign counterparts to behave more cooperatively for the latter's own good. Witness the 25-year joint venture between Toyota and General Motors for manufacturing small cars in Fremont, CA as a prominent example.

Application of principles of creativity will be appropriate in at least three points during negotiations. Above noted was Howard Raiffa's suggestion that they be used in pre-negotiation meetings. Second, others advocate their use when impasses are reached. For example, in the negotiations regarding the Rio Urubamba natural gas project in Peru, the involved firms and environmentalist groups reached what at the time seemed to be an irreconcilable difference -- roads and a huge pipeline through the pristine forest would be an ecological disaster. The creative solution? Think of the remote gas field as an offshore platform, run the pipeline underground, and fly in personnel and equipment as needed.

Finally, even when negotiators have arrived at "yes," a scheduled review of the agreement may actually move the relationship past "yes" to truly creative outcomes. Perhaps such a review might be scheduled six months after implementation of the agreement has begun. But, the point is time must be set aside for a creative discussion of how to improve on the agreed to relationship? The emphasis of such a session should always be putting new ideas on the table – the answers to the question "what haven't we thought of?"

Other Negotiation Styles

Shell identified five styles/responses to negotiation. Individuals can often have strong dispositions towards numerous styles; the style used during a negotiation depends on the context and the interests of the other party, among other factors. In addition, styles can change over time.

1. **Accommodating**: Individuals who enjoy solving the other party's problems and preserving personal relationships. Accommodators are sensitive to the emotional states, body language, and verbal signals of the other parties. They can, however, feel taken advantage of in situations when the other party places little emphasis on the relationship.
2. **Avoiding**: Individuals who do not like to negotiate and don't do it unless warranted. When negotiating, avoiders tend to defer and dodge the confrontational aspects of negotiating; however, they may be perceived as tactful and diplomatic.
3. **Collaborating**: Individuals who enjoy negotiations that involve solving tough problems in creative ways. Collaborators are good at using negotiations to understand the concerns and interests of the other parties. They can, however, create problems by transforming simple situations into more complex ones.

4. **Competing**: Individuals who enjoy negotiations because they present an opportunity to win something. Competitive negotiators have strong instincts for all aspects of negotiating and are often strategic. Because their style can dominate the bargaining process, competitive negotiators often neglect the importance of relationships.
5. **Compromising**: Individuals who are eager to close the deal by doing what is fair and equal for all parties involved in the negotiation. Compromisers can be useful when there is limited time to complete the deal; however, compromisers often unnecessarily rush the negotiation process and make concessions too quickly.

Emotion in negotiation

Emotions play an important part in the negotiation process, although it is only in recent years that their effect is being studied. Emotions have the potential to play either a positive or negative role in negotiation. During negotiations, the decision as to whether or not to settle, rests in part on emotional factors. Negative emotions can cause intense and even irrational behavior, and can cause conflicts to escalate and negotiations to break down, while positive emotions facilitate reaching an agreement and help to maximize joint gains.

Affect effect: Dispositional affects affect the various stages of the negotiation process: which strategies are planned to be used, which strategies are actually chosen, the way the other party and its intentions are perceived, the willingness to reach an agreement and the final outcomes.Positive affectivity (PA) and negative affectivity (NA) of one or more of the negotiating sides can lead to very different outcomes.

Positive effect in negotiation

Even before the negotiation process starts, people in a positive mood have more confidence, and higher tendencies to plan to use a cooperative strategy. During the negotiation, negotiators who are in a positive mood tend to enjoy the interaction more, show less contentious behavior, use less aggressive tacticsand more cooperative strategies.[This in turn increases the likelihood that parties will reach their instrumental goals, and enhance the ability to find integrative gains.Indeed, compared with negotiators with negative or natural affectivity, negotiators with positive affectivity reached more agreements and tended to honor those agreements more. Those favorable outcomes are due to better decision making processes, such as flexible thinking, creative problem solving, respect for others' perspectives, willingness to take risks and higher confidencePost negotiation positive affect has beneficial consequences as well. It increases satisfaction with achieved outcome and influences one's desire for future interactions. The PA aroused by reaching an agreement facilitates the dyadic relationship, which result in affective commitment that sets the stage for subsequent interactions.[
PA also has its drawbacks: it distorts perception of self performance, such that performance is judged to be relatively better than it actually is.] Thus, studies involving self reports on achieved outcomes might be biased.

Negative effect in negotiation

Negative effect has detrimental effects on various stages in the negotiation process. Although various negative emotions affect negotiation outcomes, by far the most researched is anger. Angry negotiators plan to use more competitive strategies and to cooperate less, even before the negotiation starts. These competitive strategies are related to reduced joint outcomes. During negotiations, anger disrupts the process by reducing the level of trust, clouding parties' judgment, narrowing parties' focus of attention and changing their central goal from reaching agreement to retaliating against the other side. Angry negotiators pay less attention to opponent's interests and are less accurate in judging their interests, thus achieve lower joint gains. Moreover, because anger makes negotiators more self-centered in their preferences, it increases the likelihood that they will reject profitable offers. Anger doesn't help in achieving negotiation goals either: it reduces joint gains and does not help to boost personal gains, as angry negotiators don't succeed in claiming more for themselves. Moreover, negative emotions lead to acceptance of settlements that are not in the positive utility function but rather have a negative utility. However, expression of negative emotions during negotiation can sometimes be beneficial: legitimately expressed anger can be an effective way to show one's commitment, sincerity, and needs. Moreover, although NA reduces gains in integrative tasks, it is a better strategy than PA in distributive tasks (such as zero-sum). In his work on negative affect arousal and white noise, Seidner found support for the existence of a negative affect arousal mechanism through observations regarding the devaluation of speakers from other ethnic origins." Negotiation may be negatively affected, in turn, by submerged hostility toward an ethnic or gender group.

Conditions for emotions effect in negotiation

Research indicates that negotiator's emotions do not necessarily affect the negotiation process. Albarracın et al. (2003) suggested that there are two conditions for emotional effect, both related to the ability (presence of environmental or cognitive disturbances) and the motivation:

1. Identification of the affect: requires high motivation, high ability or both.
2. Determination that the affect is relevant and important for the judgment: requires that either the motivation, the ability or both are low.

According to this model, emotions are expected to affect negotiations only when one is high and the other is low. When both ability and motivation are low the affect will not be identified, and when both are high the affect will be identify but discounted as irrelevant for judgment. A possible implication of this model is, for example, that the positive effects PA has on negotiations (as described above) will be seen only when either motivation or ability are low.

The effect of the partner's emotions

Most studies on emotion in negotiations focus on the effect of the negotiator's own emotions on the process. However, what the other party feels might be just as important, as group emotions are known to affect processes both at the group and

the personal levels. When it comes to negotiations, trust in the other party is a necessary condition for its emotion to affect and visibility enhances the effect. Emotions contribute to negotiation processes by signaling what one feels and thinks and can thus prevent the other party from engaging in destructive behaviors and to indicate what steps should be taken next: PA signals to keep in the same way, while NA points that mental or behavioral adjustments are needed.
Partner's emotions can have two basic effects on negotiator's emotions and behavior: mimetic/ reciprocal or complementary. For example, disappointment or sadness might lead to compassion and more cooperation. In a study by Butt et al. (2005) which simulated real multi-phase negotiation, most people reacted to the partner's emotions in reciprocal, rather than complementary, manner. Specific emotions were found to have different effects on the opponent's feelings and strategies chosen:

- **Anger** caused the opponents to place lower demands and to concede more in a zero-sum negotiation, but also to evaluate the negotiation less favorably. It provoked both dominating and yielding behaviors of the opponent.
- **Pride** led to more integrative and compromise strategies by the partner.
- **Guilt** or **regret** expressed by the negotiator led to better impression of him by the opponent, however it also led the opponent to place higher demands. On the other hand, personal guilt was related to more satisfaction with what one achieved.
- **Worry** or **disappointment** left bad impression on the opponent, but led to relatively lower demands by the opponent. **Problems with lab negotiation studies**

Negotiation is a rather complex interaction. Capturing all its complexity is a very difficult task, let alone isolating and controlling only certain aspects of it. For this reason most negotiation studies are done under laboratory conditions, and focus only on some aspects. Although lab studies have their advantages, they do have major drawbacks when studying emotions:

- Emotions in lab studies are usually manipulated and are therefore relatively 'cold' (not intense). Although those 'cold' emotions might be enough to show effects, they are qualitatively different from the 'hot' emotions often experienced during negotiations.
- In real life there is self-selection to which negotiation one gets into, which effects the emotional commitment, motivation and interests. However this is not the case in lab studies
- Lab studies tend to focus on relatively few well defined emotions. Real life scenarios provoke a much wider scale of emotions.
- Coding the emotions has a double catch: if done by a third side, some emotions might not be detected as the negotiator sublimates them for strategic reasons. Self report measures might overcome this, but they are usually filled only before or after the process, and if filled during the process might interfere with it.
- **The pervasive impact of culture on international negotiations**

The primary purpose of this section is to demonstrate the extent of cultural differences in negotiation styles and how these differences can cause problems in

international business negotiations. The reader will note that national culture does not determine negotiation behavior. Rather, national culture is one of many factors that influence behavior at the negotiation table, albeit an important one. For example, gender, organizational culture, international experience, industry or regional background can all be important influences as well. Of course, stereotypes of all kinds are dangerous, and international negotiators must get to know the people they are working with, not just their culture, country, or company.

The material here is based on systematic study of international negotiation behavior over the last three decades in which the negotiation styles of more than 1,500 businesspeople in 17 countries (21 cultures) were considered. The work involved interviews with experienced executives and participant observations in the field, as well as behavioral science laboratory work including surveys and analyses of videotaped negotiations. The countries studied were Japan, S. Korea, China (Tianjin, Guangzhou, and Hong Kong), Vietnam, Taiwan, the Philippines, Russia, Israel, Norway, the Czech Republic, Germany, France, the United Kingdom, Spain, Brazil, Mexico, Canada (English-speakers and French-speakers), and the United States. The countries were chosen because they constitute America's most important present and future trading partners. Looking broadly across the several cultures, two important lessons stand out. The first is that regional generalizations very often are not correct. For example, Japanese and Korean negotiation styles are quite similar in some ways, but in other ways they could not be more different. The second lesson learned from the research is that Japan is an exceptional place: On almost every dimension of negotiation style considered, the Japanese are on or near the end of the scale. For example, the Japanese use the lowest amount of eye contact of the cultures studied. Sometimes, Americans are on the other end. But actually, most of the time Americans are somewhere in the middle. The reader will see this evinced in the data presented in this section. The Japanese approach, however, is most distinct, even *sui generis*.

Cultural differences cause four kinds of problems in international business negotiations, at the levels of:

- Language
- Nonverbal behaviors
- Values
- Thinking and decision-making processes

The order is important; the problems lower on the list are more serious because they are more subtle. For example, two negotiators would notice immediately if one were speaking Japanese and the other German. The solution to the problem may be as simple as hiring an interpreter or talking in a common third language, or it may be as difficult as learning a language. Regardless of the solution, the problem is obvious.

Cultural differences in nonverbal behaviors, on the other hand, are almost always hidden below our awareness. That is to say, in a face-to-face negotiation participants nonverbally—and more subtly—give off and take in a great deal of information. Some experts argue that this information is more important than verbal information.

Almost all this signaling goes on below our levels of consciousness. When the nonverbal signals from foreign partners are different, negotiators are most apt to misinterpret them without even being conscious of the mistake. For example, when a French client consistently interrupts, Americans tend to feel uncomfortable without noticing exactly why. In this manner, interpersonal friction often colors business relationships, goes undetected, and, consequently, goes uncorrected. Differences in values and thinking and decision-making processes are hidden even deeper and therefore are even harder to diagnose and therefore cure. These differences are discussed below, starting with language and nonverbal behaviors.

Differences at the level of language

Translation problems are often substantial in international negotiations. And, when languages are linguistically distant,[29] greater problems should be anticipated. Particularly daunting can be work in global negotiation. Often the language used is English, but it may be spoken as a second language by most executives at the table. Indeed, native speakers from England, India, and the United States often have trouble understanding one another. Exact translations in international interactions are a goal almost never attained.

Moreover, language differences are sometimes exploited in interesting ways. Many senior executives in foreign countries speak and understand some English, but prefer to speak in their “stronger” native language and use an interpreter. Thus, we've see a senior Russian negotiator asking questions in Russian. The interpreter then translated the question for his American counterpart. While the interpreter spoke, the American’s attention (gaze direction) was given to the interpreter. However, the Russian’s gaze direction was at the American. Therefore, the Russian could carefully and unobtrusively observe the American's facial expressions and nonverbal responses. Additionally, when the American spoke, the senior Russian had twice the response time. Because he understood English, he could formulate his responses during the translation process.

What’s this extra response time worth in a strategic conversation? What’s it worth to be carefully able to observe the nonverbal responses of your top-level counterpart in a high-stakes business negotiation? Simply stated, bilingualism is not a common characteristic for Americans, and therefore competitors with greater language skills are afforded a natural advantage in international commerce.

Additionally, a common complaint heard from American managers regards foreign clients and partners breaking into side conversations in their native languages. At best, it is seen as impolite, and quite often American negotiators are likely to attribute something sinister to the content of the foreign talk—“They’re plotting or telling secrets.” This is a frequent American mistake.

The usual purpose of such side conversations is to straighten out a translation problem. For instance, one Korean may lean over to another and ask, “What’d he say?” Or, the side conversation can regard a disagreement among the foreign team members. Both circumstances should be seen as positive signs by Americans—that is, getting translations straight enhances the efficiency of the interactions, and

concessions often follow internal disagreements. But because most Americans speak only one language, neither circumstance is appreciated. By the way, people from other countries are advised to give Americans a brief explanation of the content of their first few side conversations to assuage the sinister attributions.

But, there are problems at the level of language beyond translations and interpreters. Data from simulated negotiations are informative. In the study, the verbal behaviors of negotiators in 15 of the cultures (six negotiators in each of the 15 groups) were videotaped. The numbers in the body of Exhibit 1 represent the percentages of statements that were classified into each category listed. That is, 7 percent of the statements made by Japanese negotiators were classified as promises, 4 percent as threats, 7 percent as recommendations, and so on. The verbal bargaining behaviors used by the negotiators during the simulations proved to be surprisingly similar across cultures. Negotiations in all 15 cultures were composed primarily of information-exchange tactics—questions and self-disclosures. Note that the Israelis are on the low end of the continuum of self-disclosures. Their 30 percent (near the Japanese, Spaniards, and the English-speaking Canadians at 34 percent) was the lowest across all 15 groups, suggesting that they are the most reticent about giving (that is, communicating) information. Overall, however, the patterns of verbal tactics used were surprisingly similar across the diverse cultures.

Go to Exhibit 1, Verbal Negotiation Tactics, (the “what” of communications) across 15 Cultures

Nonverbal behaviors

Anthropologist Ray L. Birdwhistell demonstrated that less than 35% of the message in conversations is conveyed by the spoken word while the other 65% is communicated nonverbally. Albert Mehrabian, a UCLA psychologist, also parsed where meaning comes from in face-to-face interactions. He reports:

- 7% of the meaning is derived from the words spoken
- 38% from paralinguistic channels, that is, tone of voice, loudness, and other aspects of how things are said
- 55% from facial expressions

Of course, some might quibble with the exact percentages (and many have), but our work also supports the notion that nonverbal behaviors are crucial – how things are said is often more important than what is said.

Exhibit 2 provides analyses of some linguistic aspects and nonverbal behaviors for the 15 videotaped groups, that is, how things are said. Although these efforts merely scratch the surface of these kinds of behavioral analyses, they still provide indications of substantial cultural differences. Note that, once again, the Japanese are at or next to the end of the continuum on almost every dimension of the behaviors listed. Their facial gazing and touching are the least among the 15 groups. Only the Northern Chinese used the word no less frequently, and only the Russians used more silent periods than did the Japanese.

Go to Exhibit 2, Linguistic Aspects of Language and Nonverbal Behaviors ("how" things are said) across 15 Cultures: A broader examination of the data in Exhibits 1 and 2 reveals a more meaningful conclusion: The variation across cultures is greater when comparing linguistic aspects of language and nonverbal behaviors than when the verbal content of negotiations is considered. For example, notice the great differences between the Japanese and Brazilians in Exhibit 1 vis-à-vis Exhibit 2.

Distinctive negotiation behaviors of 15 cultural groups

Following are further descriptions of the distinctive aspects of each of the 15 cultural groups videotaped. Certainly, conclusions of statistical significant differences between individual cultures cannot be drawn without larger sample sizes. But, the suggested cultural differences are worthwhile to consider briefly.

Japan. Consistent with most descriptions of Japanese negotiation behavior, the results of this analysis suggest their style of interaction is among the least aggressive (or most polite). Threats, commands, and warnings appear to be de-emphasized in favor of the more positive promises, recommendations, and commitments. Particularly indicative of their polite conversational style was their infrequent use of *no* and *you* and facial gazing, as well as more frequent silent periods.

Korea. Perhaps one of the more interesting aspects of the analysis is the contrast of the Asian styles of negotiations. Non-Asians often generalize about the Orient; the findings demonstrate, however, that this is a mistake. Korean negotiators used considerably more punishments and commands than did the Japanese. Koreans used the word no and interrupted more than three times as frequently as the Japanese. Moreover, no silent periods occurred between Korean negotiators.

China (Northern). The behaviors of the negotiators from Northern China (i.e., in and around Tianjin) were most remarkable in the emphasis on asking questions (34 percent). Indeed, 70 percent of the statements made by the Chinese negotiators were classified as information-exchange tactics. Other aspects of their behavior were quite similar to the Japanese, particularly the use of *no* and *you* and silent periods.

Taiwan. The behavior of the businesspeople in Taiwan was quite different from that in China and Japan but similar to that in Korea. The Chinese on Taiwan were exceptional in the time of facial gazing—on the average, almost 20 of 30 minutes. They asked fewer questions and provided more information (self-disclosures) than did any of the other Asian groups.

Russia. The Russians' style was quite different from that of any other European group, and, indeed, was quite similar in many respects to the style of the Japanese. They used *no* and *you* infrequently and used the most silent periods of any group. Only the Japanese did less facial gazing, and only the Chinese asked a greater percentage of questions.

Israel. The behaviors of the Israeli negotiators were distinctive in three respects. As mentioned above, they used the lowest percentage of self-disclosures, apparently holding their cards relatively closely. Alternatively, they used by far the highest

percentages of promises and recommendations, using these persuasive strategies unusually heavily. They were also at the end of the scale on the percentage of normative appeals at 5 percent with the most frequent reference to competitors' offers. Perhaps most importantly the Israeli negotiators interrupted one another much more frequently than negotiators from any other group. Indeed, this important nonverbal behavior is most likely to blame for the "pushy" stereotype often used by Americans to describe their Israeli negotiation partners.

Germany. The behaviors of the Germans are difficult to characterize because they fell toward the center of almost all the continua. However, the Germans were exceptional in the high percentage of self-disclosures (47 percent) and the low percentage of questions (11 percent).

United Kingdom. The behaviors of the British negotiators were remarkably similar to those of the Americans in all respects. Most British negotiators have a strong sense of the right way to negotiate and the wrong. Protocol is of great importance.

Spain. *Diga* is perhaps a good metaphor for the Spanish approach to negotiations evinced in our data. When you make a phone call in Madrid, the usual greeting on the other end is not *hola* ("hello") but is, instead, *diga* ("speak"). It is not surprising, then, that the Spaniards in the videotaped negotiations likewise used the highest percentage of commands (17 percent) of any of the groups and gave comparatively little information (self-disclosures, only 34 percent). Moreover, they interrupted one another more frequently than any other group, and they used the terms *no* and *you* very frequently.

France. The style of the French negotiators was perhaps the most aggressive of all the groups. In particular, they used the highest percentage of threats and warnings (together, 8 percent). They also used interruptions, facial gazing, and *no* and *you* very frequently compared with the other groups, and one of the French negotiators touched his partner on the arm during the simulation.

Brazil. The Brazilian businesspeople, like the French and Spanish, were quite aggressive. They used the second-highest percentage of commands of all the groups. On average, the Brazilians said the word *no* 42 times, *you* 90 times, and touched one another on the arm about 5 times during 30 minutes of negotiation. Facial gazing was also high.

Mexico. The patterns of Mexican behavior in our negotiations are good reminders of the dangers of regional or language-group generalizations. Both verbal and nonverbal behaviors were quite different than those of their Latin American (Brazilian) or continental (Spanish) cousins. Indeed, Mexicans answer the telephone with the much less demanding *bueno* (short for "good day"). In many respects, the Mexican behavior was very similar to that of the negotiators from the United States.

French-Speaking Canada. The French-speaking Canadians behaved quite similarly to their continental cousins. Like the negotiators from France, they too used high percentages of threats and warnings, and even more interruptions and eye contact. Such an aggressive interaction style would not mix well with some of the more low-

key styles of some of the Asian groups or with English speakers, including English-speaking Canadians.

English-Speaking Canada. The Canadians who speak English as their first language used the lowest percentage of aggressive persuasive tactics (threats, warnings, and punishments totaled only 1 percent) of all 15 groups. Perhaps, as communications researchers suggest, such stylistic differences are the seeds of interethnic discord as witnessed in Canada over the years. With respect to international negotiations, the English-speaking Canadians used noticeably more interruptions and no's than negotiators from either of Canada's major trading partners, the United States and Japan.

United States. Like the Germans and the British, the Americans fell in the middle of most continua. They did interrupt one another less frequently than all the others, but that was their sole distinction.

These differences across the cultures are quite complex, and this material by itself should not be used to predict the behaviors of foreign counterparts. Instead, great care should be taken with respect to the aforementioned dangers of stereotypes. The key here is to be aware of these kinds of differences so that the Japanese silence, the Brazilian "no, no, no...," or the French threat are not misinterpreted.

Differences in managerial values as pertinent to negotiations

Four managerial values—objectivity, competitiveness, equality, and punctuality—that are held strongly and deeply by most Americans seem to frequently cause misunderstandings and bad feelings in international business negotiations.

Objectivity

"Americans make decisions based upon the bottom line and on cold, hard facts." "Americans don't play favorites." "Economics and performance count, not people." "Business is business." Such statements well reflect American notions of the importance of objectivity.

The single most successful book on the topic of negotiation, *Getting to Yes*, is highly recommended for both American and foreign readers. The latter will learn not only about negotiations but, perhaps more important, about how Americans think about negotiations. The authors are quite emphatic about "separating the people from the problem," and they state, "Every negotiator has two kinds of interests: in the substance and in the relationship." This advice is probably quite worthwhile in the United States or perhaps in Germany, but in most places in the world such advice is nonsense. In most places in the world, particularly in collectivistic, high-context cultures, personalities and substance are not separate issues and cannot be made so.

For example, consider how important nepotism is in Chinese or Hispanic cultures. Experts tell us that businesses don't grow beyond the bounds and bonds of tight family control in the burgeoning "Chinese commonwealth." Things work the same

way in Spain, Mexico, and the Philippines. And, naturally, negotiators from such countries not only will take things personally but will be personally affected by negotiation outcomes] What happens to them at the negotiation table will affect the business relationship regardless of the economics involved.

Competitiveness and Equality

Simulated negotiations can be viewed as a kind of experimental economics wherein the values of each participating cultural group are roughly reflected in the economic outcomes. The simple simulation used in this part of our work represents the essence of commercial negotiations—it has both competitive and cooperative aspects. At least 40 businesspeople from each culture played the same buyer-seller game, negotiating over the prices of three products. Depending on the agreement reached, the "negotiation pie" could be made larger through cooperation (as high as $10,400 in joint profits) before it was divided between the buyer and seller. The results are summarized in Exhibit 3Go to Exhibit 3, Cultural Differences in Competitiveness and Equality in Negotiation Outcomes across 20 Cultures:

The Japanese were the champions at making the pie big. Their joint profits in the simulation were the highest (at $9,590) among the 21 cultural groups involved. The Chinese in Hong Kong and the British businesspeople also behaved cooperatively in our negotiation game. The Czechs and the Germans behaved more competitively. The American pie was more average sized (at $9,030), but at least it was divided relatively equitably (51.8 percent of the profits went to the buyers). Conversely, the Japanese, and particularly the South Korean, Mexican businesspeople split their pies in strange (perhaps even unfair) ways, with buyers making higher percentages of the profits (53.8 percent, 55.0 percent, and 56.7 percent, respectively). The implications of these simulated business negotiations are completely consistent with the comments of other authors and the adage that in Japan (and apparently in Korea and Meixco as well) the buyer is "kinger". Americans have little understanding of the Japanese practice of granting complete deference to the needs and wishes of buyers. That is not the way things work in America. American sellers tend to treat American buyers more as equals, and the egalitarian values of American society support this behavior. The American emphasis on competition and individualism represented in these findings is quite consistent with the work of Geert Hofstede,[35] which indicated that Americans scored the highest among all the cultural groups on the individualism (versus collectivism) scale. Moreover, values for individualism/collectivism have been shown to directly influence negotiation behaviors in several other countries.

Finally, not only do Japanese buyers achieve higher results than American buyers, but compared with American sellers ($4,350), Japanese sellers also get more of the commercial pie ($4,430) as well. Interestingly, when shown these results, Americans in executive seminars still often prefer the American seller's role. In other words, even though the American sellers make lower profits than the Japanese, many American managers apparently prefer lower profits if those profits are yielded from a more equal split of the joint profits.

Time

“Just make them wait.” Everyone else in the world knows that no negotiation tactic is more useful with Americans, because no one places more value on time, no one has less patience when things slow down, and no one looks at their wristwatches more than Americans do. Edward T. Hall in his seminal writing[i] is best at explaining how the passage of time is viewed differently across cultures and how these differences most often hurt Americans.

Even Americans try to manipulate time to their advantage, however. As a case in point, Solar Turbines Incorporated (a division of Caterpillar) once sold $34 million worth of industrial gas turbines and compressors for a Russian natural gas pipeline project. Both parties agreed that final negotiations would be held in a neutral location, the south of France. In previous negotiations, the Russians had been tough but reasonable. But in Nice, the Russians were not nice. They became tougher and, in fact, completely unreasonable, according to the Solar executives involved.

It took a couple of discouraging days before the Americans diagnosed the problem, but once they did, a crucial call was made back to headquarters in San Diego. Why had the Russians turned so cold? They were enjoying the warm weather in Nice and weren’t interested in making a quick deal and heading back to Moscow! The call to California was the key event in this negotiation. Solar’s headquarters people in San Diego were sophisticated enough to allow their negotiators to take their time. From that point on, the routine of the negotiations changed to brief, 45-minute meetings in the mornings, with afternoons at the golf course, beach, or hotel, making calls and doing paperwork. Finally, during the fourth week, the Russians began to make concessions and to ask for longer meetings. Why? They could not go back to Moscow after four weeks on the Mediterranean without a signed contract. This strategic reversal of the time pressure yielded a wonderful contract for Solar.

Differences in thinking and decision-making processes

When faced with a complex negotiation task, most Westerners (notice the generalization here) divide the large task up into a series of smaller tasks. Issues such as prices, delivery, warranty, and service contracts may be settled one issue at a time, with the final agreement being the sum of the sequence of smaller agreements. In Asia, however, a different approach is more often taken wherein all the issues are discussed at once, in no apparent order, and concessions are made on all issues at the end of the discussion. The Western sequential approach and the Eastern holistic approach do not mix well.

That is, American managers often report great difficulties in measuring progress in negotiations, particularly in Asian countries. After all, in America, you are half done when half the issues are settled. But in China, Japan, or Korea nothing seems to get settled. Then, surprise, you are done. Often, Americans make unnecessary concessions right before agreements are announced by the other side. For example, one American department store executive traveling to Japan to buy six different consumer products for her chain lamented that negotiations for the first product took an entire week. In the United States, such a purchase would be consummated in an afternoon. So, by her calculations, she expected to have to spend six weeks in Japan to complete her purchases. She considered raising her purchase prices to try

to move things along faster. But before she was able to make such a concession, the Japanese quickly agreed on the other five products in just three days. This particular manager was, by her own admission, lucky in her first encounter with Japanese bargainer

This American executive's near blunder reflects more than just a difference in decision-making style. To Americans, a business negotiation is a problem-solving activity, the best deal for both parties being the solution. To a Japanese businessperson, on the other hand, a business negotiation is a time to develop a business relationship with the goal of long-term mutual benefit. The economic issues are the context, not the content, of the talks. Thus, settling any one issue really is not that important. Such details will take care of themselves once a viable, harmonious business relationship is established. And, as happened in the case of the retail goods buyer above, once the relationship was established—signaled by the first agreement—the other "details" were settled quickly.

American bargainers should anticipate such a holistic approach to be common in Asian cultures and be prepared to discuss all issues simultaneously and in an apparently haphazard order. Progress in the talks should not be measured by how many issues have been settled. Rather, Americans must try to gauge the quality of the business relationship. Important signals of progress can be the following:

1. Higher-level executives from the other side being included in the discussions
2. Their questions beginning to focus on specific areas of the deal
3. A softening of their attitudes and position on some of the issues—"Let us take some time to study this issue"
4. At the negotiation table, increased talk among themselves in their own language, which may often mean they're trying to decide something
5. Increased bargaining and use of the lower-level, informal, and other channels of communication

Implications for managers and negotiators

Considering all the potential problems in cross-cultural negotiations, particularly when you mix managers from relationship-oriented cultures with those from information-oriented ones, it is a wonder that any international business gets done at all. Obviously, the economic imperatives of global trade make much of it happen despite the potential pitfalls. But an appreciation of cultural differences can lead to even better international commercial transactions—it is not just business deals but creative and highly profitable business relationships that are the real goal of international business negotiations.

Decision making

Decision making can be regarded as an outcome of mental processes (cognitive process) leading to the selection of a course of action among several alternatives.

Every decision making process produces a final choice.[1] The output can be an action or an opinion of choice.

Overview

Human performance in decision making terms has been the subject of active research from several perspectives. From a psychological perspective, it is necessary to examine individual decisions in the context of a set of needs, preferences an individual has and values they seek. From a cognitive perspective, the decision making process must be regarded as a continuous process integrated in the interaction with the environment. From a normative perspective, the analysis of individual decisions is concerned with the logic of decision making and rationality and the invariant choice it leads to. Yet, at another level, it might be regarded as a problem solving activity which is terminated when a satisfactory solution is found. Therefore, decision making is a reasoning or emotional process which can be rational or irrational, can be based on explicit assumptions or tacit assumptions.

Logical decision making is an important part of all science-based professions, where specialists apply their knowledge in a given area to making informed decisions. For example, medical decision making often involves making a diagnosis and selecting an appropriate treatment. Some research using naturalistic methods shows, however, that in situations with higher time pressure, higher stakes, or increased ambiguities, experts use intuitive decision making rather than structured approaches, following a recognition primed decision approach to fit a set of indicators into the expert's experience and immediately arrive at a satisfactory course of action without weighing alternatives. Recent robust decision efforts have formally integrated uncertainty into the decision making process. However, Decision Analysis, recognized and included uncertainties with a structured and rationally justifiable method of decision making since its conception in 1964.

Decision making processes

According to behavioralist Isabel Briggs Myers, a person's decision making process depends to a significant degree on their cognitive style. Myers developed a set of four bi-polar dimensions, called the Myers-Briggs Type Indicator (MBTI). The terminal points on these dimensions are: *thinking* and *feeling*; *extroversion* and *introversion*; *judgment* and *perception*; and *sensing* and *intuition*. She claimed that a person's decision making style correlates well with how they score on these four dimensions. For example, someone who scored near the thinking, extroversion, sensing, and judgment ends of the dimensions would tend to have a logical, analytical, objective, critical, and empirical decision making style.

Other studies suggest that these national or cross-cultural differences exist across entire societies. For example, Maris Martinsons has found that American, Japanese and Chinese business leaders each exhibit a distinctive national style of decision making. Some of the decision making techniques that we use in everyday life include:

- listing the advantages and disadvantages of each option, popularized by Plato and Benjamin Franklin
- flipping a coin, cutting a deck of playing cards, and other random or coincidence methods
- accepting the first option that seems like it might achieve the desired result
- prayer, tarot cards, astrology, augurs, revelation, or other forms of divination
- acquiesce to a person in authority or an "expert"
- choosing the alternative with the highest probability-weighted utility for each alternative (see Decision Analysis)

Cognitive and personal biases

Biases can creep into our decision making processes. Many different people have made a decision about the same question (*e.g.* "Should I have a doctor look at this troubling breast cancer symptom I've discovered?" "Why did I ignore the evidence that the project was going over budget?") and then craft potential cognitive interventions aimed at improving decision making outcomes.

Below is a list of some of the more commonly debated cognitive biases.

- Selective search for evidence (a.k.a. Confirmation bias in psychology) (Scott Plous, 1993) – We tend to be willing to gather facts that support certain conclusions but disregard other facts that support different conclusions. Individuals who are highly defensive in this manner show significantly greater left prefrontal cortex activity as measured by EEG than do less defensive individuals.
- Premature termination of search for evidence – We tend to accept the first alternative that looks like it might work.
- Inertia – Unwillingness to change thought patterns that we have used in the past in the face of new circumstances.
- Selective perception – We actively screen-out information that we do not think is important. (See prejudice.) In one demonstration of this effect, discounting of arguments with which one disagrees (by judging them as untrue or irrelevant) was decreased by selective activation of right prefrontal cortex.
- Wishful thinking or optimism bias – We tend to want to see things in a positive light and this can distort our perception and thinking. Choice-supportive bias occurs when we distort our memories of chosen and rejected options to make the chosen options seem relatively more attractive.
- Recency – We tend to place more attention on more recent information and either ignore or forget more distant information. (See semantic priming.) The opposite effect in the first set of data or other information is termed Primacy effect (Plous, 1993).
- Repetition bias – A willingness to believe what we have been told most often and by the greatest number of different of sources.
- Anchoring and adjustment – Decisions are unduly influenced by initial information that shapes our view of subsequent information.
- Group think – Peer pressure to conform to the opinions held by the group.

- Source credibility bias – We reject something if we have a bias against the person, organization, or group to which the person belongs: We are inclined to accept a statement by someone we like. (See prejudice.)
- Incremental decision making and escalating commitment – We look at a decision as a small step in a process and this tends to perpetuate a series of similar decisions. This can be contrasted with **zero-based decision making**. (See slippery slope.)
- Attribution asymmetry – We tend to attribute our success to our abilities and talents, but we attribute our failures to bad luck and external factors. We attribute other's success to good luck, and their failures to their mistakes.
- Role fulfillment (Self Fulfilling Prophecy) – We conform to the decision making expectations that others have of someone in our position.
- Underestimating uncertainty and the illusion of control – We tend to underestimate future uncertainty because we tend to believe we have more control over events than we really do. We believe we have control to minimize potential problems in our decisions.

Neuroscience perspective

The anterior cingulate cortex (ACC), orbitofrontal cortex (and the overlapping ventromedial prefrontal cortex) are brain regions involved in decision making processes. A recent neuroimaging study,[8] found distinctive patterns of neural activation in these regions depending on whether decisions were made on the basis of personal volition or following directions from someone else. Patients with damage to the ventromedial prefrontal cortex have difficulty making advantageous decisions

A recent study involving Rhesus monkeys found that neurons in the parietal cortex not only represent the formation of a decision but also signal the degree of certainty (or "confidence") associated with the decision. Another recent study found that lesions to the ACC in the macaque resulted in impaired decision making in the long run of reinforcement guided tasks suggesting that the ACC is responsible for evaluating past reinforcement information and guiding future action.

Emotion appears to aid the decision making process: Decision making often occurs in the face of uncertainty about whether one's choices will lead to benefit or harm (see also Risk). The somatic-marker hypothesis is a neurobiological theory of how decisions are made in the face of uncertain outcome. This theory holds that such decisions are aided by emotions, in the form of bodily states, that are elicited during the deliberation of future consequences and that mark different options for behavior as being advantageous or disadvantageous. This process involves an interplay between neural systems that elicit emotional/bodily states and neural systems that map these emotional/bodily states.

Styles and methods of decision making

Styles and methods of decision making were elaborated by the founder of Predispositioning Theory, Aron Katsenelinboigen. In his analysis on styles and methods Katsenelinboigen referred to the game of chess, saying that “chess does disclose various methods of operation, notably the creation of predisposition—

methods which may be applicable to other, more complex systems. In his book Katsenelinboigen states that apart from the methods (reactive and selective) and sub-methods (randomization, predispositioning, programming), there are two major styles – positional and combinational. Both styles are utilized in the game of chess. According to Katsenelinboigen, the two styles reflect two basic approaches to the uncertainty: deterministic (combinational style) and indeterministic (positional style). Katsenelinboigen's definition of the two styles are the following.

The combinational style is characterized by

- a very narrow, clearly defined, primarily material goal, and
- a program that links the initial position with the final outcome.

In defining the combinational style in chess, Katsenelinboigen writes:

The combinational style features a clearly formulated limited objective, namely the capture of material (the main constituent element of a chess position). The objective is implemented via a well defined and in some cases in a unique sequence of moves aimed at reaching the set goal. As a rule, this sequence leaves no options for the opponent. Finding a combinational objective allows the player to focus all his energies on efficient execution, that is, the player's analysis may be limited to the pieces directly partaking in the combination. This approach is the crux of the combination and the combinational style of play. The positional style is distinguished by

- a positional goal and
- a formation of semi-complete linkages between the initial step and final outcome.

"Unlike the combinational player, the positional player is occupied, first and foremost, with the elaboration of the position that will allow him to develop in the unknown future. In playing the positional style, the player must evaluate relational and material parameters as independent variables. (...) The positional style gives the player the opportunity to develop a position until it becomes pregnant with a combination. However, the combination is not the final goal of the positional player—it helps him to achieve the desirable, keeping in mind a predisposition for the future development. The Pyrrhic victory is the best example of one's inability to think positionally. The positional style serves to

a) create a predisposition to the future development of the position;
b) induce the environment in a certain way;
c) absorb an unexpected outcome in one's favor;
d) avoid the negative aspects of unexpected outcomes.

The positional style gives the player the opportunity to develop a position until it becomes pregnant with a combination. Katsenelinboigen writes:
"As the game progressed and defense became more sophisticated the combinational style of play declined. . . . The positional style of chess does not eliminate the combinational one with its attempt to see the entire program of action in advance.

The positional style merely prepares the transformation to a combination when the latter becomes feasible.

Topic 3 Facilitation

The term **facilitation** is broadly used to describe any activity which makes tasks for others easy. For example:

- Facilitation is used in business and organisational settings to ensure the designing and running of successful meetings.
- Neural facilitation in neuroscience, is the increase in postsynaptic potential evoked by a 2nd impulse.
- Ecological facilitation describes how an organism profits from the presence of another. Examples are nurse plants, which provide shade for new seedlings or saplings (e.g. using an orange tree to provide shade for a newly planted coffee plant), or plants providing shelter from wind chill in arctic environments.

A person who takes on such a role is called a **facilitator**. Specifically:

- A facilitator is used in a variety of group settings, including business and other organisations to describe someone whose role it is to work with group processes to ensure meetings run well and achieve a high degree of consensus.
- The term **facilitator** is used in psychotherapy where the role is more to help group members become aware of the feelings they hold for one another (*see* Group psychotherapy)
- The term **facilitator** is used in education to refer to a specifically trained adult who sits in class with a disabled, or otherwise needy, student to help them follow the lesson that the teacher is giving (*see* Disability)
- The term **facilitator** is used to describe people engaged in the illegal trafficking of human beings across international borders (*see* Human trafficking).
- The term **facilitator** is used to describe those individuals who arrange adoptions by attempting to match available children with prospective adopters.
- The term **facilitator** is used to describe someone who assists people with communication disorders to use communication aids with their hands. See Facilitated communication

Topic 3 Arbitration

Arbitration, a form of alternative dispute resolution (ADR), is a legal technique for the resolution of disputes outside the courts, wherein the parties to a dispute refer it to one or more persons (the "arbitrators", "arbiters" or "arbitral tribunal"), by whose decision (the "award") they agree to be bound. It is a settlement technique in which a third party reviews the case and imposes a decision that is legally binding for both sides. Other forms of ADR include mediation (a form of settlement negotiation

facilitated by a neutral third party) and non-binding resolution by experts. It is more helpful, however, simply to classify arbitration as a form of binding dispute resolution, equivalent to litigation in the courts, and entirely distinct from the other forms of dispute resolution, such as negotiation, mediation, or determinations by experts, which are usually non-binding. Arbitration is most commonly used for the resolution of commercial disputes, particularly in the context of international commercial transactions. The use of arbitration is far more controversial in consumer and employment matters, where arbitration is not voluntary but is instead imposed on consumers or employees through fine-print contracts, denying individuals of their right to access the courts.

Arbitration can be either voluntary or mandatory and can be either binding or non-binding. Non-binding arbitration is, on the surface, similar to mediation. However, the principal distinction is that whereas a mediator will try to help the parties find a middle ground on which to compromise, the (non-binding) arbitrator remains totally removed from the settlement process and will only give a determination of liability and, if appropriate, an indication of the quantum of damages payable.

History

It is not known exactly when formal non-judicial arbitration first began but it can be said with some certainty that arbitration, as a way of resolving disputes predates formal courts. Records from ancient Egypt attest to its use especially with high priests and their interaction with the public. Arbitration was popular both in ancient Greece and in Rome.

Under English law, the first law on arbitration was the Arbitration Act 1697, but when it was passed arbitration was already common. The first recorded judicial decision relating to arbitration was in England in 1610. The noted Elizabethan English legal scholar Sir Edward Coke refers to an earlier decision dating from the reign of Edward IV (which ended in 1483). Early arbitrations at common law suffered from the fatal weakness that either party to the dispute could withdraw the arbitrator's mandate right up until the delivery of the award if things appeared to be going against them (this was rectified in the 1697 Act).

The Jay Treaty of 1794 between Britain and the United States sent unresolved issues regarding debts and boundaries to arbitration, which took 7 years and proved successful.

In the first part of the twentieth century, many countries (France and the United States being good examples) began to pass laws sanctioning and even promoting the use of private adjudication as an alternative to what was perceived to be inefficient court systems.

The growth of international trade however, brought greater sophistication to a process that had previously been largely *ad hoc* in relation to disputes between merchants resolved under the auspices of the *lex mercatoria*. As trade grew, so did the practice of arbitration, eventually leading to the creation of a variant now known as international arbitration, as a means for resolving disputes under international commercial contracts.

Today, arbitration also occurs online, in what is commonly referred to as Online Dispute Resolution, or ODR. Typically, ODR proceedings occur following the filing of a claim online, with the proceedings taking place over the internet, and judgment rendered on the basis of documentation presented.

Nature

Arbitration is a proceeding in which a dispute is resolved by an impartial adjudicator whose decision the parties to the dispute have agreed will be final and binding. Arbitration is not the same as:

- judicial proceedings, although in some jurisdictions, court proceedings are sometimes referred as arbitrationsalternative dispute resolution (or ADR) expert determination
- mediation

Advantages and disadvantages

Parties often seek to resolve their disputes through arbitration because of a number of perceived potential advantages over judicial proceedings:

- when the subject matter of the dispute is highly technical, arbitrators with an appropriate degree of expertise can be appointed (as one cannot "choose the judge" in litigation)
- arbitration is often faster than litigation in court
- arbitration can be cheaper and more flexible for businesses
- arbitral proceedings and an arbitral award are generally non-public, and can be made confidential
- because of the provisions of the New York Convention 1958, arbitration awards are generally easier to enforce in other nations than court judgments
- in most legal systems, there are very limited avenues for appeal of an arbitral award

However, some of the disadvantages of arbitration can be that:

- arbitration agreements are sometimes contained in ancillary agreements, or in small print in other agreements, and consumers and employees sometimes do not know in advance that they have agreed to mandatory binding pre-dispute arbitration by purchasing a product or taking a job
- if the arbitration is mandatory and binding, the parties waive their rights to access the courts and have a judge or jury decide the case

- in some arbitration agreements, the parties are required to pay for the arbitrators, which adds an additional layer of legal cost that can be prohibitive, especially in small consumer disputes
- in some arbitration agreements and systems, the recovery of attorneys' fees is unavailable, making it difficult or impossible for consumers or employees to get legal representation; however most arbitration codes and agreements provide for the same relief that could be granted in court
- if the arbitrator or the arbitration forum depends on the corporation for repeat business, there may be an inherent incentive to rule against the consumer or employee
- there are very limited avenues for appeal, which means that an erroneous decision cannot be easily overturned
- although usually thought to be speedier, when there are multiple arbitrators on the panel, juggling their schedules for hearing dates in long cases can lead to delays
- in some legal systems, arbitral awards have fewer enforcement remedies than judgments; although in the United States, arbitration awards are enforced in the same manner as court judgments and have the same effect
- arbitrators are generally unable to enforce interlocutory measures against a party, making it easier for a party to take steps to avoid enforcement of an award, such as the relocation of assets offshore
- rule of applicable law is not necessarily binding on the arbitrators, although they cannot disregard the law.
- discovery may be more limited in arbitration
- the potential to generate billings by attorneys may be less than pursuing the dispute through trial
- unlike court judgments, arbitration awards themselves are not directly enforceable. A party seeking to enforce an arbitration award must resort to judicial remedies, called an action to "confirm" an award
- although grounds for attacking an arbitration award in court are limited, efforts to confirm the award can be fiercely fought, thus necessitating huge legal expenses that negate the perceived economic incentive to arbitrate the dispute in the first place.

Arbitrability

By their nature, the subject matter of some disputes is not capable of arbitration. In general, two groups of legal procedures cannot be subjected to arbitration:

- Procedures which necessarily lead to a determination which the parties to the dispute may not enter into an agreement upon: Some court procedures lead to judgments which bind all members of the general public, or public authorities in their capacity as such, or third parties, or which are being conducted in the public interest. *Examples*: Until relatively recently (80s), antitrust matters were not arbitrable in the United States. Matters relating to crimes, status and family law are generally not considered to be arbitrable, as the power of the parties to enter into an agreement upon these matters is at least restricted. However, most other disputes that involve private rights between two parties can be resolved using arbitration. In some disputes, parts of claims may be

arbitrable and other parts not. For example, in a dispute over patent infringement, a determination of whether a patent has been infringed could be adjudicated upon by an arbitration tribunal, but the validity of a patent could not: As patents are subject to a system of public registration, an arbitral panel would have no power to order the relevant body to rectify any patent registration based upon its determination.
- Some legal orders exclude or restrict the possibility of arbitration for reasons of the protection of weaker members of the public, e.g. consumers. *Examples*: German law excludes disputes over the rental of living space from any form of arbitrationwhile arbitration agreements with consumers are only considered valid if they are signed by either party, and if the signed document does not bear any other content than the arbitration agreement.

Arbitration agreement

In theory, arbitration is a consensual process; a party cannot be forced to arbitrate a dispute unless he agrees to do so. In practice, however, many fine-print arbitration agreements are inserted in situations in which consumers and employees have no bargaining power. Moreover, arbitration clauses are frequently placed within sealed users' manuals within products, within lengthy click-through agreements on websites, and in other contexts in which meaningful consent is not realistic. Such agreements are generally divided into two types:

- agreements which provide that, if a dispute should arise, it will be resolved by arbitration. These will generally be normal contracts, but they contain an arbitration clause
- agreements which are signed after a dispute has arisen, agreeing that the dispute should be resolved by arbitration (sometimes called a "submission agreement")

The former is the far more prevalent type of arbitration agreement. Sometimes, legal significance attaches to the type of arbitration agreement. For example, in certain Commonwealth countries, it is possible to provide that each party should bear their own costs in a conventional arbitration clause, but not in a submission agreement.

In keeping with the informality of the arbitration process, the law is generally keen to uphold the validity of arbitration clauses even when they lack the normal formal language associated with legal contracts. Clauses which have been upheld include:

- "arbitration in London - English law to apply"suitable arbitration clause"arbitration, if any, by ICC Rules in London"The courts have also upheld clauses which specify resolution of disputes other than in accordance with a specific legal system. These include provision indicating:

- that the arbitrators "must not necessarily judge according to the strict law but as a general rule ought chiefly to consider the principles of practical business""internationally accepted principles of law governing contractual relations"Agreements to refer disputes to arbitration generally have a special status in the eyes of the law. For example, in disputes on a contract, a

common defence is to plead the contract is void and thus any claim based upon it fails. It follows that if a party successfully claims that a contract is void, then each clause contained within the contract, including the arbitration clause, would be void. However, in most countries, the courts have accepted that:

1. a contract can only be declared void by a court or other tribunal; and
2. if the contract (valid or otherwise) contains an arbitration clause, then the proper forum to determine whether the contract is void or not, is the arbitration tribunal. Arguably, either position is potentially unfair; if a person is made to sign a contract under duress, and the contract contains an arbitration clause highly favourable to the other party, the dispute may still referred to that arbitration tribunal. Conversely a court may be persuaded that the arbitration agreement itself is void having been signed under duress. However, most courts will be reluctant to interfere with the general rule which does allow for commercial expediency; any other solution (where one first had to go to court to decide whether one had to go to arbitration) would be self defeating.

Applicable laws

Arbitration is subject to different laws. These may be summarized as follows:

- The law governing the arbitration agreement
- The law governing the arbitral tribunal and its proceedings (lex arbitri - procedural law)
- The law governing the substance of the dispute
- The law governing recognition and enforcement of the award

Severability and law governing the arbitration agreement

The arbitration agreement which is part of the main contract (often referred to as "container contract") is governed by the law which governs the main contract. An important feature of arbitration, however, is severability - the fact that arbitration agreement lives a life of its own and is autonomous of the main agreement. Invoking the invalidity of the main agreement may not necessarily bring with it the invalidity of the arbitration clause. Another feature closely tied to this is "competence-competence" - the ability of the arbitration tribunal to decide on its own jurisdiction. Therefore a party who is trying to avoid arbitration at an early stage by claiming that the main contract is invalid will face the arbitration agreement separate from the main one and the arbitrators deciding on their own competence.

Seat of the arbitration

Most legal systems recognise the concept of a "seat" of the arbitration, which is a geographical and legal jurisdiction to which the arbitration is tied. The seat will normally determine the procedural rules (*lex arbitri*) which the arbitration follows, and the courts which exercise jurisdiction over the seat will have a supervisory role over the conduct of the arbitration.

Parties to the arbitration are free to choose the seat of arbitration and often do so in practice. If they do not, the arbitral tribunal will do it for them. Whereas it is possible to detach procedural law from the seat of arbitration (e.g. seat in Switzerland, English procedural law) this creates confusion as it subjects the arbitration to two controlling and possibly conflicting laws. The procedural law of arbitration, normally determined by the seat, ought to be distinguished from the procedure that the arbitration panel will follow. The latter refers to daily operation of the arbitration and is normally determined either by the institution in question (if arbitration is institutional, e.g. ICC Rules) or by reference to a ready-made procedure (such as the UNCITRAL Rules).

The seat of arbitration might not be the same as the place where proceedings are actually happening. Thus, for instance, an ICC arbitration may have its seat in London (and therefore be governed by the English *lex arbitri* and ICC procedural rules) and most sessions may take place outside the UK.

Law applicable to procedure

The essential matters of procedure -- such as any disagreement over the appointment or replacement of arbitrators, the jurisdiction of the tribunal itself, or the validity of an arbitration award -- are determined by the procedural law of the seat of the arbitration, and may be decided by recourse to courts. The parties normally influence this through their choice of the seat of arbitration or directly through choice of procedural law.

All other matters of procedure are generally determined by the arbitral tribunal itself (depending on national law and respect for due process) and the preferences of the arbitrators, the parties, and their counsel. The arbitrators' power to determine procedural matters normally includes:

- mode of submitting (and challenging) evidence
- time and place of any hearings
- language and translations
- disclosure of documents and other evidence
- use of pleadings and/or interrogatories
- the appointment of experts and assessors

Law applicable to substance

Parties in a commercial dispute will often choose the law applicable to the substance of their dispute. In fact, they are more likely to choose substantive than procedural law as this will have direct impact on the outcome of their dispute. This choice is usually expressed in the arbitration clause itself or at least in part of the contract where the clause is located.

If the parties do not choose the applicable law the arbitral tribunal will. This is normally interpreted as the ability of the tribunal to choose the choice-of-law rules which will, in turn, point to the applicable law. The arbitrators are not strictly

speaking bound by public policy order or mandatory rules of third states but will normally observe them as that increases the chance of the award being recognized.

The tribunal may decide *ex aequo et bono* only if the parties have expressly authorized them to do so.

Law applicable to recognition and enforcement

The law that applies to issues of recognition will always be the law of the state where this recognition is sought. In a large number of states this will be governed by 1958 New York Convention which harmonizes the recognition and enforcement of foreign arbitral awards.

Sources of law

States regulate arbitration through a variety of laws. The main body of law applicable to arbitration is normally contained either in the national Private International Law Act (as is the case in Switzerland) or in a separate law on arbitration (as is the case in England). In addition to this, a number of national procedural laws may also contain provisions relating to arbitration.

By far the most important international instrument on arbitration law is the 1958 New York Convention on Recognition and Enforcement of Foreign Arbitral Awards. Some other relevant international instruments are:

- The Geneva Protocol of 1923
- The Geneva Convention of 1927
- The European Convention of 1961
- The Washington Convention of 1965 (governing settlement of international investment disputes)
- The UNCITRAL Model Law (providing a model for a national law of arbitration)
- The UNCITRAL Arbitration Rules (providing a set of rules for an ad hoc arbitration)

Arbitral tribunal

The term *arbitral tribunal* is used to denote the arbitrator or arbitrators sitting to determine the dispute. The composition of the arbitral tribunal can vary enormously, with either a sole arbitrator sitting, two or more arbitrators, with or without a chairman or umpire, and various other combinations.

In most jurisdictions, an arbitrator enjoys immunity from liability for anything done or omitted whilst acting as arbitrator unless the arbitrator acts in bad faith.

Arbitrations are usually divided into two types:

- *ad hoc* arbitrations and administered arbitrations.

In *ad hoc* arbitrations, the arbitral tribunals are appointed by the parties or by an appointing authority chosen by the parties. After the tribunal has been formed, the appointing authority will normally have no other role and the arbitation will be managed by the tribunal.

In administered arbitration, the arbitration will be administered by a professional arbitration institution providing arbitration services, such as the LCIA in London or the ICC in Paris. Normally the arbitration institution also will be the appointing authority.

Arbitration institutions tend to have their own rules and procedures, and may be more formal. They also tend to be more expensive, and, for procedural reasons, slower.

Duties of the tribunal

The duties of a tribunal will be determined by a combination of the provisions of the arbitration agreement and by the procedural laws which apply in the seat of the arbitration. The extent to which the laws of the seat of the arbitration permit "party autonomy" (the ability of the parties to set out their own procedures and regulations) determines the interplay between the two.

However, in almost all countries the tribunal owes several non-derogable duties. These will normally be:

- to act fairly and impartially between the parties, and to allow each party a reasonable opportunity to put their case and to deal with the case of their opponent (sometimes shortened to: complying with the rules of "natural justice"); and
- to adopt procedures suitable to the circumstances of the particular case, so as to provide a fair means for resolution of the dispute.

Arbitral awards

Although arbitration awards are characteristically an award of damages against a party, in many jurisdictions tribunals have a range of remedies that can form a part of the award. These may include:

1. payment of a sum of money (conventional damages)
2. the making of a "declaration" as to any matter to be determined in the proceedings
3. in some jurisdictions, the tribunal may have the same power as a court to:
    1. order a party to do or refrain from doing something ("injunctive relief")
    2. to order specific performance of a contract
    3. to order the rectification, setting aside or cancellation of a deed or other document.

4. In other jurisdictions, however, unless the parties have expressly granted the arbitrators the right to decide such matters, the tribunal's powers may be limited to deciding whether a party is entitled to damages. It may not have the legal authority to order injunctive relief, issue a declaration, or rectify a contract, such powers being reserved to the exclusive jurisdiction of the courts.

Enforcement of arbitration awards

One of the reasons that arbitration is so popular in international trade as a means of dispute resolution, is that it is often easier to enforce an arbitration award in a foreign country than it is to enforce a judgment of the court.

Under the New York Convention 1958, an award issued a contracting state can generally be freely enforced in any other contracting state, only subject to certain, limited defences.

Only foreign arbitration awards can be subject to recognition and enforcement pursuant to the New York Convention. An arbitral decision is foreign where the award was made in a state other than the state of recognition or where foreign procedural law was used.[21]

Virtually every significant commercial country in the world is a party to the Convention, but relatively few countries have a comprehensive network for cross-border enforcement of judgments of the court.

The other characteristic of cross-border enforcement of arbitration awards that makes them appealing to commercial parties is that they are not limited to awards of damages. Whereas in most countries only monetary judgments are enforceable in the cross-border context, no such restrictions are imposed on arbitration awards and so it is theoretically possible (although unusual in practice) to obtain an injunction or an order for specific performance in an arbitration proceeding which could then be enforced in another New York Convention contracting state.

The New York Convention is not actually the only treaty dealing with cross-border enforcement of arbitration awards. The earlier Geneva Convention on the Execution of Foreign Arbitral Awards 1927 remains in force, but the success of the New York Convention means that the Geneva Convention is rarely utilised in practise.

Arbitration with sovereign governments

Certain international conventions exist in relation to the enforcement of awards against states.

- The Washington Convention 1965 relates to settlement of investment disputes between states and citizens of other countries. The Convention created the International Centre for Settlement of Investment Disputes (or ICSID). Compared to other arbitration institutions, relatively few awards have been rendered under ICSID.

- The Algiers Declaration of 1981 established the Iran-US Claims Tribunal to adjudicate claims of American corporations and individuals in relation to expropriated property during the Islamic revolution in Iran in 1979. The tribunal has not been a notable success, and has even been held by an English court to be void under its own governing law.

Challenge

Generally speaking, by their nature, arbitration proceedings tend not to be subject to appeal, in the ordinary sense of the word.

However, in most countries, the court maintains a supervisory role to set aside awards in extreme cases, such as fraud or in the case of some serious legal irregularity on the part of the tribunal.

Only domestic arbitral awards (i.e. those where the seat of arbitration is located in the same state as the court seised) are subject to set aside procedure.

In American arbitration law there exists a small but significant body of case law which deals with the power of the courts to intervene where the decision of an arbitrator is in fundamental disaccord with the applicable principles of law or the contract. Unfortunately there is little agreement amongst the different American judgments and textbooks as to whether such a separate doctrine exists at all, or the circumstances in which it would apply. There does not appear to be any recorded judicial decision in which it has been applied. However, conceptually, to the extent it exists, the doctrine would be an important derogation from the general principle that awards are not subject to review by the courts.

Costs

In many legal systems - both common law and civil law - it is normal practice for the courts to award legal costs against a losing party, with the winner becoming entitled to recover an approximation of what it spent in pursuing its claim (or in defense of a claim). The United States is a notable exception to this rule, as except for certain extreme cases, a prevailing party in a US legal proceeding does not become entitled to recoup its legal fees from the losing party.

Like the courts, arbitral tribunals generally have the same power to award costs in relation to the determination of the dispute. In international arbitration as well as domestic arbitrations conducted in countries where courts may award costs against a losing party, the arbitral tribunal will also determine the portion of the arbitrators' fees that the losing party is required to bear.

Nomenclature

As methods of dispute resolution, arbitration procedure can be varied to suit the needs of the parties. Certain specific "types" of arbitration procedure have developed, particularly in North America.

- **Judicial Arbitration** is, usually, not arbitration at all, but merely a court process which refers to itself as arbitration, such as small claims arbitration before the County Courts in the United Kingdom.

- **High-Low Arbitration**, or **Bracketed Arbitration**, is an arbitration wherein the parties to the dispute agree in advance the limits within which the arbitral tribunal must render its award. It is only generally useful where liability is not in dispute, and the only issue between the party is the amount of compensation. If the award is lower than the agreed minimum, then the defendant only need pay the lower limit; if the award is higher than the agreed maximum, the claimant will receive the upper limit. If the award falls within the agreed range, then the parties are bound by the actual award amount. Practice varies as to whether the figures may or may not be revealed to the tribunal, or whether the tribunal is even advised of the parties' agreement.

- **Non-Binding Arbitration** is a process which is conducted as if it were a conventional arbitration, except that the award issued by the tribunal is not binding on the parties, and they retain their rights to bring a claim before the courts or other arbitration tribunal; the award is in the form of an independent assessment of the merits of the case, designated to facilitate an out-of-court settlement.

- **Pendulum Arbitration** refers to a determination in industrial disputes where an arbitrator has to resolve a claim between a trade union and management by making a determination of which of the two sides has the more reasonable position. The arbitrator must choose only between the two options, and cannot split the difference or select an alternative position. It was initiated in Chile in 1979 and has proved to be a very effective mechanism.

    - This form of arbitration is also known as **Baseball Arbitration**. It takes its name from a practice which arose in relation to salary arbitration in Major League Baseball.

    - **Night Baseball Arbitration** is a variation of baseball arbitration where the figures are not revealed to the arbitration tribunal. The arbitrator will determinate the quantum of the claim in the usual way, and the parties agree to accept and be bound by the figure which is closest to the tribunal's award.

Topic 4

Alternative dispute resolution

Alternative dispute resolution or external Dispute Resolution in some countries, such as Australia includes dispute resolution processes and techniques that fall outside of the government judicial process. Despite historic resistance to ADR by both parties and their advocates, ADR has gained widespread acceptance among both the general public and the legal profession in recent years. In fact, some courts now require some parties to resort to ADR of some type, usually mediation, before

permitting the parties' cases to be tried. The rising popularity of ADR can be explained by the increasing caseload of traditional courts, the perception that ADR imposes fewer costs than litigation, a preference for confidentiality, and the desire of some parties to have greater control over the selection of the individual or individuals who will decide their dispute.

Alternative dispute resolution (**ADR**) tends to transform into **Appropriate dispute resolution**. (“Alternative ways of solving conflicts (ADR)”, Zeno Sustac & Claudiu Ignat, 2008).

Types and features of alternative dispute resolution

ADR is generally classified into at least four types: negotiation, mediation, collaborative law, and arbitration. (Sometimes a fifth type, conciliation, is included as well, but for present purposes it can be regarded as a form of mediation. See conciliation for further details.) ADR can be used alongside existing legal systems such as Sharia Courts within Common Law jurisdictions such as the UK.

ADR traditions vary somewhat by country and culture. There are significant common elements which justify a main topic, and each country or region's difference should be delegated to sub-pages.

ADR or Alternative Dispute Resolution is of two historic types. First, methods for resolving disputes outside of the official judicial mechanisms. Second, informal methods attached to or pendant to official judicial mechanisms. There are in addition free-standing and or independent methods, such as mediation programs and ombuds offices within organizations. The methods are similar, whether or not they are pendant, and generally use similar tool or skill sets, which are basically sub-sets of the skills of negotiation.

ADR includes informal tribunals, informal mediative processes, formal tribunals and formal mediative processes. The classic formal tribunal forms of ADR are arbitration (both binding and advisory or non-binding) and private judges (either sitting alone, on panels or over summary jury trials). The classic formal mediative process is referral for mediation before a court appointed mediator or mediation panel. Structured transformative mediation as used by the U.S. Postal Service is a formal process. Classic informal methods include social processes, referrals to non-formal authorities (such as a respected member of a trade or social group) and intercession. The major differences between formal and informal processes are (a) pendency to a court procedure and (b) the possession or lack of a formal structure for the application of the procedure.

For example, freeform negotiation is merely the use of the tools without any process. Negotiation within a labor arbitration setting is the use of the tools within a highly formalized and controlled setting.

Calling upon an organizational ombudsman's office is never a formal procedure. (Calling upon an organizational ombudsman is always voluntary; by the

International Ombudsman Association Standards of practice, no one can be compelled to use an ombuds office.)

Informal referral to a co-worker known to help people work out issues is an informal procedure. Co-worker interventions are usually informal.

Conceptualizing ADR in this way makes it easy to avoid confusing tools and methods (does negotiation once a law suit is filed cease to be ADR? If it is a tool, then the question is the wrong question) (is mediation ADR unless a court orders it? If you look at court orders and similar things as formalism, then the answer is clear: court annexed mediation is merely a formal ADR process).

Dividing lines in ADR processes are often provider driven rather than consumer driven. Educated consumers will often choose to use many different options depending on the needs and circumstances that they face.

Finally, it is important to realize that conflict resolution is one major goal of all the ADR processes. If a process leads to resolution, it is a dispute resolution process. The salient features of each type are as follows:

1. In negotiation, participation is voluntary and there is no third party who facilitates the resolution process or imposes a resolution. (NB – a third party like a chaplain or organizational ombudsperson or social worker or a skilled friend may be coaching one or both of the parties behind the scene, a process called "Helping People Help Themselves" – see Helping People Help Themselves, in Negotiation Journal July 1990, pp. 239–248, which includes a section on helping someone draft a letter to someone who is perceived to have wronged them.)
2. In mediation, there is a third party, a mediator, who facilitates the resolution process (and may even suggest a resolution, typically known as a "mediator's proposal"), but does *not* impose a resolution on the parties. In some countries (for example, the United Kingdom), ADR is synonymous with what is generally referred to as mediation in other countries.
3. In collaborative law or collaborative divorce, each party has an attorney who facilitates the resolution process within specifically contracted terms. The parties reach agreement with support of the attorneys (who are trained in the process) and mutually-agreed experts. No one imposes a resolution on the parties. However, the process is a formalized process that is part of the litigation and court system. Rather than being an Alternative Resolution methodology it is a litigation variant that happens to rely on ADR like attitudes and processes.
4. In arbitration, participation is typically voluntary, and there is a third party who, as a private judge, imposes a resolution. Arbitrations often occur because parties to contracts agree that any future dispute concerning the agreement will be resolved by arbitration. This is known as a 'Scott Avery Clause'. In recent years, the enforceability of arbitration clauses, particularly in the context of consumer agreements (e.g., credit card agreements), has drawn scrutiny from courts. Although parties may appeal arbitration outcomes to courts, such appeals face an exacting standard of review.

Beyond the basic types of alternative dispute resolutions there are other different forms of ADR:

- Case evaluation: a non-binding process in which parties present the facts and the issues to a neutral case evaluator who advises the parties on the strengths and weaknesses of their respective positions, and assesses how the dispute is likely to be decided by a jury or other adjudicator.

- Early neutral evaluation: a process that takes place soon after a case has been filed in court. The case is referred to an expert who is asked to provide a balanced and neutral evaluation of the dispute. The evaluation of the expert can assist the parties in assessing their case and may influence them towards a settlement.

- Family group conference: a meeting between members of a family and members of their extended related group. At this meeting (or often a series of meetings) the family becomes involved in learning skills for interaction and in making a plan to stop the abuse or other ill-treatment between its members.

- Neutral fact-finding: a process where a neutral third party, selected either by the disputing parties or by the court, investigates an issue and reports or testifies in court. The neutral fact-finding process is particularly useful for resolving complex scientific and factual disputes.

- Ombuds: third party selected by an institution – for example a university, hospital, corporation or government agency – to deal with complaints by employees, clients or constituents. The Standards of Practice for Organizational Ombuds may be found at http://www.ombudsassociation.org/standards/.

An organizational ombudsman works within the institution to look into complaints independently and impartially

"Alternative" dispute resolution is usually considered to be alternative to litigation. It also can be used as a colloquialism for allowing a dispute to drop or as an alternative to violence.

In recent years there has been more discussion about taking a systems approach in order to offer different kinds of options to people who are in conflict, and to foster "**appropriate**" dispute resolution. (See Lynch, J. "ADR and Beyond: A Systems Approach to Conflict Management", Negotiation Journal, Volume 17, Number 3, July 2001, Volume, p. 213.)

That is, some cases and some complaints in fact ought to go to formal grievance or to court or to the police or to a compliance officer or to a government IG. Other conflicts could be settled by the parties if they had enough support and coaching, and yet other cases need mediation or arbitration. Thus "alternative" dispute resolution usually means a method that is not the courts. "Appropriate" dispute resolution considers **all** the possible responsible options for conflict resolution that

are relevant for a given issue. Arbitration and mediation are the best known and most commonly used forms of ADR within the UK. However in recent years adjudication is rapidly gaining attention as a quick, fair and cheap was to settle disputes.

ADR can increasingly be conducted online, which is known as online dispute resolution (ODR, which is mostly a buzzword and an attempt to create a distinctive product). It should be noted, however, that ODR services can be provided by government entities, and as such may form part of the litigation process. Moreover, they can be provided on a global scale, where no effective domestic remedies are available to disputing parties, as in the case of the UDRP and domain name disputes. In this respect, ODR might not satisfy the "alternative" element of ADR.

Country-specific examples

China

Chinese trained mediators have a long history and were practicing in court annexed mediations in the United States more than thirty years ago.

Modern era

Traditional people's mediation has always involved the parties remaining in contact for most or all of the mediation session. The innovation of separating the parties after (or sometimes before) a joint session and conducting the rest of the process without the parties in the same area was a major innovation and one that dramatically improved mediation's success rate.

Traditional arbitration involved heads of trade guilds or other dominant authorities settling disputes. The modern innovation was to have commercial vendors of arbitrators, often ones with little or no social or political dominance over the parties. The advantage was that such persons are much more readily available. The disadvantage is that it does not involve the community of the parties. When wool contract arbitration was conducted by senior guild officials, the arbitrator combined a seasoned expert on the subject matter with a socially dominant individual whose patronage, good will and opinion were important.

Private judges and summary jury trials are cost and time savings processes that have had limited penetration due to the alternatives becoming more robust and accepted.

Iceland

The Saga of Burnt Njal is the story of a mediator who was so successful that he eventually threatened the local power structure. It ends in tragedy with the unlawful burning of Njal alive in his home, the escape of a friend of the family, a mini-war and the eventual ending of the dispute by the intermarriage of the two strongest survivors. It illustrates that mediation was a powerful process in Iceland before the era of kings.

Roman Empire

Latin has a number of terms for mediator that predate the Roman Empire. Any time there are formal adjudicative processes it appears that there are informal ones as well. It is probably fruitless to attempt to determine which group had mediation first.

India

Alternative dispute resolution in India is not new and it was in existence even under the previous Arbitration Act, 1940. The Arbitration and Conciliation Act, 1996 has been enacted to accommodate the harmonisation mandates of UNCITRAL Model. To streamline the Indian legal system the traditional civil law known as Code of Civil Procedure, (CPC) 1908 has also been amended and section 89 has been introduced. Section 89 (1) of CPC provides an option for the settlement of disputes outside the court. It provides that where it appears to the court that there exist elements, which may be acceptable to the parties, the court may formulate the terms of a possible settlement and refer the same for arbitration, conciliation, mediation or judicial settlement.

Due to extremely slow judicial process, there has been a big thrust on Alternate Dispute Resolution mechanisms in India. While Arbitration and Conciliation Act, 1996 is a fairly standard western approach towards ADR, the Lok Adalat system constituted under National Legal Services Authority Act, 1987 is a uniquely Indian approach.

Arbitration and Conciliation Act, 1996

Part I of this act formalizes the process of Arbitration and Part III formalizes the process of Conciliation. (Part II is about Enforcement of Foreign Awards under New York and Geneva Conventions.)

Arbitration

The process of arbitration can start only if there exists a valid Arbitration Agreement between the parties prior to the emergence of the dispute. As per Section 7, such an agreement must be in writing. The contract regarding which the dispute exists, must either contain an arbitration clause or must refer to a separate document signed by the parties containing the arbitration agreement. The existence of an arbitration agreement can also be inferred by written correspondence such as letters, talex, or telegrams which provide a record of the agreement. An exchange of statement of claim and defence in which existence of an arbitration agreement is alleged by one party and not denied by other is also considered as valid written arbitration agreement.

Any party to the dispute can start the process of appointing arbitrator and if the other party does not cooperate, the party can approach the office of Chief Justice for appointment of an arbitrator. There are only two grounds upon which a party can challenge the appointment of an arbitrator – reasonable doubt in the impartiality of the arbitrator and the lack of proper qualification of the arbitrator as required by the

arbitration agreement. A sole arbitrator or a panel of arbitrators so appointed constitute the Arbitration Tribunal.

Except for some interim measures, there is very little scope for judicial intervention in the arbitration process. The arbitration tribunal has jurisdiction over its own jurisdiction. Thus, if a party wants to challenge the jurisdiction of the arbitration tribunal, it can do so only before the tribunal itself. If the tribunal rejects the request, there is little the party can do accept to approach a court after the tribunal makes an award. Section 34 provides certain grounds upon which a party can appeal to the principal civil court of original jurisdiction for setting aside the award.

Once the period for filing an appeal for setting aside an award is over, or if such an appeal is rejected, the award is binding on the parties and is considered as a decree of the court.

Conciliation

Conciliation is a less formal form of arbitration. This process does not require an existence of any prior agreement. Any party can request the other party to appoint a conciliator. One conciliator is preferred but two or three are also allowed. In case of multiple conciliators, all must act jointly. If a party rejects an offer to conciliate, there can be no conciliation.

Parties may submit statements to the conciliator describing the general nature of the dispute and the points at issue. Each party sends a copy of the statement to the other. The conciliator may request further details, may ask to meet the parties, or communicate with the parties orally or in writing. Parties may even submit suggestions for the settlement of the dispute to the conciliator.

When it appears to the conciliator that elements of settlement exist, he may draw up the terms of settlement and send it to the parties for their acceptance. If both the parties sign the settlement document, it shall be final and binding on both.

Note that in USA, this process is similar to Mediation. However, in India, Mediation is different from Conciliation and is a completely informal type of ADR mechanism.

Lok Adalat

It roughly means "People's court". India has had a long history of resolving disputes through the mediation of village elders. The system of Lok Adalats is an improvement on that and is based on Gandhian principles. This is a non-adversarial system, where by mock courts (called Lok Adalats) are held by the State Authority, District Authority, Supreme Court Legal Services Committee, High Court Legal Services Committee, or Taluk Legal Services Committee, periodically for exercising such jurisdiction as they thinks fit. These are usually presided by retired judge, social activists, or members of legal profession. It does not have jurisdiction on matters related to non-compoundable offences.

There is no court fee and no rigid procedural requirement (i.e. no need to follow process given by Civil Procedure Code or Evidence Act), which makes the process very fast. Parties can directly interact with the judge, which is not possible in regular courts.

Cases that are pending in regular courts can be transferred to a Lok Adalat if both the parties agree. A case can also be transferred to a Lok Adalat if one party applies to the court and the court sees some chance of settlement after giving an opportunity of being heard to the other party.

The focus in Lok Adalats is on compromise. When no compromise is reached, the matter goes back to the court. However, if a compromise is reached, an award is made and is binding on the parties. It is enforced as a decree of a civil court. An important aspect is that the award is final and cannot be appealed, not even under Article 226 because it is a judgement by consent.

All proceedings of a Lok Adalat are deemed to be judicial proceedings and every Lok Adalat is deemed to be a Civil Court.

Permanent Lok Adalat for Public Utility Services

In order to get over the major drawback in the existing scheme of organisation of Lok Adalats under Chapter VI of the Legal Services Authorities Act, 1987, in which if the parties do not arrive at any compromise or settlement, the unsettled case is either returned back to the Court of law or the parties are advised to seek remedy in a court of law, which causes unnecessary delay in dispensation of justice, Chapter VI A was introduced in the Legal Services Authorities Act, 1987, by Act No.37/2002 with effect from 11-06-2002 providing for a Permanent Lok Adalat to deal with pre-litigation, conciliation and settlement of disputes relating to Public Utility Services, as defined u/sec.22 A of the Legal Services Authorities Act, 1987, at pre-litigation stage itself, which would result in reducing the work load of the regular courts to a great extent.

- Permanent Lok Adalat for Public Utility Services, Hyderabad, India

Lok Adalat (people's courts), established by the government, settles dispute through conciliation and compromise. The First Lok Adalat was held in Chennai in 1986. Lok Adalat accepts the cases which could be settled by conciliation and compromise, and pending in the regular courts within their jurisdiction.

The Lok Adalat is presided over by a sitting or retired judicial officer as the chairman, with two other members, usually a lawyer and a social worker. There is no court fee. If the case is already filed in the regular court, the fee paid will be refunded if the dispute is settled at the Lok Adalat. The procedural laws, and the Evidence Act are not strictly followed while assessing the merits of the claim by the Lok Adalat.

Main condition of the Lok Adalat is that both parties in dispute should agree for settlement. The decision of the Lok Adalat is binding on the parties to the dispute

and its order is capable of execution through legal process. No appeal lies against the order of the Lok Adalat.

Lok Adalat is very effective in settlement of money claims. Disputes like partition suits, damages and matrimonial cases can also be easily settled before Lok Adalat as the scope for compromise through an approach of give and take is high in these cases.

Lok Adalat is a boon to the litigant public, where they can get their disputes settled fast and free of cost.

Pakistan

The relevant laws (or particular provisions) dealing with the ADR are summarised as under:

1. S.89-A of the Civil Procedure Code, 1908 (as amended in 2002) read with Order X Rule 1-A (deals with alternative dispute resolution methods). 2. The Small Claims and Minor Offences Courts Ordinance, 2002. 3. Sections 102–106 of the Local Government Ordinance, 2001. 4. Sections 10 and 12 of the Family Courts Act, 1964. 5. Chapter XXII of the Code of Criminal Procedure, 1898 (summary trial provisions). 6. The Arbitration Act, 1940. 7. Articles 153–154 of the Constitution of Pakistan, 1973 (Council of Common Interest) 8. Article 156 of the Constitution of Pakistan, 1973 (National Economic Council) 9. Article 160 of the Constitution of Pakistan, 1973 (National Finance Commission) 10.Article 184 of the Constitution of Pakistan, 1973 (Original Jurisdiction when federal or provincial governments are at dispute with one another)

ADR in the US Navy

SECNAVINST 5800.13A established the DON ADR Program Office with the following missions:

- Coordinate ADR policy and initiatives;
- Assist activities in securing or creating cost effective ADR techniques or local programs;
- Promote the use of ADR, and provide training in negotiation and ADR methods;
- Serve as legal counsel for in-house neutrals used on ADR matters; and,
- For matters that do not use in-house neutrals, the program assists DON attorneys and other representatives concerning issues in controversy that are amenable to using ADR.

The ADR Office also serves as the point of contact for questions regarding the use of ADR. The Assistant General Counsel (ADR) serves as the “Dispute Resolution Specialist” for the DON, as required by the Administrative Dispute Resolution Act of 1996. Members of the office represent the DON’s interests on a variety of DoD and interagency working groups that promote the use of ADR within the Federal Government.

Additional resources

Cornell University's Scheinman Institute on Conflict Resolution

Cornell's ILR School has joined forces with Cornell's Law School to present the country's most comprehensive conflict resolution program focusing on workplace alternative dispute resolution (ADR). The Martin and Laurie Scheinman Institute on Conflict Resolution mission is to educate the next generation of neutrals – arbitrators, mediators and facilitators – who can help resolve disputes between employers and employees, both unionized and non-unionized. The Institute provides training for undergraduate and graduate students, consultation and evaluation, and conducts research. It also offers courses in two- to five-day sessions designed for professionals who are interested in or practicing in the workplace dispute resolution field. These highly intensive and participatory courses are coordinated by Cornell ILR faculty and are held in the ILR School's conference center in Manhattan and on the Ithaca campus. Participants can earn two certificates, Workplace Alternative Dispute Resolution and Conflict Management and Labor Arbitration.

Fordham Law School's Dispute Resolution Program

Fordham Law School’s Dispute Resolution program placed in the top 10 of U.S. News and World Report's 2008 rankings of the best Dispute Resolution programs in the nation, according to the recently-released rankings. Along with Fordham's Clinical Training program, the Dispute Resolution program is the top-ranked specialty program at Fordham Law School. The Alternative Dispute Resolution program at Fordham combines an integrated agenda of teaching, scholarship, and practice in conflict resolution within the national and international communities. In addition to the classroom and clinical experience, the law school's student-run Dispute Resolution Society competes in ABA-sponsored interschool competitions as well as international mediation and arbitration competitions. In 2008 the Society's teams won the ABA Regional Negotiation Competition, placed third overall in the International Chamber of Commerce Commercial Mediation Competition in Paris, and reached the semifinals of the Willem C. Vis (East) International Commercial Arbitration Competition in Hong Kong. Additionally, Fordham's Dispute Resolution Society hosts an annual symposium on current Dispute Resolution topics and also teaches a class on dispute resolution skills to seniors at the Martin Luther King, Jr. High School in New York City.

Straus Institute for Dispute Resolution

Pepperdine University School of Law’s Straus Institute for Dispute Resolution provides professional training and academic programs in dispute resolution including a Certificate, Masters in Dispute Resolution (MDR) and Masters of Law in Dispute Resolution (LLM). Straus provides education to law and graduate students, as well as mid-career professionals in areas of mediation, negotiation, arbitration, international dispute resolution and peacemaking. The Straus Institute has consistently ranked the number one Dispute Resolution school in the nation for the past 5 years, and has remained among the top 10 schools over the last decade.

Harvard Program on Negotiation

"The [Harvard] Program on Negotiation (PON) is a university consortium dedicated to developing the theory and practice of negotiation and dispute resolution. As a community of scholars and practitioners, PON serves a unique role in the world negotiation community. Founded in 1983 as a special research project at Harvard Law School, PON includes faculty, students, and staff from Harvard University, Massachusetts Institute of Technology and Tufts University. Harvard currently offers 12 week courses on negotiation and mediation for participants from all disciplines and professions as well as weekend seminars taught by their professors. The Harvard PON program is currently ranked #3 falling from #2 last year according to the US World and News Report, and has also remained among the top 10 schools over the last decade.

CUNY Dispute Resolution Consortium

The City University of New York Dispute Resolution Consortium (CUNY DRC) serves as an intellectual home to dispute-resolution faculty, staff and students at the City University of New York and to the diverse dispute-resolution community in New York City. At the United States' largest urban university system, the CUNY DRC has become a focal point for furthering academic and applied conflict resolution work in one of the world's most diverse cities. The CUNY DRC conducts research and innovative program development, has co-organized countless conferences, sponsored training programs, resolved a wide range of intractable conflicts, published research working papers and a newsletter. It also maintains an extensive database of those interested in dispute resolution in New York City, a website with resources for dispute resolvers in New York City and since , the CUNY DRC assumed a leadership role for dispute-resolvers in New York City by establishing an extensive electronic mailing list, sponsoring monthly breakfast meetings, conducting research on responses to catastrophes, and managing a public awareness initiative to further the work of dispute resolvers.

CPR Institute for Dispute Resolution

- The International Institute for Conflict Prevention and Resolution, known as the CPR Institute, is a New York City membership-based nonprofit organization that promotes excellence and innovation in public and private dispute resolution, serving as a primary multinational resource for avoidance, management, and resolution of business-related disputes.

The CPR Institute was founded in 1979 as the Center for Public Resources by a coalition of leading corporate general counsel dedicated to identifying and applying appropriate alternative solutions to business disputes, thereby mitigating the extraordinary costs of lengthy court trials.

CPR’s mission is “to spearhead innovation and promote excellence in public and private dispute resolution, and to serve as a primary multinational resource for avoidance, management and resolution of business-related and other disputes. CPR

is a nonprofit educational corporation existing under the New York state laws, and is tax exempt pursuant to Section 501(c)(3) of the U.S. Internal Revenue Code.

It is governed by a board of directors, and its priorities and policies are guided in large part by consultation with an executive advisory committee. Its funding derives in principal part from the annual contributions of its member organizations, and from its mission-related programming. The various operations and activities that fulfill the Institute's mission are captured in the acronym of its name:

C: CPR convenes legal and business leadership to develop, and encourage the exchange of, best practices in avoiding, managing and resolving disputes.

P: CPR publishes its own work and that of other like-minded organizations, making resources available to a global community of problem-solvers.

R: CPR helps to resolve complex disputes among sophisticated parties, by devising rules, protocols and best practices, and by providing disputants with resources and consulting expertise in selecting appropriate methods and neutrals to assist in the dispute resolution process.

ICAR

Established at George Mason as an alternative to a sociology program due to Virginia's then policy against duplicating graduate schools, it was the nation's first major dispute resolution graduate program. It has been a major success.

Mediation

Mediation, a form of alternative dispute resolution (ADR) or "appropriate dispute resolution", aims to assist two (or more) disputants in reaching an agreement. The parties themselves determine the conditions of any settlements reached— rather than accepting something imposed by a third party. The disputes may involve (as parties) states, organizations, communities, individuals or other representatives with a vested interest in the outcome.

Mediation, in a broad sense, consists of a cognitive process of reconciling mutually interdependent, opposed terms as what one could loosely call "an interpretation" or "an understanding of". The German philosopher Hegel uses the term 'dialectical unity' to designate such thought-processes. This article discusses the legal communications usage of the term. Other Wikipedia articles, such as Critical Theory, treat other usages or "senses" of the term "mediation," as for example cultural and biological.

Mediators use appropriate techniques and/or skills to open and/or improve dialogue between disputants, aiming to help the parties reach an agreement (with concrete effects) on the disputed matter. Normally, all parties must view the mediator as impartial. Disputants may use mediation in a variety of disputes, such as commercial, legal, diplomatic, workplace, community and family matters. A third-party representative may contract and mediate between (say) unions and

corporations. When a workers' union goes on strike, a dispute takes place, and the corporation hires a third party to intervene in attempt to settle a contract or agreement between the union and the corporation.

Mediation is the only way assisted by one third, which promotes freedom of choice of protagonists in a conflict

History of mediation

The activity of mediation in itself appeared in very ancient times. Historians presume early cases in Phoenician commerce (but suppose its use in Babylon, too). The practice developed in Ancient Greece (which knew the non-marital mediator as a *proxenetas*), then in Roman civilization, (Roman law, starting from Justinian's *Digest* of 530 - 533 CE) recognized mediation. The Romans called mediators by a variety of names, including *internuncius*, *medium*, *intercessor*, *philantropus*, *interpolator*, *conciliator*, *interlocutor*, *interpres*, and finally *mediator*.

Some cultures regarded the mediator as a sacred figure, worthy of particular respect; and the role partly overlapped with that of traditional wise men or tribal chief.

Mediation and conciliation

"Conciliation" sometimes serves as an umbrella-term that covers all mediation and facilitative and advisory dispute-resolution processes. Neither process determines an outcome, and both share many similarities. For example, both processes involve a neutral third-party who has no enforcing powers.

One significant difference between conciliation and mediation lies in the fact that conciliators possess expert knowledge of the domain in which they conciliate. The conciliator can make suggestions for settlement terms and can give advice on the subject-matter. Conciliators may also use their role to actively encourage the parties to come to a resolution. In certain types of dispute the conciliator has a duty to provide legal information. This helps any agreement reached to comply with any relevant statutory framework pertaining to the dispute. Therefore conciliation may include an advisory aspect.

Mediation works purely facilitatively: the practitioner has no advisory role. Instead, a mediator seeks to help parties to develop a shared understanding of the conflict and to work toward building a practical and lasting resolution.

Several different styles of mediation exist: evaluative, facilitative, and transformative. Evaluative mediation has somewhat of an advisory role in that its practitioners evaluate the strengths and weaknesses of each side's argument should they go to court; whereas facilitative mediators and transformative mediators do not do this.

Furthermore, the definitions of mediation used by the different styles of mediation differ in that evaluative mediation has the main drive and goal of settlement, while transformative mediation, in contrast, looks at conflict as a crisis in communication and seeks to help resolve the conflict, thereby allowing people to feel empowered in

themselves and better about each other. The agreement that arises from this type of mediation occurs as a natural outcome of the resolution of conflict.

Both mediation and conciliation serve to identify the disputed issues and to generate options that help disputants reach a mutually-satisfactory resolution. They both offer relatively flexible processes; and any settlement reached should have the agreement of all parties. This contrasts with litigation, which normally settles the dispute in favour of the party with the strongest legal argument. In-between the two operates collaborative law, which uses a facilitative process where each party has counsel.

Why choose mediation

Several reasons exist for choosing mediation over other channels of dispute resolution (such as those involving attorneys and courts).

- Parties to a dispute may choose mediation as (often) a less expensive route to follow for dispute resolution. While a mediator may charge a fee comparable to that of an attorney, the mediation process generally takes much less time than moving a case through standard legal channels. While a case in the hands of a lawyer or filed in court may take months or even years to resolve, a case in mediation usually achieves a resolution in a matter of hours. Taking less time means expending less money on hourly fees and costs.

- Mediation offers a confidential process. While court hearings of cases happen in public, whatever happens in mediation remains strictly confidential. No one but the parties to the dispute and the mediator(s) know what has gone on in the mediation forum. In fact, confidentiality in mediation has such importance that in most cases the legal system cannot force a mediator to testify in court as to the content or progress of a mediation. Many mediators actually destroy their notes taken during a mediation once that mediation has finished. The only exceptions to such strict confidentiality usually involve child abuse or actual or threatened criminal acts.

- Mediation offers multiple and flexible possibilities for resolving a dispute and for the control the parties have over the resolution. In a case filed in court, the parties will obtain a resolution, but a resolution thrust upon the parties by the judge or jury. The result probably will leave neither party to the dispute totally happy. In mediation, on the other hand, the parties have control over the resolution, and the resolution can be unique to the dispute. Often, solutions developed by the parties are ones that a judge or jury could not provide. Thus, mediation is more likely to produce a result that is mutually agreeable, or win/win, for the parties. And because the result is attained by the parties working together and is mutually agreeable, the compliance with the mediated agreement is usually high. This also results in less costs, because the parties do not have to seek out the aid of an attorney to force compliance with the agreement. The mediated agreement is, however, fully enforceable in a court of law.

- The mediation process consist of a mutual endeavor. Unlike in negotiations (where parties are often entrenched in their positions), parties to a mediation usually seek out mediation because they are ready to work toward a resolution to their dispute. The mere fact that parties are willing to mediate in most circumstances means that they are ready to "move" their position. Since both parties are willing to work toward resolving the case, they are more likely to work with one another than against one another. The parties thus are amenable to understanding the other party's side and work on underlying issues to the dispute. This has the added benefit of often preserving the relationship the parties had before the dispute.

- Finally, but certainly not least, and as mentioned earlier in this article, the mediation takes place with the aid of a mediator who is a neutral third party. A good mediator is trained in conflict resolution and in working with difficult situations. The good mediator is likely to work as much with the emotional aspects and relationship aspects of a case as he or she is to work on the "topical" issues of the matter. The mediator, as a neutral, gives no legal advice, but guides the parties through the problem solving process. The mediator may or may not suggest alternative solutions to the dispute. Whether he or she offers advice or not, the trained mediator helps the parties think "outside of the box" for possible solutions to the dispute, thus enabling the parties to find the avenue to dispute resolution that suits them best.

Mediation in the franchising sector

Franchise-agreements represent ongoing commercial agreements between the contracting parties. The agreements usually have elements of an imbalance of bargaining power and of an imbalance of business experience between the franchisee and franchisor; and the parties also face many external commercial pressures.

The franchising code of conduct functions as a mandatory code under the TPA. All franchise agreements must have a clause that requires dispute resolution. Mediation in this field works because it can identify alternatives for the parties and then the parties can work together to solve the dispute. This type of mediation has formal procedures: for example: whoever wishes to initiate the mediation must advise the respondent in writing, outlining the nature of the dispute ,and they will then have three weeks to agree to a method of resolving the dispute otherwise they may go to mediation. For further information on mediation in the franchise community, and links to further resources, see www.FranchiseMediation.org.

Early neutral evaluation and mediation

The technique of early neutral evaluation (ENE) provides early focus in complex commercial disputes, and — based on that focus — offers a basis for sensible case-management or a suggested resolution of the entire case in its very early stages.

In early neutral evaluation, an evaluator acts as a neutral person to assess the strengths and weaknesses of each of the parties and to discuss the same with parties jointly or in caucuses, so that parties gain awareness (via independent

evaluation) of the merits of their case. In the case of mediation, solutions normally emerge from the parties themselves and mediators endeavour to find the most acceptable solution by bridging gaps between the parties.

Parties generally call on a senior counsel or on a panel with expertise and experience in the subject-matter under dispute in order to conduct ENE. One refers to such persons as "evaluators" or as "neutral persons".

Mediator education and training

Suitable education and training for mediators becomes a complex issue — largely due to the breadth of areas which may call on mediation as a means of dispute-resolution. Debate ensues on what constitutes adequate training on the principles of mediation as well as what personal attributes an individual needs in order to effectively carry out a mediator's role.

The educational requirements for accreditation as a mediator differ between accrediting groups and from country to country. In some cases legislation mandates these requirements; while in others professional bodies impose standards and applicants must comply prior to becoming accredited by them. Many US universities offer graduate studies in mediation, culminating in the PhD or DMed degrees.

In Australia, for example, professionals wanting to practise in the area of family law must have tertiary qualifications in law or in social science, undertake 5 days training in mediation and engage in at least 10 hours of supervised mediation. Furthermore, they must also undertake 12 hours of mediation-education or training every 12 months.

Other institutions offer units in mediation across a number of disciplines such as law, social science, business and the humanities. In Australia not all fields of mediation-work require academic qualifications, as some deal more with practical skills rather than with theoretical knowledge: to this end membership-organizations provide training-courses to further the adoption and practice of mediation. Internationally a similar approach to the training of mediators is taken by the organization CEDR, which trains 300 mediators a year in China, Hong Kong, India, Ireland, Nigeria, Pakistan, United Kingdom, Ukraine and elsewhere.

No legislated national or international standards on the level of education which should apply to all mediation practitioner’s organizations exist. However, organizations such as the National Alternative Dispute Resolution Advisory Council (NADRAC) in Australia continue to advocate for a wide scope on such issues. Other systems apply in other jurisdictions such as Germany, which advocates a higher level of educational qualification for practitioners of mediation.

Providing an Introduction

When starting off a mediation session an introduction can set the vibe for the entire discussion. This being said, it is quite important to be detailed so both parties can start off on the same page regardless of their differences. There are multiple steps to

be taken when making an informed introduction. Every mediator's introduction is different depending on what they decide to cover (Domenici,2001). These steps are usually included.

- Introduction of mediators and parties
- Words of encouragement
- Explanation of the process and definitions of mediation and the mediator's role
- Ground rule or communication guidelines
- Confidentiality provisions
- Caucus possibility
- Signing the agreement to mediate
- Asking for questions

Mediator codes of conduct

The application of a code of conduct to the practice of mediation becomes problematic — due in part to the diverse number and type of practitioners in the field. A tendency exists for professional societies to develop tamples of this in Australia include the mediation codes of conduct developed by the Law Societies of South Australia and Western Australia and those developed by organisations such as Institute of Arbitrators & Mediators Australia (IAMA) and LEADR for use by their members. Other organizations such as the American Center for Conflict Resolution Institute ([www.accri.org]) have developed both classroom and distance learning courses which subscribe to its mission of promoting peace through education. The CPR/Georgetown Ethics Commission (www.cpradr.org), the Mediation Forum of the Union International des Avocats, and the European Commission have also promulgated codes of conduct for mediators.

Writers in the field of mediation normally espouse a code of conduct that mirrors the underlying principles of the mediation process. In this respect some of the most common aspects of a mediator codes of conduct include:

- a commitment to inform participants as to the process of mediation.
- the need to adopt a neutral stance towards all parties to the mediation, revealing any potential conflicts of interest.
- the requirement for a mediator to conduct the mediation in an impartial manner
- within the bounds of the legal framework under which the mediation is undertaken any information gained by the mediators should be treated as confidential.
- mediators should be mindful of the psychological and physical wellbeing of all the mediations participants.
- mediators should not offer legal advice, rather they should direct participants to appropriate sources for the provision of any advice they might need.
- mediators should seek to maintain their skills by engaging in ongoing training in the mediation process.
- mediators should practise only in those fields in which they have expertise gained by their own experience or training.

Accreditation of ADR in Australia

Australia has no national accreditation system for ADR. However, following the National Mediation Conference in May 2006, the National Mediation Accreditation Standards system has apparently started to move to its implementation phase.

ADR practitioners recognize that mediators (as distinct from arbitrators or conciliators) need to be recognized as having professional accreditations the most. There are a range of organizations within Australia that do have extensive and comprehensive accreditations for mediators but people that use mediation are unsure as to what level of accreditation is required for the quality of service that they receive. Standards will tend to vary according to the specific mediation and the level of specificity that is desired. Due to the wide range of ADR processes that are conducted it would be very difficult to have a set of standards that could apply to all ADR processes, but standards should be developed for particular ADR processes

Clients need the assurance that mediators have some form of ongoing assessment and training throughout their careers. Mediators must satisfy different criteria to be eligible for a variety of mediator panels. Also different mediator organizations have different ideals of what makes a good mediator which in turn reflects the training and accreditation of that particular organization. Selection processes for ADR practitioners are based on the needs of the service, but a problem is posed when organizations, such as the court want to refer a client to mediation and they usually have to rely on their in-house mediators or rely on word of mouth. There are inconsistent standards. A national accreditation system could very well enhance the quality and ethics of mediation and lead mediation to become more accountable. There is a need for a unified accreditation system for mediators across Australia to establish clarity and consistency.

es of mediation

One core problem in the dispute-resolution process involves the determination of what the parties actually dispute. Through the process of mediation participants can agree to the scope of the dispute or issues requiring resolution. Examples of this use of mediation in the Australian jurisdiction include narrowing the scope of legal pleadings and its use in industrial and environmental disputes.

Definition of the nature of a dispute can often clarify the process of determining what method will best suit its resolution.

One of the primary uses of mediation involves parties using the mediation process to define the issues, develop options and achieve a mutually-agreed resolution.

Australia has incorporated mediation extensively into the dispute-settlement process of family law and into the latest round of reforms concerning industrial relations under the WorkChoices amendments to the Workplace Relations Act.

Where prospects exist of an ongoing disputation between parties brought on by irreconcilable differences (stemming from such things as a clash of religious or

cultural beliefs), mediation can serve as a mechanism to foster communication and interaction.

Mediation can function not only as a tool for dispute resolution but also as a means of dispute prevention. Mediation can be used to facilitate the process of contract negotiation by the identification of mutual interests and the promotion of effective communication between the two parties. Examples of this use of mediation can be seen in recent enterprise bargaining negotiations within Australia.

Governments can also use mediation to inform and to seek input from stakeholders in formulation or fact-seeking aspects of policy-making. Mediation in wider aspect can also serve to prevent conflict or to develop mechanisms to address conflicts as they arise.

Native-title mediation in Australia

In response to the Mabo decision by the High Court of Australia, the Australian Government sought to alleviate the concerns of a wide section of the population and industry on the decisions implications on land tenure and use by enacting the Native Title Act 1993 (Cth). A cornerstone of the act is the use of mediation as a mechanism to determine future native title rights within Australia.

Although not barring litigation, the Act seeks to promote mediation through a process incorporating the Federal Court and the National Native Title Tribunal (NNTT). This is seen as having a better long tern success by providing flexible and practical solutions to the needs of the various stakeholders.

The extensive use of mediation in the resolution of native title matters does not stop the referral of matters to the courts for resolution, nor is mediation precluded from occurring whilst legal challenges are being pursued. A recent case where Native Title rights were found exist over a large portion of the City of Perth has seen the simultaneous use of mediation and formal legal appeals processes.

A key feature of Native Title mediation involves the use of Indigenous Land Use Agreements (ILUAs). These binding agreements are negotiated between native title claimant groups and others such as pastoralists, miners and local governments and cover aspects of the use of the land and any future act such as the granting of mining leases.

Some of the features of native title mediation which distinguish it from other forms include the likelihood of lengthy negotiation time frames, the number of parties (ranging on occasion into the hundreds) and that statutory and case law prescriptions constrain some aspects of the negotiations.

Philosophy of mediation

The uses of mediation in preventing conflicts

Mediation is adaptable to anticipate problems, grievances and difficulties between parties before the conflict may arise. This has potential applications in large and private sector organisations, particularly where they are subject to excessive change, competition and economic pressure. A key way mediation is used to prevent these conflicts is complaint handling and management. This is a conflict prevention mechanism designed to handle a complaint effectively at first contact and to minimise the possibility of it developing into a dispute. According to Charlton (2000, p. 4) a person who undertakes this role is commonly known as a “dispute preventer”.

While the corporate sector may provide one area in which to use the mediation process for preventing conflicts, dealing with everyday life’s disputes provides another. This is no more evident in neighbourhood conflict. One's behaviour affects one's neighbours, just as what they do affects you. The key way to prevent conflicts with neighbours is to behave as a good neighbour oneself. Spencer and Altobelli (2005, p. 17) believe simple consideration and conversation with neighbours helps achieve a peaceful coexistence. Making it is easier for you to live as privately or as sociably as you wish. Ideal suggestions for consideration in preventing conflicts between neighbours include:

- meeting one's neighbors
- keeping one's neighbors informed
- awareness of differences
- appreciation
- consideration of one's neighbors' points of view
- showing candidness
- communicating
- demonstrating respect

One can also employ mediation to reduce or prevent violence in sports and in schools, using peers as mediators in a process known as **peer mediation**. This process (highlighted by Cremin) provides a way of handling conflicts and preventing violence in primary schools and high schools. Schools adopting this process often recruit and train students interested in being peer mediators.

In general, effective communication provides the ideal way to prevent and resolve any conflict; talking things over — along with listening — handles problems optimally and should ultimately avoid the dispute going to the courts.

Responsibilities regarding confidentiality in mediation

One of the hallmarks of mediation is that the process is strictly confidential. The mediator must inform the parties that communications between them during the intake discussions and the mediation process are to be private and confidential. In general, the information discussed can never be used as evidence in the event that the matter does not settle at mediation and proceeds to a court hearing. Spencer and Altobelli (2005, p. 261) point out it is considered common for parties entering into mediation to sign a mediation agreement document with the mediator. The parties therefore agree that it’s a condition of being present or participating in the mediation

and the document if necessary may be deemed confidential by virtue of the common law.

Confidentiality lies at the heart of mediation. It is imperative for parties to trust the process. Very few mediations will ever succeed unless the parties can communicate fully and openly without fear of compromising their case before the courts. Charlton and Dewdney (2004, p. 344.) highlight mediation confidentiality is seen as one of the key ingredients to encourage disputing parties to negotiate with each other in order to achieve a settlement of their dispute.

Organisations have often seen confidentiality as a reason to use mediation ahead of litigation, particularly when disputes arise in sensitive areas of their operation, or to avoid their affairs becoming publicised among business competitors, acquaintances or friends. Steps put in place during mediation to help ensure this privacy include;

1. The mediation meeting is conducted behind closed doors.
2. Outsiders can only observe proceedings with both parties consent.
3. No recording of the transcript is kept; and
4. There is no external publicity on what transpired at the mediation.

There is no doubt confidentiality contributes to the success and integrity of the mediation process. However it will be difficult for a mediator to guarantee full confidentiality protection between the parties.

Legal implications of mediated agreements

Parties who enter into mediation do not forfeit any legal rights or remedies. If the mediation process does not result in settlement, each side can continue to enforce their rights through appropriate court or tribunal procedures. However, if a settlement has been reached through mediation, legal rights and obligations are affected in differing degrees. In some situations, the parties may only wish to have a memorandum or a moral force agreement put in place; these are often found in community mediations. In other instances, a more comprehensive deed of agreement is drafted and this deed serves to bring a legally binding situation. Charlton and Dewdney (2004, p. 126.) point out that a mediated agreement may be registered with the court to make it legally binding and it is advisable to have a lawyer prepare the form or, at the very least, to obtain independent legal advice about the proposed terms of the agreement.

Mediation has opened the door for parties in conflict to resolve their differences through non-traditional judicial forums. Over the last few decades, mediation has brought to light the processes, or alternatives to litigation, that enable parties to resolve their differences without the high cost associated with litigation. An interesting remark made by Spencer and Altobelli (2005, p. 223): "Court systems are eager to introduce mandatory mediation as a means to meet their needs to reduce case loads and adversarial litigation, and participants who understand the empowerment of mediation to self-determine their own agreements are equally as eager to embrace mediation as an alternative to costly and potentially harmful litigation."

Recently[], mediation has come under the spotlight and the watchful eye of many state legal systems for its ability to resolve party disputes, reduce court case loads, and reduce overall legal costs. Yet while parties enter into mediation intending to preserve their legal rights and remedies, mediation may result in these rights being directly or indirectly affected. Parties that have resolved their conflict through this voluntary process and settled on an agreement should seek legal advice if they are unsure of the consequences.

Common aspects of mediation

Mediation as a process involves a third party (often an impartial third party) assisting two or more persons, ("parties" or "stakeholders") to find mutually-agreeable solutions to difficult problems.

People make use of mediation at many different levels and in multiple contexts: from minor disputes to global peace-talks. This makes it difficult to provide a general description without referring to practices in specific jurisdictions — where "mediation" may in fact have a formal definition and in some venues may require specific licenses. This article attempts only a broad introduction, referring to more specific processes (such as peace process, binding arbitration, or mindful mediation) directly in the text.

While some people loosely use the term "mediation" to mean any instance in which a third party helps people find agreement, professional mediators generally believe it essential that mediators have thorough training, competency, and continuing education. The term "mediation" also sometimes occurs incorrectly referring to arbitration; a mediator does not impose a solution on the parties, whereas an arbitrator does.

While mediation implies bringing disputing parties face-to-face with each other, the strategy of "shuttle diplomacy", where the mediator serves as a liaison between disputing parties, also sometimes occurs as an alternative.

Some of the types of disputes or decision-making that often go to mediation include the following:

Family:

- Prenuptial/Premarital agreements
- Financial or budget disagreements
- Separation
- Divorce
- Financial distribution and spousal support (alimony)
- Parenting plans (child custody and visitation)
- Eldercare issues
- Family businesses
- Adult sibling conflicts
- Disputes between parents and adult children
- Estate disputes

- Medical ethics and end-of-life issues

Workplace:

- Wrongful termination
- Discrimination
- Harassment
- Grievances
- Labor management

Public disputes:

- Environmental
- Land-use

Disputes involving the following issues:

- Landlord/tenant
- Homeowners' associations
- Builders/contractors/realtors/homeowners
- Contracts of any kind
- Medical malpractice
- Personal injury
- Partnerships
- Non-profit organizations
- Faith communities

Other:

- Youth (school conflicts; peer mediation);
- Violence-prevention
- Victim-Offender mediation

Mediation commonly includes the following aspects or stages:

- a controversy, dispute or difference of positions between people, or a need for decision-making or problem-solving
- decision-making remaining with the parties rather than imposed by a third party
- the willingness of the parties to negotiate a "positive" solution to their problem, and to accept a discussion about respective interests and objectives
- the intent to achieve a "positive" result through the facilitative help of an independent, neutral third person

In the United States, mediator codes-of-conduct emphasize "client-directed" solutions rather than those imposed by a mediator in any way. This has become a common, definitive feature of mediation in the US and in the UK.

Mediation differs from most other adversarial resolution processes by virtue of its simplicity, informality, flexibility, and economy.

The typical mediation has no formal compulsory elements, although some common elements usually occur:

- each of the parties allowed to explain and detail their story;
- the identification of issues (usually facilitated by the mediator);
- the clarification and detailed specification of respective interests and objectives;
- the conversion of respective subjective evaluations into more objective values;
- identification of options;
- discussion and analysis of the possible effects of various solutions;
- the adjustment and the refining of the proposed solutions;
- the memorialization of agreements into a written draft

Due to the particular character of this activity, each mediator uses a method of his or her own (the law does not ordinarily govern a mediator's methods), that might eventually differ markedly from the above scheme. Also, many matters do not legally require a particular form for the final agreement, while others expressly require a precisely determined form.

Most countries respect a mediator's confidentiality.

Online mediation

Online mediation, a sub-category of online dispute resolution, involves the application of online technology to the process of mediation. Online Mediation extends the reach of mediators to disputes between persons who are too geographically distant, or otherwise unable (for example, through disability), to attend; or where the value of the dispute does not justify the cost of a face-to-face mediation. Online mediation can also prove useful prior to face-to-face mediation — to commence the mediation process early where urgency exists, to narrow the issues, to commence brainstorming of solutions and to prepare the parties.

Mediation in business and in commerce

The eldest branch of mediation applies to business and commerce and still this one is the widest field of application, with reference to the number of mediators in these activities and to the economical range of total exchanged values.

The mediator in business or in commerce helps the parties to achieve the final goal of respectively buying/selling (a generic contraposition that includes all the possible varieties of the exchange of goods or rights) something at satisfactory conditions (typically in the aim of producing a bilateral contract), harmonically bringing the separate elements of the treaty to a respectively balanced equilibrium. The mediator, in ordinary practice, usually cares of finding a positive agreement between (or among) the parties looking at the main pact as well as at the accessory pacts too,

thus finding a composition of all the related aspects that might combine. in the best possible way, all the *desiderata* of his clients.

Academics sometimes include this activity among the auxiliary activities of commerce and business, but it has to be recalled that it differs from the generality of the others, because of its character of independence from the parties: in an ordinary activity of agency, or in the unilateral mandate this character is obviously missing, this kind of agent merely resulting as a *longa manus* of the party that gave him his (wider or narrower) power of representation. The mediator does not obey to any of the parties, and is a third party, looking at the contraposition from an external point of view.

Subfields of commercial mediation include work in well-known specialized branches: in finance, in insurance, in ship-brokering, in real estate and in some other individual markets, mediators have specialized designations and usually obey special laws. Generally, mediators cannot practice commerce in the genre of goods in which they work as specialized mediators.

Mediation and litigation

Mediation offers a process by which two parties work towards an agreement with the aid of a neutral third party. Litigation, however, is a process in which the courts impose binding decisions on the disputing parties in a determinative process operating at the level of legal rights and obligations [Boulle 2005]. These two processes sound completely different, but both are a form of dispute resolution. Litigation is conventionally used and conventionally accepted, but Mediation is slowly becoming more recognized as a successful tool in dispute resolution. Slowly these processes are becoming inter-dependent, as the Courts in some cases are now referring parties to Mediation. In saying this, there are distinct differences between the two processes. Mediation claims to resolve many of the problems associated with litigation, such as the high costs involved, the formality of the court system and the complexity of the court process. Mediation does not create binding agreements unless the parties consent to it, and the Mediator has no say in the outcome. Even though our court system and mediation have increasing connections, they still reflect different value assumptions and structural approaches towards dispute resolution.

Community mediation

Disputes involving neighbors often have no formal dispute-resolution mechanism. Community-mediation centers generally focus on this type of neighborhood conflict, with trained volunteers from the local community usually serving as mediators. These organizations often serve populations that cannot afford to utilize the court systems or other private ADR-providers. Many community programs also provide mediation for disputes between landlords and tenants, members of homeowners associations, and businesses and consumers. Mediation helps the parties to repair relationships, in addition to addressing a particular substantive dispute. Agreements reached in community mediation are generally private, but in some states, such as California, the parties have the option of making their agreement enforceable in

court. Many community programs offer their services for free or at most, charge a nominal fee.

The roots of community mediation can be found in community concerns to find better ways to resolve conflicts, and efforts to improve and complement the legal system. Citizens, neighbors, religious leaders* and communities became empowered, realizing that they could resolve many complaints and disputes on their own in their own community through mediation. Experimental community mediation programs using volunteer mediators began in the early 1970s in several major cities. These proved to be so successful that hundreds of other programs were founded throughout the country in the following 2 decades. Community mediation programs now flourish throughout the United States.

Competence of the mediator

Numerous schools of thought exist on identifying the "competence" of a mediator. Where parties retain mediators to provide an evaluation of the relative strengths and weaknesses of the parties' positions, subject-matter expertise of the issues in dispute becomes a primary aspect in determining competence.

Some would argue, however, that an individual who gives an opinion about the merits or value of a case does not practise "true" mediation, and that to do so fatally compromises the alleged mediator's neutrality.

Where parties expect mediators to be process experts only (i.e., employed to use their skills to work through the mediation process without offering evaluations as to the parties' claims) competence is usually demonstrated by the ability to remain neutral and to move parties though various impasse-points in a dispute. International professional organizations continue to debate what competency means.

In France, professional mediators have created an organization to develop a rational approach to conflict resolution. This approach is based on a scientific definition of a person and a conflict. It helps to develop a structured process of mediation interviews and meetings of the parties. Technology mediators are particularly advanced in terms of accompanying changes induced by the dynamics of conflict. Mediators have adopted a code of ethics which provides the protagonists guarantees professionalism. They know their technical including through a website, the wikimediation, create by Jean-Louis Lascoux and funded by the European Commission.

When to use mediation

Not all disputes lend themselves well to mediation. One set of criteria for suitability, which is applied in the subsection below, is provided in *Mediation - Principles Process Practice, Boulle L. 2005*

Factors relating to the parties

Factors relating to the parties provide the most important determinants when deciding whether or not a dispute lends itself to mediation, as of course, the parties are the essential key to mediation. Basically, if the parties are not ready and willing to mediate, mediation cannot take place. If a mediation does take place against the parties wishes, the process will not work because one of the principles of mediation is participation, and the parties will not constructively participate if they are forced. Another factor to consider when judging a disputes suitability for mediation is whether the parties have legal representation. If one party does and the other does not, then it is not fair to mediate. Unlike the court system, a legal representative will not be appointed to the non-represented party. Therefore both parties need to consent to either be represented by legal advisers or not. It is not essential that legal advisers are present in the mediation session. However in most cases it is strongly advised that the parties seek legal advice before signing the legally binding agreement. A final factor to consider is the legal capacity of the parties. A minor cannot enter a mediation session for obvious legal reasons, the same goes for a person with mental illness or disability that would effect their decision-making ability. Once these are considered and no difficulties found, the remaining points on the checklist need to be considered.

Preparing for mediation

People participating in mediation, often called “parties” or “disputants”, can take several steps to prepare for mediation, as can their lawyers, if involved.

Just as parties need not agree to take part in mediation, they need not prepare for mediation — with one notable exception. In some court-connected programs, courts will require disputants to both participate in and prepare for mediation. Preparation involves making a statement or summary of the subject of the dispute and then bringing the summary to the mediation.

If preparation for mediation is voluntary, why bother? Research uncovered the following potential benefits of preparing. Disputants who meet the mediator prior to the mediation meeting tend to have less anxiety, a higher percentage of their disputes settle at mediation, and they express increased satisfaction with the mediation process.

The following preparation activities appear in no fixed order. Not all would apply for every mediation.

Is mediation the right dispute resolution process at this time? This subdivides into two questions: is mediation the right dispute resolution process?; and are the parties ready to settle? For example, the dispute may involve a significant power-imbalance between the parties. In such a case, another dispute resolution process may make a better job of balancing power.

Readiness has great importance. Perhaps a loss or injury has occurred too recently. Overwhelming emotions may render objective decision-making extremely difficult, if not impossible. Alternatively, an injury may not have had sufficient time to heal so that any continuing loss becomes difficult to quantify. Other examples abound.

Although entering into a mediation to settle the entire dispute may seem inappropriate, this does not mean that mediation cannot help. Some disputants participate in brief mediations with the goal of finding an interim solution to the problem that manages what the parties need to investigate during the interval between the present and when the dispute is ready to be settled.

Another preliminary mediation task involves identifying who should participate in the mediation. Laws give decision-making power to certain individuals. It seems obvious that these individuals are essential to the mediation. Others important participants could include lawyers, accountants, support-persons, interpreters, or spouses. Ask: who needs to be involved in order to reach settlements that will be accepted and implemented?

Convening a mediation meeting requires as much care as convening any important meeting. What location will best foster settlement? Do any participants have special needs? What date and time will work best? Will participants have access to food and beverages? Should the room have a table and chairs, or couches? Does the room have natural light? Does it offer privacy? How much time might a mediation take?

At times disputants have the ability to select the mediator: they should exercise due diligence. Anyone can act as a mediator, with no licensing required. Some mediator organizations require mediators to qualify. Mediators listed in court-connected rosters have to meet certain experiential and training requirements. Many mediators have a wide range of skills. Matching the mediator with the dispute and the needs of the disputant comprises a pre-mediation task. For example, the mediator will need to have skill in managing the many parties involved in a land-use dispute. Expertise in family law may prove important in divorce mediation, while knowledge of construction matters will add value in construction disputes.

The task of selecting the right mediator can occur more readily when participants take time to analyze the dispute. Just what is the dispute about? Parties probably agree in some areas. By identifying agreements, parties clarify the issues in dispute. Typically, misunderstandings occur. These usually result from assumptions. What if these can get cleared up? Might some information be missing? and if all of the disputants shared all of the information, wou;d the matter quickly settle?

Mediation involves communication and commitment to settle. Disputants can hone their communication-skills prior to mediation so that they express what they want more clearly and so that they hear what the other disputants say about what a settlement needs to include. Sometimes the dispute isn't about money. Rather, a sincere apology will resolve matters. When disputants communicate respectfully, they generate more opportunities for creative settlements.

What objectives does each of the disputants have? Thinking about creative ways that each disputant can achieve their objectives before the mediation allows participants to check out the viability of possible outcomes. They come to the meeting well prepared to settle.

What information do participants require in order to make good decisions? Do pictures, documents, corporate records, pay-stubs, rent-rolls, receipts, medical reports, bank-statements and so forth exist that parties need to gather, copy and bring to the mediation? With all of the information at hand at the mediation, one may avoid the need to adjourn the meeting to another, later date while parties gather the information. And one minimises the risk of overlooking a critical piece of information.

Parties may need to make procedural choices. One important decision involves whether to keep the mediation. Other decisions address how to pay the mediator and whether to share all information relevant to the dispute. A contract signed before the mediation can address all procedural decisions. These contracts have various names, such as "Agreement to Mediate" or "Mediation Agreement". Mediators often provide an Agreement to Mediate. Disputants, and their lawyers, can (by agreement) insert appropriate provisions into the agreement. In some cases, court-connected mediation programs have pre-determined procedures.

Mediators have a wide variety of practices in matters of contact with the disputants or their lawyers prior to the mediation meeting. Some mediators hold separate, in-person preliminary meetings with each disputant. These have many names, including "preliminary conferences". Disputants who meet with the mediator before the mediation learn about the process of mediation, their own role, and what the mediator will do. Having met the mediator before the mediation, disputants can put to rest any concerns about whether they can trust the mediator's neutrality and impartiality; and they can focus on how to resolve the dispute.

The above outline sets out the most significant steps in preparation for mediation. Each unique dispute may require a unique combination of preliminary steps.

Mediation as a method of dispute resolution

In the field of resolving legal controversies, mediation offers an informal method of dispute resolution, in which a neutral third party, the mediator, attempts to assist the parties in finding resolution to their problem through the mediation process. Although mediation has no legal standing *per se*, the parties can (usually with assistance from legal counsel) commit agreed points to writing and sign this document, thus producing a legally binding contract in some jurisdiction specified therein.

Mediation differs from most other conflict resolution processes by virtue of its simplicity, and in the clarity of its rules. It is employed at all scales from petty civil disputes to global peace talks. It is thus difficult to characterize it independently of these scales or specific jurisdictions - where 'Mediation' may in fact be formally defined and may in fact require specific licenses. There are more specific processes (such as peace process or binding arbitration or mindful mediation) referred to directly in the text.

Safety, fairness, closure

These broader political methods usually focus on conciliation, preventing future problems, rather than on focused dispute-resolution of one matter.

One can reasonably see mediation as the simplest of many such processes, where no great dispute exists about political context, where jurisdiction has been agreed, whatever process selected the mediator is not in doubt, and there is no great fear that safety, fairness and closure guarantees will be violated by future bad-faith actions.

Assuming some warranty of safety, fairness, and closure, then the process can reasonably be called 'mediation proper', and be described thus:

Post-mediation activities

Some mediated agreements require ratification by an external body to which a negotiating party must account — such as a board, council or cabinet. In other situations it may be decided or understood that agreements will be reviewed by lawyers, accountants or other professional advisers after the mediation meeting. Ratification and review provide safeguards for mediating parties. They also provide an opportunity for persons not privy to the dynamics of a mediation and the efforts of the negotiating parties to undermine significant decisions they have made.

In the United States, the implementation of agreements reached in mediation requires tailoring to the mediated subject. For example, successful family and divorce mediations must memorialize an agreement which complies with the statutes of the state in which the parties will implement their mediated agreement. In New York, for example, the New York Domestic Relations Law specifies both technical and substantive requirements with which pre-marital (or pre-nuptial) and post-marital (or post-nuptial) agreements must comply (NY Domestic Relations Law, Sec. 236, Part B).

Official sanctions

In some situations the sanctions of a court or other external authority must validate a mediation agreement. Thus if a grandparent or other non-parent is granted residence rights in a family dispute, a court counselor will be required to furnish a report to the court on merits of the proposed agreement. parties to a private mediation may also wish to obtain court sanction for their decisions. Under the Queensland regulatory scheme on court connected mediation, mediators are required to file with a registrar a certificate about the mediation in a form prescribed in the regulations. A party may subsequently apply to a relevant court an order giving effect to the agreement reached. Where court sanction is not obtained, mediated settlements have the same status as any other agreements.

Referrals and reporting-obligations

Mediators may at their discretion refer one or more parties to psychologists, accountants or social workers for post-mediation professional assistance. Where

mediation is provided by a public agency, referrals are made to other authorities such as Centrelink.

Mediator debriefing

In some situations, a post-mediation debriefing and feedback session is conducted between co-mediators or between mediators and supervisors. It involves a reflective analysis and evaluation of the process. In many community mediation services debriefing is compulsory and mediators are paid for the debriefing session.

Mediator roles and functions

Mediator functions are classified into a few general categories, each of which necessitates a range of specific interventions and techniques in carrying out a general function.

Creating favorable conditions for the parties' decision-making

Mediators can contribute to the settlement of disputes by creating favorable conditions for dealing with them. This can occur through:

- Providing an appropriate physical environment- this is through selection of neutral venues, appropriate seating arrangements, visual aids and security.
- Providing a procedural framework- this is through conduct of the various stages of mediation process. As the chair of the proceedings, they can establish basic ground rules, provide order, sequence and continuity. The mediators opening statement provides an opportunity to establish a structural framework, including the mediation guidelines on which the process will be based.
- Improving the emotional environment- this is a more subtle function and varies among mediations and mediators. They can improve the emotional environment through restricting pressure, aggression and intimidation in the conference room by providing a sense of neutrality and by reducing anxiety among parties.

Assisting the parties to communicate

People in conflict tend not to communicate effectively and poor communication can cause disputes to occur or escalate. For mediators to encourage communication efficiently, they themselves must be good communicators and practice good speaking and listening skills, pay attention to non-verbal messages and other signals emanating from the context of the mediation.

Facilitating the parties' negotiations

Mediators can contribute expertise and experience in all models and styles of negotiation so that the parties are able to negotiate more constructively, efficiently and productively. This function is prominent after the problem-defining stages of mediation and involves mediators bringing direction and finesse to the negotiation

efforts of the parties. Mediators can also act as catalysts for creative problem solving, for example by brainstorming or referring to settlement options generated in analogous mediation experiences.

Functions of the parties

the functions of the parties will vary according to their motivations and skills, the role of legal advisers, the model of mediation, the style of mediator and the culture in which the mediation takes place. Legal requirements may also affect their roles. In New South Wales the Law Society has published *A guide to the rights and Responsibilities of participants*.

Preparation

Whether parties enter mediation of their own volition or because legislation obligates them to do so, they prepare for mediation in much the same way they would for negotiations, save that the mediator may supervise and facilitate their preparation. Mediators may require parties to provide position statements, valuation reports and risk assessment analysis. The parties may also be required to consent to an agreement to mediate before preparatory activities commence.

Disclosure of information

Agreements to mediate, mediation rules, and court-based referral orders may have requirements for the disclosure of information by the parties and mediators may have express or implied powers to direct them to produce documents, reports and other material. In court referred mediations parties usually exchange with each other all material which would be available through discovery or disclosure rules were the matter to proceed to hearing. This would include witness statements, valuations and statement accounts.

Party participation

The objectives of mediation, and its emphasis on consensual outcomes, imply a direct input from the parties themselves. The mediation system will expect that parties attend and participate in the mediation meeting; and some mediation rules require a party, if a natural person, to attend in person. However, the process assesses party participation in overall terms, so a party failing to participate in the initial stages may make up for this later in the process.

Choice of mediator

The choice of mediation as a dispute resolution option links closely to the identity of a mediator who conducts it.[. This follows from the circumstances: different models of mediation exist, mediators have a lot of discretion in a flexible procedure, and the mediator's professional background and personal style have enormous potential

impacts on the nature of the service provided. These factors make the selection of mediators of real practical significance.

The term "choice of mediator" implies a process of deliberation and decision-making. No formal mechanism for objecting to the appointment of particular mediators exists, but in practice the parties could ask mediators to withdraw for reasons of conflict of interest. In community mediation programs the director generally assigns mediators without party involvement. In New South Wales, for example, when the parties cannot agree on the identity of a mediator the registrar contacts a nominating entity, such as the Bar Association which supplies the name of a qualified and experienced mediator. The following are useful ways of selecting a mediator:

- Personal Attributes - qualities and characteristics which are innate, as opposed to skills and techniques which can be learned and developed. In this concept a number of desirable attributes for mediators include interpersonal skills, patience, empathy, intelligence, optimism and flexibility.
- Mediation qualifications, experience and background - while some jurisdictions prescribe no generalized qualifications for mediators, in some specific contexts mediators require qualifications prescribed by legislation. In New South Wales, for example, the Family Law Act 1975 (Cth) proscribes qualifications for mediators. Qualifications usually revolve around knowledge of the theory and practice of conflict, negotiation and mediation, mediations skills, and attitudes appropriate for mediation. There are three factors of relevance: experience in practice of mediation, experience in the substantive area of dispute, and personal life experience.
- the mediator's training
- the mediator's professional background
- the mediator's certification and its value
- the mediation model offered, and whether it suits the case
- any conflict of interest the mediator may have
- the mediator's willingness to allow, and possibly encourage, mediation participants to seek creative solutions the mediator's fee

Values of mediation

Mediation contains three aspects: feature, values and objectives. The three aspects, although different, can and do at times overlap in their meaning and use. There are a number of values of mediation including Non Adversarialism, Responsiveness and Self Determination and Party Autonomy.

Each Person, Mediator and Process has values that can be attributed to them. These values are as diverse as Human Nature itself and as such provides for no uniformity amongst the values and on how those values are enforced by each party.

The Non-adversarialism value of mediation is not based on the attitudes of the parties involved, but is based on the actual process of mediation and how it is carried out. To clarify the context of the meaning it is said that Litigation is

adversarial as its process must come to a logical conclusion based on a decision made by a presiding judge. Mediation does not always end with a decision.

Responsiveness, another value of mediation, responds to the interests of the parties without the restrictions of the law. It allows the parties to come to their own decisions on what is best for them at the time. Responsiveness shows how the mediation process is informal, flexible and collaborative and is person centered.

Self-determination and party autonomy gives rise to parties gaining the ability to make their own choices on what they will agree on. It gives the parties the ability to negotiate with each other to satisfy their interests, generate some options which could lead to an outcome satisfactory to both parties. This autonomy or independent structure provided by the mediation process removes the need for the presence of professional bodies and turns the responsibility back on to the parties to deal with the issue and hopefully to a satisfactory conclusion.

Mediation with arbitration

Mediation has sometimes been utilized to good effect when coupled with arbitration, particularly binding arbitration, in a process called 'mediation/arbitration'. In this process, if parties are unable to reach resolution through mediation, the mediator becomes an arbitrator, shifting the mediation process into an arbitral one, seeking additional evidence as needed (particularly from witnesses, if any, since witnesses are normally not called upon by a mediator), and finally rendering an arbitral decision.

This process is more appropriate in civil matters where rules of evidence or jurisdiction are not in dispute. It resembles, in some respects, criminal plea-bargaining and Confucian judicial procedure, wherein the judge also plays the role of prosecutor - rendering what, in Western European court procedures, would be considered an arbitral (even 'arbitrary') decision.

Mediation/arbitration hybrids can pose significant ethical and process problems for mediators. Many of the options and successes of mediation relate to the mediator's unique role as someone who wields coercive power over neither the parties nor the outcome. If parties in a mediation are aware the mediator might later need to act in the role of judge, the process could be dramatically distorted. Thankfully, mediation-arbitration often involves using different individuals in the role of mediator and (if needed later) arbitrator, but this is not always the case.

Mediator liability

Mediators should take necessary precautions to protect themselves, as they are putting themselves in a vulnerable position in terms of liability. Mediators need to be qualified and properly trained before they can mediate a legally binding mediation. In mediation, there are a number of situations in which liability could arise. For example, a mediator could be liable for misleading parties about the process and/or process of alternative dispute resolution. If a mediator inappropriately recommends mediation as a dispute resolution method, those involved can hold the mediator

liable. A breach of confidentiality on the mediators behalf could result in liability. These situations can all lead to court proceedings, although this is quite uncommon. Only one case has been recorded in Australia so far.

Three areas exist in which liability can arise for the mediator:

1. Liability in Contract
2. Liability in Tort
3. Liability for Breach of Fiduciary Obligations.

Liability in Contract arises if the Mediator breaches contract between themselves and one or both of the parties. This can be in written or verbal contract. There are two forms of breach - failure to perform and anticipatory breach. The latter is harder to prove because the breach has not yet happened. If the breach is proven in can result in damages awarded. The damages awarded are generally compensatory in nature, very rarely pecuniary. Limitations on liability include causation (Proving liability requires a showing of actual causation).

Liability in Tort arises if a mediator influences a party in any way (compromising the integrity of the decision), defames a party, breaches confidentiality, or most commonly, is liable in negligence. To be awarded damages, the party must show suffering of actual damage, and must show that the mediator's actions (and not the party's actions) are the actual cause of the damage.

Liability for Breach of Fiduciary Obligations can occur if parties misconceive their relationship with the Mediator for something other than completely neutral. The mediator has the role of remaining neutral at all times, but the parties could misinterpret the relationship to be a fiduciary one.

Mediators' liability in Tapoohi v Lewenberg (Australia)

Tapoohi v Lewenberg provides the only case in Australia to date that has set a precedent for mediators' liability.

The case involved two sisters who settled a deceased estate via mediation. Only one sister attended the mediation in person: the other participated via telephone with her lawyers present. A deal was struck up and an agreement was executed by the parties. At the time it was orally expressed that before the final settlement was to occur there was requirement for taxation advise to be sought as such a large transfer of property would encompass some capital gains tax to be paid.

Tapoohi had to pay Lewenberg $1.4 million dollars in exchange for some transfers of land. One year later, when the capital gains tax was recognized by Tapoohi she filed proceedings against her sister, lawyers and the mediator based on the fact that the agreement was subject to further advise being sought in relation to taxation.

The mediator's agreement stage took place verbally without any formal agreement: only a letter stating his appointment. Tapoohi, a lawyer herself, alleged that the

mediator breached his contractual duty, bearing in mind the lack of any formal agreement; and further alleged several breaches on his tortuous duty of care.

Although the court dismissed the summary judgment, the case shows that the mediators owe a duty of care to all parties and that parties can hold them liable should they breach that duty of care. Habersberger J held that it "not beyond argument" that the mediator could be in breach of contractual and tortious duties. Such claims were required to be made out at a hearing but a trial court

This case emphasizes the need for formal mediation-agreements including clauses that would limit mediators' liability.

Mediation in the United States

Note the differences between the legal definition of civil mediation in the United States of America and mediation in other countries. Compared with the situation elsewhere, mediation appears more "professionalized" in the United States] where State laws regarding the use of lawyers as opposed to mediators may differ widely. One can best understand these differences in a more global context of variances between countries.

Within the United States, the laws governing mediation vary greatly on a state-by-state basis. Some states have fairly sophisticated laws concerning mediation, including clear expectations for certification, ethical standards, and protections preserving the confidential nature of mediation by ensuring that mediators need not testify in a case they've worked on. However, even in states that have such developed laws around mediation, that law only relates to mediators working within the court system. Community and commercial mediators practising outside the court system may very well not have these same sorts of legal protections.

Professional mediators often consider the option of liability insurance — traditionally marketed through professional dispute-resolution organizations.

Without-prejudice privilege

The without-prejudice privilege in common law terms denotes that when in honest attempts to reach some type of settlement any offers or admissions cannot be used in a court of law when the subject matter is the same. This further applies to negotiations that are made as part of the mediation process. There are however some exceptions to the without privilege rule.

The without prejudice privilege emerges clearly from the description of the case *AWA Ltd v Daniels* (t/as Deloitte Haskins and Sells). *AWA Ltd* commenced proceedings in the Supreme Court of NSW against *Daniels* for failing to audit their accounts properly. Mediation was ordered and failed. But during the mediation *AWA Ltd* disclosed that they had a document that gave its directors full indemnity with respect to any legal proceedings. *AWA Ltd* was under the impression that they gave this information without prejudice and therefore it could not be used in a court of law. When mediation failed litigation resumed.

During the litigation *Daniels* asked for a copy of the indemnity deed. *AWA Ltd* claimed privilege, but the presiding **Rolfe J**, stated that privilege was not applicable as the document was admissible. Further to this **Rolfe, J** added that *Daniels* was "only seeking to prove a fact which was referred to in the mediation".

The without-prejudice privilege does not apply if it has been excluded by either party or if the rights to the privilege has been waived in proceedings and it must be remembered that although a mediation is private and confidential, the disclosure of privileged information in the presence of a mediator does not represent a waiver of the privilege.

Mediation in politics and in diplomacy

Diplomats typically engage in mediation as one of their most important activities. Some people consider that it should be a relevant quality of democratic politicians, given that usually in both these fields the explicitation of the respective mansions (on a formal basis, at least) require the achievement of agreements between separate entities of which the diplomat or the politician are third parties by definition; Hobbes and Bodin found that the organs of a state have a mediating power and function.

These activities are usually performed in order to get, on the subjective point of view of this mediator, a recompense that might be in the form of a direct economical advantage, a political advantage, an increased international prestige or influence.

One of many non-violent methods of dispute resolution

In politics and in diplomacy, mediation obviously offers a non-violent method of dispute resolution (some indeed argue that other methods would be many), although it is usually assumed or included in definitions of other methods.

Some theorists, notably Rushworth Kidder, have claimed that mediation is the foundation of a new (some say 'postmodern') ethics - and that it sidesteps traditional ethical issues with pre-defined limits of morality.

Othersclaim that mediation is a form of harms reduction or de-escalation, especially in its large-scale application in peace process and similar negotiation, or the bottom-up way it is performed in the peace movement where it is often called mindful mediation. In this form, it would be derived from methods of Quakers in particular.

Mediation and industrial relations

According to Boulle (2005, p. 286), conciliation and ADR began in industrial relations in Australia long before the arrival of the modern ADR movement. One of the first statutes passed by the Commonwealth parliament was the Conciliation and Arbitration Act 1904 (Cth). This allowed the Federal Government to pass laws on conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one state. In Australian industrial relations, conciliation has been the most prominently used form of ADR, and is generally far removed from modern mediation.

Significant changes in state policy concerning Australian industrial relations took place over the decade 1996 to 2007. The Howard government, with the introduction of the Workplace Relations Act 1996 (Cth), sought to shift the industrial system away from a collectivist approach, where unions and the AIRC had strong roles, to a more decentralized system of individual bargaining between employers and employees (Bamber et al., 2000, p. 43). The WRA Act 1996 (Cth) diminished the traditional role of the AIRC by placing the responsibility of resolving disputes at the enterprise level (Boulle, 2005, p. 287). This allowed mediation to be used to resolve industrial relations disputes instead of the traditionally used conciliation.

The new 'Work Choices' Amendment came into effect in March 2006, and included a compulsory model dispute-resolution process that doesn't involve the AIRC. Mediation and other ADR processes have been encouraged by the government as a better option than the services provided by the AIRC. The government has realized the benefits of mediation to include the following (Van Gramberg, 2006, p. 11):

- Mediation is cost saving
- Avoids polarization of parties
- Is educative
- Probes wider issues than the formal court system
- Provides greater access to justice
- Gives disputants more control over the dispute process

The workplace and mediation

Mediation emerged on the industrial relations landscape in the late 1980s due to a number of economic and political factors, which then induced managerial initiatives. According to Van Gramberg (2006, p. 173) these changes have come from the implementation of human resource management policies and practices, which focuses on the individual worker, and rejects all other third parties such as unions, and the Australian Industrial relations Commission (AIRC). HRM together with the political and economic changes undertaken by the Howard government has created an environment where private ADR can be fostered in the workplace (Bamber et al., 2000, p. 45). The decline of unionism and the encouragement of individualization in the workplace have encouraged the growth of private mediations. This is demonstrated in the industries with the lowest union rates such as in the private business sector having the greatest growth of mediation (Van Gramberg, 2006, p. 174).

The Howard government's Work Choices Act, which came into effect on March 2006, made further legislative changes to deregulate the industrial relations system. A key element of the new changes was to weaken the powers of the AIRC in conciliation and arbitration by installing and encouraging private mediation in competition with the services provided by the AIRC.

Workplace conflicts can cover a great variety of disputes. For example disputes between staff members, allegations of harassment, contractual disputes relating to the terms and conditions of employment and workers-compensation claims (Boulle, 2005, p. 298). At large, workplace disputes are between people who have an ongoing

working relationship within a closed system, which indicate that mediation would be appropriate as a means of a dispute resolution process. However in organisations there are many complex relationships, involving hierarchy, job security and competitiveness that make mediation a difficult task (Boulle, 2005, p. 298).

Conflict-management

Society perceives conflict as something that gets in the way of progress, as a negative symptom of a relationship that one should cure as quickly as possible (Boulle, 2005, p. 87). However within the mediation profession conflict is seen as a fact of life and when properly managed it can have many benefits for the parties and constituents (Bagshaw, 1999, p. 206, Boulle, 2005, p. 87). The benefits of conflict include the opportunity to renew relationships and make positive changes for the future. Mediation should be a productive process, where conflict can be managed and expressed safely (Bradford, 2006, p. 148). It is the mediator's responsibility to let the parties express their emotions entailed in conflict safely. Allowing the parties to express these emotions may seem unhelpful in resolving the dispute, but if managed constructively these emotions may help towards a better relationship between the parties in the future.

Measuring the effectiveness of conflict management

The ADR field has felt a need to define the effectiveness of dispute-resolution in a broad manner, including more than whether there was a settlement (Boulle, 2005, p. 88). Mediation as a field of dispute resolution recognized there was more to measuring effectiveness, than a settlement. Mediation recognised in its own field that party satisfaction of the process and mediator competence could be measured. According to Boulle (2005, p. 88) surveys of those who have participated in mediation reveal strong levels of satisfaction of the process.

Benefits of mediation may include:

- discovering parties' interests and priorities
- healthy venting of emotions in a protected environment
- an agreement to talk about a set agenda
- identifying roles of the constituents, such as relatives and professional advisors
- knowledge of a constructive dispute resolution for use in a future dispute

Confidentiality and mediation

Confidentiality emerges as a powerful and attractive feature of mediation (Van Gramberg, 2006, p. 38). The private and confidential aspect of mediation is in contrast with the courts and tribunals which are open to the public, and kept on record. Privacy is a big motivator for people to choose mediation over the courts or tribunals. Although mediation is promoted with confidentiality being one of the defining features of the process, it is not in reality as private and confidential as often claimed (Boulle, 2005, p. 539). In some circumstances the parties agree that the mediation should not be private and confidential in parts or in whole.

Concerning the law there are limits to privacy and confidentiality, for example if their mediation entails abuse allegations, the mediator must disclose this information to the authorities. Also the more parties in a mediation the less likely it will be to maintain all the information as confidential. For example some parties may be required to give an account of the mediation to outside constituents or authorities (Boulle, 2005, p. 539).

Two competing principles affect the confidentiality of mediations. One principle involves upholding confidentiality as means to encourage people to settle out of the courts and avoid litigation, while the second principle states that all related facts in the mediation should be available to the courts.

A number of reasons exist for keeping mediation private and confidential; these include:

- it makes the mediation appealing
- it provides a safe environment to disclose information and emotions
- confidentiality makes mediation more effective by making parties talk realistically
- confidentiality upholds mediators' reputations, as it reinforces impartiality
- confidentiality makes agreement more final, as there is little room to seek review

Global relevance

The rise of international trade law, continental trading blocs, the World Trade Organization (and its opposing anti-globalization movement), and use of the Internet, among other factors, seem to suggest that legal complexity has started to reach an intolerable and undesirable point. There may be no obvious way to determine which jurisdiction has precedence over which other, and there may be substantial resistance to settling a matter in any one place.

Accordingly, mediation may come into more widespread use, replacing formal legal and judicial processes sanctified by nation-states. Some people, like members of the anti-globalization movement, believe such formal processes have quite thoroughly failed to provide real safety and closure guarantees that are pre-requisite to uniform rule of law.

Following an increasing awareness of the process, and a wider notion of its main aspects and eventual effects, some commentators in recent times have frequently proposed mediation for the resolution of international disputes, with attention to belligerent situations too.

However, as mediation ordinarily needs participation by the interested parties and it would be very difficult to impose it, in case one of the parts refuses this process it cannot be a solution.

Fairness

As noted, mediation can only take place in an atmosphere where there is some agreement on safety, fairness and closure, usually provided by nation-states and their legal systems. But increasingly, disputes transcend international borders and include many parties who may be in unequal-power relationships.

In such circumstances, with many parties afraid to be identified or to make formal complaints, terminology or rules of standing or evidence slanted against some groups, and without power to enforce even "legally binding" contracts, some conclude that the process of mediation would not reasonably be said to be "fair".

Accordingly, even when a party offers to mediate and a mediator attempts to make the process fair, mediation itself might not operate as a fair process. In such cases, parties may pursue other means of dispute resolution.

From a more technical point of view, however, one must recall that the parties must require mediation, and very seldom can it be imposed by "non-parties" upon the parties. Therefore, in presence of entities that cannot be clearly identified, and that practically don't claim for their recognition as "parties", the professional experience of a mediator could only apply to a proposal of definition, that besides would always miss the constitutional elements of a mediation. Moreover, in such circumstances, the counter-party of these eventual entities would very likely deny any prestige of 'party' to the opponent, this not consenting any kind of treaty (in a correct mediation).

More generally, given that mediation ordinarily produces agreements containing elements to enforce the pacts with facts that can grant its effectiveness, note that other mechanisms apart from legal systems may ensure protection of the pacts: modern mediation frequently tends to define economic compensations and warranties too, generally considered quicker and more effective. The concrete 'power' of an agreement is classically found in the *equilibre* of the pact, in the sincere conciliation of respective interests and in the inclusion of measures that would make the rupture of the pact very little convenient for the unfaithful party. Pacts that don't have such sufficient warranties are only academically effects of a mediation, but would never respect the deontology of the mediator.

Phoenix Coyotes

On May 19, 2009 a bankruptcy judge ordered the NHL and Phoenix Coyotes owner Jerry Moyes to mediation in an attempt to resolve their fight over who is in control of a franchise that both sides agree is insolvent.

Judge Redfield Baum made the ruling after hearing arguments from attorneys on both sides in U.S. bankruptcy court Tuesday over the NHL's contention that Moyes had no authority to file Chapter 11 bankruptcy earlier this month.

The league and Moyes are to report their progress at a status hearing May 27. Meanwhile, Baum said to relocate the team anywhere must be decided before the franchise is sold.

Conflict management style

A **conflict management style** is the pattern of behaviour an individual develops in response to conflict with others such as differences of opinion. Conflict management styles tend to be consistent over time.[*citation needed*] Conflict management is the skill needed to resolve different situations.

Development

The field of conflict management, conflict resolution, or conflict transformation (there is a lack of consensus in naming convention[*citation needed*]) has since the 1970's sought to teach people to be more conscious of their conflict management style. The premise behind this is that greater awareness of their style by individuals enables them to make better choices of how to respond. Someone who knows they have a tendency to avoid conflict, for example, might in some circumstances choose a different and perhaps more appropriate response.

Application

The most widely used tool for this is a conflict style inventory, typically a short questionnaire filled out by a user, with interpretation of the scores given in writing or by an instructor. The point is not to categorize the user, but rather to give him or her a framework in which to assess responses and options. Conflict style inventories in wide use today include the Thomas Kilmann and Style Matters: The Kraybill Conflict Style Inventory

Diplomacy.

Diplomacy is the art and practice of conducting negotiations between representatives of groups or states. It usually refers to international diplomacy, the conduct of international relations through the intercession of professional diplomats with regard to issues of peace-making, trade, war, economics and culture. International treaties are usually negotiated by diplomats prior to endorsement by national politicians.

In an informal or social sense, diplomacy is the employment of tact to gain strategic advantage or to find mutually acceptable solutions to a common challenge, one set of tools being the phrasing of statements in a non-confrontational, or polite manner.

Origin of the word

The word stems from the Greek word "*diploma*", which literally means 'folded in two'. In ancient Greece, a diploma was a certificate certifying completion of a course of study, typically folded in two. In the days of the Roman Empire, the word "*diploma*" was used to describe official travel documents, such as passports and passes for imperial roads, that were stamped on double metal plates. Later, the meaning was extended to cover other official documents such as treaties with foreign tribes. In the 1700s the French called their body of officials attached to foreign legations the corps

"*diplomatique*". The word "*diplomacy*" was first introduced into the English language by Edmund Burke in 1796, based on the French word "*diploma tie*".

The science of diplomatics, dealing with the study of old documents, also ows its name to the above, but its present meaning is completely distinct from that of diplomacy.

Diplomats and diplomatic missions

The collective term for a group of diplomats from a single country who reside in another country is a diplomatic mission. Ambassador is the most senior diplomatic rank; a diplomatic mission headed by an ambassador is known as an embassy, with the exception of permanent missions at the United Nations, the Organization of American States, or other multilateral organizations, which are also headed by ambassadors. The collective body of all diplomats of particular country is called that country's diplomatic service. The collective body of all diplomats assigned to a particular country is the diplomatic corps. (See also diplomatic rank.)

History

Ancient Egypt, Canaan, and Hittite Empire

Some of the earliest known diplomatic records are the Amarna letters written between the pharaohs of the Eighteenth dynasty of Egypt and the Amurru rulers of Canaan during the 14th century BC. Following the Battle of Kadesh in *c*. 1274 BC during the Nineteenth dynasty, the pharaoh of Egypt and ruler of the Hittite Empire created one of the first known international peace treaties which survives in stone tablet fragments.

Classical Greece

The Greek City States on some occasions sent envoys to each other in order to negotiate specific issues, such as war and peace or commercial relations, but did not have diplomatic representatives regularly posted in each other's territory. However, some of the functions given to modern diplomatic representatives were in Classical Greece filled by a proxenos, who was a citizen of the host city having a particular relations of friendship with another city – a relationship often hereditary in a particular family.

Europe

Ancient roots

The ability to practice diplomacy is one of the defining elements of a state. As noted above, diplomacy has been practiced since the first city-states were formed millennia ago in ancient Greece. For most of human history diplomats were sent only for specific negotiations, and would return immediately after their mission concluded. Diplomats were usually relatives of the ruling family or of very high rank in order to give them legitimacy when they sought to negotiate with the other state.

One notable exception involved the relationship between the Pope and the Byzantine Emperor; papal agents, called *apocrisiarii*, were permanently resident in Constantinople. After the 8th century, however, conflicts between the Pope and Emperor (such as the Iconoclastic controversy) led to the breaking of close ties.

The origins of diplomacy lie in the strategic and competitive exchange of impressive gifts, which may be traced to the Bronze Age and recognized as an aspect of Homeric guest-friendship.Thus diplomacy and trade have been inexorably linked from the outset. "In the framework of diplomatic relations it was customary for Byzantine emperors and Muslim rulers, especially the 'Abbāsids and the Fātimids, as well as for Muslim rulers between themselves, to exchange precious gifts, with which they attempted to impress or surpass their counterparts," remarks David Jacoby, in the context of the economics of silk in cultural exchange among Byzantium, Islam and the Latin West: merchants accompanied emissaries, who often traveled on commercial ships. At a later date, it will be recalled that the English adventurer and trader Anthony Sherley convinced the Persian ruler to send the first Persian embassy to Europe (1599–1602).

Roots of modern diplomacy

Early modern diplomacy's origins are often traced to the states of Northern Italy in the early Renaissance, with the first embassies being established in the thirteenth century. Milan played a leading role, especially under Francesco Sforza who established permanent embassies to the other city states of Northern Italy. Tuscany and Venice were also flourishing centres of diplomacy from the 1300s onwards. It was in the Italian Peninsula that many of the traditions of modern diplomacy began, such as the presentation of an ambassador's credentials to the head of state.

From Italy the practice was spread to other European regions. Milan was the first to send a representative to the court of France in 1455. However, Milan refused to host French representatives fearing espionage and that the French representatives would intervene in its internal affairs. As foreign powers such as France and Spain became increasingly involved in Italian politics the need to accept emissaries was recognized. Soon the major European powers were exchanging representatives. Spain was the first to send a permanent representative; it appointed an ambassador to the Court of England in 1487. By the late 16th century, permanent missions became customary. The Holy Roman Emperor, however, did not regularly send permanent legates, as they could not represent the interests of all the German princes (who were in theory all subordinate to the Emperor, but in practice each independent).

During that period the rules of modern diplomacy were further developed. The top rank of representatives was an ambassador. At that time an ambassador was a nobleman, the rank of the noble assigned varying with the prestige of the country he was delegated to. Strict standards developed for ambassadors, requiring they have large residences, host lavish parties, and play an important role in the court life of their host nation. In Rome, the most prized posting for a Catholic ambassador, the French and Spanish representatives would have a retinue of up to a hundred. Even in smaller posts, ambassadors were very expensive. Smaller states would send and

receive envoys, who were a rung below ambassador. Somewhere between the two was the position of minister plenipotentiary.

Diplomacy was a complex affair, even more so than now. The ambassadors from each state were ranked by complex levels of precedence that were much disputed. States were normally ranked by the title of the sovereign; for Catholic nations the emissary from the Vatican was paramount, then those from the kingdoms, then those from duchies and principalities. Representatives from republics were ranked the lowest (which often angered the leaders of the numerous German, Scandinavian and Italian republics). Determining precedence between two kingdoms depended on a number of factors that often fluctuated, leading to near-constant squabbling.

French diplomat Charles Maurice de Talleyrand-Périgord is considered one of the most skilled diplomats of all time.

Ambassadors, nobles with little foreign experience and no expectation of a career in diplomacy, needed to be supported by large embassy staff. These professionals would be sent on longer assignments and would be far more knowledgeable than the higher-ranking officials about the host country. Embassy staff would include a wide range of employees, including some dedicated to espionage. The need for skilled individuals to staff embassies was met by the graduates of universities, and this led to a great increase in the study of international law, modern languages, and history at universities throughout Europe.

At the same time, permanent foreign ministries began to be established in almost all European states to coordinate embassies and their staffs. These ministries were still far from their modern form, and many of them had extraneous internal responsibilities. Britain had two departments with frequently overlapping powers until 1782. They were also far smaller than they are currently. France, which boasted the largest foreign affairs department, had only some 70 full-time employees in the 1780s.

The elements of modern diplomacy slowly spread to Eastern Europe and Russia, arriving by the early eighteenth century. The entire edifice would be greatly disrupted by the French Revolution and the subsequent years of warfare. The revolution would see commoners take over the diplomacy of the French state, and of those conquered by revolutionary armies. Ranks of precedence were abolished. Napoleon also refused to acknowledge diplomatic immunity, imprisoning several British diplomats accused of scheming against France.

After the fall of Napoleon, the Congress of Vienna of 1815 established an international system of diplomatic rank. Disputes on precedence among nations (and therefore the appropriate diplomatic ranks used) persisted for over a century until after World War II, when the rank of ambassador became the norm. In between that time, figures such as the German Chancellor Otto von Bismark were renowned for international diplomacy.

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[Ancient India

Ancient India, with its kingdoms and dynasties, had a long tradition of diplomacy. The oldest treatise on statecraft and diplomacy, *Arthashastra*, is attributed to Kautilya (also known as Chanakya), who was the principal adviser to Chandragupta Maurya, the founder of the Maurya dynasty who ruled in the 3rd century BC, (whose capital was Patliputra, today's Patna, the chief city of Bihar state). *Arthashastra* is a complete work on the art of kingship, with long chapters on taxation and on the raising and maintenance of armies. It also incorporates a theory of diplomacy, of how in a situation of mutually contesting kingdoms, the wise king build alliances and tries to checkmate his adversaries. The envoys sent at the time to the courts of other kingdoms tended to reside for extended periods of time, and *Arthashastra* contains advice on the deportment of the envoy, including the trenchant suggestion that 'he should sleep alone'. The highest morality for the king is that his kingdom should prosper.

China

Foreign relations of Imperial China

One of the earliest realists in international relations theory was the 6th century BC military strategist Sun Tzu (d. 496 BC), author of *The Art of War*. He lived during a time in which rival states were starting to pay less attention to traditional respects of tutelage to the Zhou Dynasty (c. 1050–256 BC) figurehead monarchs while each vied for power and total conquest. However, a great deal of diplomacy in establishing allies, bartering land, and signing peace treaties was necessary for each warring state.

From the Battle of Baideng (200 BC) to the Battle of Mayi (133 BC), the Han Dynasty was forced to uphold a marriage alliance and pay an exorbitant amount of tribute (in silk, cloth, grain, and other foodstuffs) to the powerful northern nomadic Xingu that had been consolidated by Modu Shanyu. After the Xiongnu sent word to Emperor Wen of Han (r. 180–157) that they controlled areas stretching from Manchuria to the Tarim Basin oasis city-states, a treaty was drafted in 162 BC proclaiming that everything north of the Great Wall belong to nomads' lands, while everything south of it would be reserved for Han Chinese. The treaty was renewed no less than nine times, but did not restrain some Xiongnu *tuqi* from raiding Han borders. That was until the far-flung campaigns of Emperor Wu of Han (r. 141–87 BC) which shattered the unity of the Xiongnu and allowed Han to conquer the Western Regions; under Wu, in 104 BC the Han armies ventured as far Fergana in Central Asia to battle the Yuezhi who had conquered Hellenistic Greek areas.

Portraits of Periodical Offering, a 6th century Chinese painting portraying various emissaries; ambassadors depicted in the painting ranging from those of Hephthalites, Persia to Langkasuka, Baekje(part of the modern Korea), Qiuci, and Wo (Japan).

The Koreans and Japanese during the Chinese Tang Dynasty (618–907 AD) looked to the Chinese capital of Chang'an as the hub of civilization and emulated its central

bureaucracy as the model of governance. The Japanese sent frequent embassies to China in this period, although they halted these trips in 894 during the Tang's imminent collapse. After the devastating An Shi Rebellion from 755 to 763, the Tang Dynasty was in no position to reconquer Central Asia and the Tarim Basin. After several conflicts with the Tibetan Empire spanning several different decades, the Tang finally made a truce and signed a peace treaty with them in 841.

In the 11th century during the Song Dynasty (960–1279), there were cunning ambassadors such as Shen Kuo and Su Song who achieved diplomatic success with the Liao Dynasty, the often hostile Khitan neighbor to the north. Both diplomats secured the rightful borders of the Song Dynasty through knowledge of cartography and dredging up old court archives. There was also a triad of warfare and diplomacy between these two states and the Tangut Western Xia Dynasty to the northwest of Song China (centered in modern-day Shaanxi). After warring with the Lý Dynasty of Vietnam from 1075 to 1077, Song and Lý made a peace agreement in 1082 to exchange the respective lands they had captured from each other during the war.

Long before the Tang and Song dynasties, the Chinese had sent envoys into Central Asia, India, and Persia starting with Zhang Qian in the 2nd century BC. Another notable event in Chinese diplomacy was the Chinese embassy mission of Zhou Daguan to the Khmer Empire of Cambodia in the 13th century. Chinese diplomacy was a necessity in the distinctive period of Chinese exploration. Since the Tang Dynasty (618–907 AD), the Chinese also became heavily invested in sending diplomatic envoys abroad on maritime missions into the Indian Ocean, to India, Persia, Arabia, East Africa, and Egypt. Chinese maritime activity was increased dramatically during the commercialized period of the Song Dynasty, with new nautical technologies, many more private ship owners, and an increasing amount of economic investors in overseas ventures.

During the Mongol Empire (1206–1294) the Mongols created something similar to today's diplomatic passport called paiza. The paiza were in three different types (golden, silver, and copper) depending on the envoy's level of importance. With the paiza, there came authority that the envoy can ask for food, transport, place to stay from any city, village, or clan within the empire with no difficulties.

Since the 17th century, there was a series of treaties upheld by Qing Dynasty China and Czarist Russia, beginning with the Treaty of Nerchinsk in the year 1689. This was followed up by the Aigun Treaty and the Convention of Peking in the mid 19th century.

As European power spread around the world in the eighteenth and nineteenth centuries so too did its diplomatic model and system become adopted by Asian countries.

Modern era

Diplomatic relations within the Early Modern era of Asia were depicted as an environment of prestige and Status. It was maintained that one must be of noble ancestry in order to represent an autonomous state within the international arena.[6]

Therefore the position of diplomat was often revered as an element of the elitist class within Asia. A state's ability to practice diplomacy has been one of the underlying defining characteristics of an autonomous state. It is this practice that has been employed since the conception of the first city-states within the international spectrum. Diplomats in Asia were originally sent only for the purpose of negotiation. They would be required to immediately return after their task was completed. The majority of diplomats initially constituted the relatives of the ruling family. A high rank was bestowed upon them in order to present a sense of legitimacy with regards to their presence. Italy, the Ottoman Empire, and China were the first real states that perpetuated environments of diplomacy. During the early modern era diplomacy evolved to become a crucial element of international relations within the Mediterranean and Asia.

Ottoman Empire

Diplomatic traditions outside of Europe differed greatly. A feature necessary for diplomacy is the existence of a number of states of somewhat equal power, as existed in Italy during the Renaissance, and in Europe for much of the modern period. By contrast, in Asia and the Middle East, China and the Ottoman Empire were reluctant to practice bilateral diplomacy as they viewed themselves to be unquestionably superior to all their neighbours (hence, set up smaller nations as tributaries and vassals). The Ottoman Turks, for instance, would not send missions to other states, expecting representatives to come to Istanbul. It would not be until the nineteenth century that the Ottoman Empire established permanent embassies in other capitals.

Relations with the government of the Ottoman Empire (known as the Sublime Porte) were particularly important to Italian states. The maritime republics of Genoa and Venice depended less and less upon their nautical capabilities, and more and more upon the perpetuation of good relations with the Ottomans. Interactions between various merchants, diplomats, and religious men between the Italian and Ottoman empires helped inaugurate and create new forms of diplomacy and statecraft. Eventually the primary purpose of a diplomat, which was originally a negotiator, evolved into a persona that represented an autonomous state in all aspects of political affairs. It became evident that all other sovereigns felt the need to accommodate themselves diplomatically, due to the emergence of the powerful political environment of the Ottoman Empire. One could come to the conclusion that the atmosphere of diplomacy within the early modern period revolved around a foundation of conformity to Ottoman culture.

Italy

The origins of modern diplomacy within the international spectrum of politics, could often be traced back to the states of Northern Italy. This was during the early renaissance, where the first diplomatic embassies were established in the thirteenth century. The state of Milan played an incredible part in the establishment of permanent embassies within the city states of Northern Italy. Various diplomatic traditions were also conceived within Italy. The presentation of an Ambassador's

credentials and acknowledgments are elements that were inaugurated in Italian early modern diplomacy.

The practice of diplomacy and its various intricacies were also spread to various other autonomous European states. Milan created the first diplomatic international gesture in 1455, by sending a representative to the court of France. It was extremely controversial however, that they would not accept the same gesture from France, due to the fears of espionage and intervention in internal affairs. It had eventually become evident that as super powers such as France and Spain grew in size and strength, and there was an overarching necessity to accept any form of diplomatic effort within the international arena. Eventually Italy paved the way for all European power to exchange representatives. By the late 16th century, permanent emissaries were standard practice.

Diplomatic strategy

Real world diplomatic negotiations are very different from intellectual debates in a university where an issue is decided on the merit of the arguments and negotiators make a deal by splitting the difference. Though diplomatic agreements can sometimes be reached among liberal democratic nations by appealing to higher principles, most real world diplomacy has traditionally been heavily influenced by hard power.

The interaction of strength and diplomacy can be illustrated by a comparison to labor negotiations. If a labor union is not willing to strike, then the union is not going anywhere because management has absolutely no incentive to agree to union demands. On the other hand, if management is not willing to take a strike, then the company will be walked all over by the labor union, and management will be forced to agree to any demand the union makes. The same concept applies to diplomatic negotiations.

There are also incentives in diplomacy to act reasonably, especially if the support of other actors is needed. The gain from winning one negotiation can be much less than the increased hostility from other parts. This is also called soft power.

Many situations in modern diplomacy are also rules based. When for instance two WTO countries have trade disputes, it is in the interest of both to limit the spill over damage to other areas by following some agreed-upon rules.

Diplomatic immunity

Diplomatic immunity

The sanctity of diplomats has long been observed. This sanctity has come to be known as diplomatic immunity. While there have been a number of cases where diplomats have been killed, this is normally viewed as a great breach of honour. Genghis Khan and the Mongols were well known for strongly insisting on the rights of diplomats, and they would often wreak horrific vengeance against any state that violated these rights.

Diplomatic rights were established in the mid-seventeenth century in Europe and have spread throughout the world. These rights were formalized by the 1961 Vienna Convention on Diplomatic Relations, which protects diplomats from being persecuted or prosecuted while on a diplomatic mission. If a diplomat does commit a serious crime while in a host country he may be declared as persona non grata (unwanted person). Such diplomats are then often tried for the crime in their homeland.

Diplomatic communications are also viewed as sacrosanct, and diplomats have long been allowed to carry documents across borders without being searched. The mechanism for this is the so-called "diplomatic bag" (or, in some countries, the "diplomatic pouch"). While radio and digital communication have become more standard for embassies, diplomatic pouches are still quite common and some countries, including the United States, declare entire shipping containers as diplomatic pouches to bring sensitive material (often building supplies) into a country.

In times of hostility, diplomats are often withdrawn for reasons of personal safety, as well as in some cases when the host country is friendly but there is a perceived threat from internal dissidents. Ambassadors and other diplomats are sometimes recalled temporarily by their home countries as a way to express displeasure with the host country. In both cases, lower-level employees still remain to actually do the business of diplomacy.

Diplomats as a guarantee

In the Ottoman Empire, the diplomats of Persia and other states were seen as a guarantee of good behavior. If a nation broke a treaty or if their nationals misbehaved the diplomats would be punished. Diplomats were thus used as an enforcement mechanism on treaties and international law. To ensure that punishing a diplomat mattered rulers insisted on high-ranking figures. This tradition is seen by supporters of Iran as a legal basis of the 1979 Iranian hostage crisis. In imitation of alleged previous practices supporters of the Iranian Revolution attempted to punish the United States for its alleged misdeeds by holding their diplomats hostage. Diplomats as a guarantee were also employed sometimes in pre-modern Europe and other parts of Asia.

Diplomacy and espionage

Diplomacy is closely linked to espionage or gathering of intelligence. Embassies are bases for both diplomats and spies, and some diplomats are essentially openly-acknowledged spies. For instance, the job of military attachés includes learning as much as possible about the military of the nation to which they are assigned. They do not try to hide this role and, as such, are only invited to events allowed by their hosts, such as military parades or air shows. There are also deep-cover spies operating in many embassies. These individuals are given fake positions at the embassy, but their main task is to illegally gather intelligence, usually by coordinating spy rings of locals or other spies. For the most part, spies operating out of embassies gather little intelligence themselves and their identities tend to be

known by the opposition. If discovered, these diplomats can be expelled from an embassy, but for the most part counter-intelligence agencies prefer to keep these agents *in situ* and under close monitoring.

The information gathered by spies plays an increasingly important role in diplomacy. Arms-control treaties would be impossible without the power of reconnaissance satellites and agents to monitor compliance. Information gleaned from espionage is useful in almost all forms of diplomacy, everything from trade agreements to border disputes.

Diplomatic resolution of problems

Various processes and procedures have evolved over time for handling diplomatic issues and disputes.

Arbitration and mediations

Nations sometimes resort to international arbitration when faced with a specific question or point of contention in need of resolution. For most of history, there were no official or formal procedures for such proceedings. They were generally accepted to abide by general principles and protocols related to international law and justice.

Sometimes these took the form of formal arbitrations and mediations. In such cases a commission of diplomats might be convened to hear all sides of an issue, and to come some sort of ruling based on international law.

In the modern era, much of this work is often carried out by the International Court of Justice at the Hague, or other formal commissions, agencies and tribunals, working under the United Nations. Below are some examples.

- Hay-Herbert Treaty Enacted after the United States and Britain submitted a dispute to international mediation about the US-Canadian border.

Conferences

Other times, resolutions were sought through the convening of international conferences. In such cases, there are fewer ground rules, and fewer formal applications of international law. However, participants are expected to guide themselves through principles of international fairness, logic, and protocol.

Some examples of these formal conferences are:

- Congress of Vienna (1815) – After Napoleon was defeated, there were many diplomatic questions waiting to be resolved. This included the shape of the map of Europe, the disposition of political and nationalist claims of various ethnic groups and nationalities wishing to have some political autonomy, and the resolution of various claims by various European powers.

- The Congress of Berlin (June 13 – July 13, 1878) was a meeting of the European Great Powers' and the Ottoman Empire's leading statesmen in Berlin in 1878. In the wake of the Russo-Turkish War, 1877–78, the meeting's aim was to reorganize conditions in the Balkans.

Negotiations

Sometimes nations convene official negotiation processes to settle an issue or dispute between several nations which are parties to a dispute. These are similar to the conferences mentioned above, as there are technically no established rules or procedures. However, there are general principles and precedents which help define a course for such proceedings.

Some examples are

- Camp David accord Convened in 1978 by President Jimmy Carter of the United States, at Camp David to reach an agreement between Prime Minister Mechaem Begin of Israel and President Anwar Sadat of Egypt. After weeks of negotiation, agreement was reached and the accords were signed, later leading directly to the Israel-Egypt Peace Treaty of 1979.

- Treaty of Portsmouth Enacted after President Theodore Roosevelt brought together the delegates from Russia and Japan, to settle the Russo-Japanese War. Roosevelt's personal intervention settled the conflict, and caused him to win the Nobel peace prize.

Diplomatic recognition

Diplomatic recognition is an important factor in determining whether a nation is an independent state. Receiving recognition is often difficult, even for countries which are fully sovereign. For many decades after its becoming independent, even many of the closest allies of the Dutch Republic refused to grant it full recognition. Today there are a number of independent entities without widespread diplomatic recognition, most notably the Republic of China on Taiwan. Since the 1970s, most nations have stopped officially recognizing the ROC's existence on Taiwan, at the insistence of the People's Republic of China. Currently, the United States and other nations maintain informal relations through de facto embassies, with names such as the American Institute in Taiwan. Similarly, Taiwan's de facto embassies abroad are known by names such as the Taipei Economic and Cultural Representative Office. This was not always the case, with the US maintaining official diplomatic ties with the ROC, recognizing it as the sole and legitimate government of all of China until 1979, when these relations were broken off as a condition for establishing official relations with Communist China.

The Palestinian National Authority has its own diplomatic service, however Palestinian representatives in most Western countries are not accorded diplomatic immunity, and their missions are referred to as Delegations General.

Other unrecognized regions which claim independence include Abkhazia, Transnistria, Somaliland, South Ossetia, Nagorno Karabakh, and the Turkish Republic of Northern Cyprus. Lacking the economic and political importance of Taiwan, these nations tend to be much more diplomatically isolated.

Though used as a factor in judging sovereignty, Article 3 of the Montevideo Convention states, "The political existence of the state is independent of recognition by other states."

Informal diplomacy

Informal diplomacy (sometimes called Track II diplomacy) has been used for centuries to communicate between powers. Most diplomats work to recruit figures in other nations who might be able to give informal access to a country's leadership. In some situations, such as between the United States and the People's Republic of China a large amount of diplomacy is done through semi-formal channels using interlocutors such as academic members of thinktanks. This occurs in situations where governments wish to express intentions or to suggest methods of resolving a diplomatic situation, but do not wish to express a formal position.

Track II diplomacy is a specific kind of informal diplomacy, in which non-officials (academic scholars, retired civil and military officials, public figures, social activists) engage in dialogue, with the aim of conflict resolution, or confidence-building. Sometimes governments may fund such Track II exchanges. Sometimes the exchanges may have no connection at all with governments, or may even act in defiance of governments; such exchanges are called Track III.

Om some occasion a former holder of an official position continues to carry out an informal diplomatic activity after retirement. In some cases, governments welcome such activity, for example as a means of establishing an initial contact with a hostile state of group without being formally committed. In other cases, however, such informal diplomats seek to promote a political agenda different from that of the government currently in power. Such informal diplomacy is practiced by former US Presidents Jimmy Carter and (to a lesser extent) Bill Clinton and by the former Israeli diplomat and minister Yossi Beilin (see Geneva Initiative).

Paradiplomacy

Paradiplomacy refers to the international relations conducted by subnational, regional, local or non-central governments. The most ordinary case of paradiplomatic relation refer to co-operation between bordering political entities. However, interest of federal states, provinces, regions etc., may extend over to different regions or to issues gathering local governments in multilateral fora worldwide. Some non-central governments may be allowed to negotiate and enter into agreement with foreign central states.

Cultural diplomacy

Cultural diplomacy is a part of diplomacy. It alludes to a new way of making diplomacy by involving new non governmental and non professional actors in the making of diplomacy. In the frame of globalization, culture plays a major role in the definition of identity and in the relations between people. Joseph Nye points out the importance of having a *soft power* besides a *hard power*. When classical diplomacy fails, a better knowledge can help bridging the gap between different cultures. Cultural diplomacy becomes a subject of academic studies based on historical essays on the United States, Europe, and the Cold War.

Small state diplomacy

Small state diplomacy is receiving increasing attention in diplomatic studies and international relations. Small states are particularly affected by developments which are determined beyond their borders such as climate change, water security and shifts in the global economy. Diplomacy is the main vehicle by which small states are able to ensure that their goals are addressed in the global arena. These factors mean that small states have strong incentives to support international cooperation. But with limited resources at their disposal, conducting effective diplomacy poses unique challenges for small states

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- ^ ***a*** ***b*** ***c*** Schellenberg, Parks-Savage & Rehfuss 2007
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AFRICA POPULATION INSTITUTE COURSE WORKS

BUSINESS STATISTICS

PAPER CODES: **APD(BA 201, SW 201, LPS 201, PA 201, IR 203, FA 201)**

1. a) With examples explain what is meant by descriptive statistics in relation to what is influential statistics?
   b) Discuss the relevance of statistic when compiling data?

2. a) Name and discuss the different methods of collecting statistical data?
   b) What is the difference between association statistics and correlation statistic?

3 . a) Mention and discuss the different scales used when collecting statistical data?
   b) Using the examples of your choice, calculate the standard deviation, please show all the working

APDSW 202: Rural Sociology

QN1,
i) What is rural sociology?
ii)What are the common differences between rural and urban sociology?

QN2,
i) Define a social theory as a concept and as a discipline?
ii) Write a brief historical analysis on the developments of social theory?

QN3,
i) Define the term agriculture and discuss the role of agriculture to the sustainable soc- human development?
ii) Write a brief historical origin on agriculture as an ancient practice?

ORGANISATIONAL MANAGEMENT

PAPER CODES: **APD(PM 204, BA 204, SW 204, LPS 203, PA 205, HR 205)**

1. a) What are some of the factors that affect organisational management?
   b) Name and discuss different types of organisational behaviour

2. a) With a well labelled diagram describe and illustrate maslow's theory of hierarchy of needs.
   b) Why was this theory later criticised?

3. a) What are informal organisation?
   b) Outline the characteristics of this organisational structure
   c) Discuss the functions of informal organisation.

HUMAN RESOURCE MANAGEMENT

PAPER CODES: **APDSW 204**

1. Human resource management is the function within an organization that focuses on recruitment and providing direction for the people who work within the organization.

a) Examine the features of the Human resources

b) Discuss the roles of human resource management

2. a)Elaborate the aims of performance appraisal

b) What are popular methods used in performance appraisal

3. a) What are the advantages and disadvantages of job rotation in the organisation?

b) What are some of the factors that determine wage rate of a company?

Negotiation and Mediation Skills

PAPER CODES: **APDSW 205**

1(a) Explain the understanding of the term Negotiation?

(b)Discuss using examples, the different approaches as used in Negotiation.

2. Discuss the various ways an international relations manager can employ to generate more ideas in his/her collaboration during negotiation?

3(a) Distinguish between arbitration and arbitral tribunal as used in negotiation and mediation

(b) Using relevant examples, explain the advantages and disadvantages of arbitration as tool used to resolve disputes

untry?