APPENDIX A

Technical Terms Used in the Excerpts

Not all authors use the same technical terms in describing their investigations: what is called a 'pseudo-random sample' by one author is for instance labeled as an 'ordinal sample' by an other. Likewise some refer to a 'scale' as a series of questions on one subjectmatter, while others use the same term to denote an answer device for a multiple choice question. Similarly there are great differences in the meaning attached to common words, such as 'reliability' and 'validity'. This confusion of tongues once necessitated the compilation of current technical jargon into a book named 'Thesaurus of Social Research Terminology' (Van der Merwe, 1974). In order to allow comparison between the various investigations, their design must obviously be described in one same language. Therefore all technical terms used in this book are enumerated and explained below. They are ordered in sequence of their appearance on the notationsheet by means of which the reports were excerpted. This notationsheet was presented in exhibit 4 on page 24.

type of study

descriptive or explanatory

A study is considered descriptive when its aim is to give a picture of the distribution of certain variables in a sample. For example, a poll to assess the percentage of unhappy citizens in a country. When the investigator wants to do more than describe how things are and he also wants to know 'why', the study is said to be explanatory.

explorative or testing

A study is considered explorative when the investigator has hardly any pre-assumptions about the field of investigation. When, however, he has developed specific expectations and wants to assess the tenability of these, we speak about 'hypothesis testing research'.

special group or local or national population

The subjects involved in the study can be selected in two ways: by considering people who share some special characteristics, such as age, income, occupation, etc., or by investigating all persons living in a region. In the first case we speak about a special group, in the latter about local, regional or national population, depending on the region involved.

snapshot or longitudinal

A study is considered longitudinal when its data are gathered at different points in time. If not, we speak about a snapshot study. This latter type of study is sometimes also denoted as synchronic.

experimental or non-experimental

A study is considered experimental when during the course of the investigation a change is induced by the investigator and when the effects of that change on the dependent variable are assessed; eventually by comparing with a control group. In all other cases studies are considered 'non-experimental'.

data gathering

observation

Information about the subject can be gathered in several ways. First of all by observation: observations of the subject's behavior in their normal daily routine and setting (field observation or naturalistic observation) or in a laboratory situation where he is confronted with controlled stimuli (laboratory observation). The investigator may make his observations hidden behind a one-way mirror (disguised observation) or he may decide for open observation. If observation involves the sharing of daily activities with the subject, we speak about participant observation. Observation may be structured (systematic or controlled), using detailed observation schedules or unstructured (natural, simple or qualitative observation).

interrrogation

A more common way of data gathering in happiness research is by posing questions. Questions may vary in their degree of structure.

- open-ended question

Open-ended, free answer or unrestricted answer questions leave the subject free to formulate his answer. When

- closed question

closed questions are used (sometimes called: cafetaria questions, multiple choice questions or fixed answer questions), the respondent is asked to choose from a list of assorted words or statements one or more that best represents his view.

- direct question

When using direct questions the interviewer asks directly what he wants to know. If he chooses to pose his question in a more hidden way so that the respondent should not become aware of his interests,

- indirect question

we use the term indirect questioning. Sometimes this latter method involves projective techniques (see below).

interrogation by questionnaires
- highly structured questionnaire
- lowly structured questionnaire

Questions may be presented in written questionnaires. Highly structured questionnaires use specific and often closed questions. This method is often used in mailed questionnaires and large scale survey research. Low structured questionnaires use less specific questions, for example, a request to write a story on a certain subject or to give one's opinion on a handful of topics.

interrogation by interview
- structured interview

Questions can also be posed verbally in an interview-situation. In a structured interview the interviewer fills out a questionnaire on the basis of the subject's responses on standardized questions. This technique is often used in telephonic interviews. It is often referred to as 'standardized personal interview'

- half-structured interview

The half-structured, open or qualitative interview does not use identical questions for all subjects. The interviewer is more sensitive to directions in the conversation opened by the subject himself. Other names for this kind of data gathering are non-directive, non-schedule, or exploratory interview. When the interviewer concentrates his questions on some limited number

— focused interview
— clinical interview

of points we speak about focused interview. If the term clinical interview is used we aim at an interview of this kind which is specially focused on assessing the psychological condition of the

— depth interview

subject: usually in a therapeutic setting. The term depth interview denotes an even more specific interview of this kind which focuses upon unconscious motivations and ideas, using techniques of free association, indirect questions, projective devices, etc.

Interviews are usually conducted at the house of the subject, but also in a laboratory setting, in a clinical setting, at the place of work, or by telephone.

content analysis

Another way of data gathering is analyzing written documents, dairies, essays, correspondence, etc. In case this involves objective, systematic and qualitative description of the manifest content of the documents, the term content analysis is used. This requires the development of a scheme of analysis according to which information can be selected and categorized. The term does not concern loose attempts to 'feel one's way into the matter'.

projective techniques

Finally, information can be gathered by observing the subject's verbal and expressive behavior when being confronted with ambiguous stimuli and asked to react by, for instance, making free associations on the forms he discovers in an inkblot; writing a story about a series of pictures shown to him; enumerating pleasant and unpleasant words that come to his mind, etc. This technique requires a subsequent content analysis of the answers.

- pictorial techniques — Pictorial techniques use pictures as projective material, for instance the inkblot in the Rohrschach test or the series of pictures in the Thematic Apperception Test.
- verbal techniques — Verbal techniques are sentence completion tests, word association test and indirect open-ended questions.
- role-playing — Role-playing is sometimes used to evoke projections as well. As such it figures in techniques like psychodrama, sociodrama and doll-playing.

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sample construction (see column 9 in Part III)

Sampling is the process by which inference is made to the whole by examining only a part. Usually a limited amount of the subjects is selected out of a wider population. When the process of sampling is spread over a longer period we speak of time sampling or multiphase sampling.

probability sampling

Two types of sampling methods can be distinguished; probability sampling and non-probability sampling. Probability sampling implies selection of subjects at random and allows generalizations over the population out of which this random selection took place. Non-probability methods on the other hand use implicit or explicit criteria for selection and therefore in principle provide no basis for generalization. Only when the sample thus constructed can be shown to equal the population in the distribution of some relevant characteristics some generality may be claimed. Non-probability methods are often used in exploratory research where the focus is on generating new ideas. Probability methods fit better with the objectives of describing and testing studies.
The following variants of probability sampling can be mentioned:

simple random sampling — Simple random sampling is selecting respondents without any system or criterion. For example haphazardly picking names out of parish registers. The only system allowed in this method is preventing that the same person is invited more than once to cooperate in the study.

systematic random sampling — Systematic probability sampling allows for some system in choosing the subjects, as long as this system does not interfere with the aim of the study. For example drawing every 10th name out of a register or inviting the head of the household of house nr 5 of every street in town. This procedure is also known as pseudo-random sampling and ordinal sampling. A variant of this method is random start sampling. Here some files of a register are choosen at simple random and thereafter used in a systematic way. The procedure is also known as the method of interpenetrating subsamples.

stratified sampling — More criteria are introduced with stratified sampling. Here the distribution of special characteristics in the sample is manipulated. This procedure is also known as controlled sampling, oversampling, optimal sampling and weighting. For example the age of the subjects may be controlled. If the investigator wants the distribution of his sample to be equal to the distribution of age in his population, he draws a sample proportionally stra-

tified by age. If he wants to be sure that there will be enough 90 year old subjects in his sample he will be inclined to draw a disproportionate sample with relatively more old people. Stratification can take place at the moment of sampling itself. We then speak of stratified or balanced sampling. Another possibility is random discard of some subjects with characteristics judged to be sufficiently represented in the sample. We speak here of post-stratification.

cluster sampling

— area sampling

— multi stage sampling

Often the population is too great to take a simple random sample. The inhabitants of a nation are not all represented in one great file. So for convenience's sake samples are sometimes drawn from clusters, such as towns, companies, households, schools, etc. Usually they are selected by simple or stratified random sampling methods. When the cluster is geographically defined, we speak of area sampling. The method of first selecting a number of areas, next a number of households within these areas and finally the subjects within the households is called multi-stage sampling.

non-probability sampling

accidental sampling

The following non-probability methods of sampling can be distinguished:
The most widely used method of non-probability sampling is accidental sampling. One simply reaches out and takes the cases that fall to hand, continuing the process untill the sample reaches a designed size, without paying attention to possible distortions in the distribution of essential variables due to the way of selection.

chunk sample

When the selection is not totally haphazard but a group is taken which allows some prediction of the distortion in the distribution of the variables aimed at, we use the term chunk sample. For example a class of students, members of a club, employees of a firm, etc.

purposive sampling

— expert choice

Purposive sampling is selecting subjects on basis of some criteria which are relevant for the variables in the study. When these criteria are vague and complex, this selection often takes place by expert choice. For example in a study of drug addiction a police-officer can select high addiction districts in the town or he can bring the investigator into contact with some addicts who on their turn can supply more subjects (snowball sampling). Expert choice is also used when the composition of two contrasting samples is necessary: for example healthy and unhealthy employees by the factory-doctor.

— quota sampling

An other form of non-probability purposive sampling is quota sampling, also called stratified non-random sampling and interviewer selected sampling. Here the interviewer chooses the subjects himself on the basis of some instructions. For example, he is instructed to find subjects of certain age, sex and educational level.

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non-response; N

N

The number of subjects actually participating in the investigation is symbolized by 'N'. Usually the number is lower than the numbers that were selected for the study. This may be due to several reasons, e.g.:
Unattainable: contact could not be established with the subject for reasons of illness, wrong address, change of address, etc.
Refusal: subject refuses to participate.
Incomplete: the subject participates, but due to misunderstanding or incomplete responses his data have to be omitted.

non-response

The subjects who failed to participate in the study for these or other reasons are known as the non-response category. Their number is usually expressed as a percentage of the original sample.

A high non-response can interfere with the representativeness of the sample. When there is a high non-response due to illness among elderly people, the sample is no longer representative for age and all conclusions may be severely distorted. To cope with this problem a mini-study of the non-response group is sometimes made in order to establish the degree of deviance on a limited amount of variables; usually some variables which are easily measured such as sex, age and income. The non-response group

unaffected by ...

is said to be unaffected by sex if this study does not reveal significant differences in the distribution of sex. If this is not the case and it turns out for example that the percentage of females in the non-response group is significantly higher/lower than in the response

overrepresentation/ underrepresentation of ...

group, females are said to be overrepresented/ underrepresented in the non-response group.

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author's happiness label

Under the heading of 'label' in the notation sheet we note the name the original investigator gave to what we call 'happiness'. As mentioned earlier, different labels are often used for similar phenomena. Most investigators use labels like 'morale', 'general satisfaction', 'elation', etc. Sometimes, however, different names are used, indicating quite an other interpretation of the observations: for example: 'psychological health' and 'adjustment'. Differences in labeling sometimes go together with differences in conceptualization, but not always.

dependent variable

The concept of happiness can be used in different ways in the inquiry process. First of all it can be used as a dependent variable. The investigator then looks upon happiness as a resultant of a process and tries to identify the factors which make people happy. When the investigation is exclusively devoted to this purpose happiness is the only dependent variable. If the investigator is at the same time interested in the determinants of other factors as well, we say that happiness is one of the dependent variables in the investigation. A reversed position in the inquiry process is also possible. Happiness can be seen as a determinant of another phenomenon. For example the feeling of happiness could foster physical health, improve interpersonal contact or give rise to a tolerant attitude. In such-like cases happiness is used as

independent variable

an independent variable. Studies of this type are rare.

indicator

More often observations which we consider a valid indicator for our concept of happiness are used as indicator for quite an other matter. For example: happiness of children can be used as an indicator of 'parental adequacy' in a study of child rearing patterns and social class. Similarly happiness questions have been used to assess 'mental health'.

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happiness-indicator (column 4 in Part III)

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instrument

With the term indicator we aim at the empirical measures or the instrument' used; the concrete and specific definition of the

variables in terms of the operations by which observations are to be categorized. A classification of happiness indicators was presented in exhibit 1 on page 13.

When happiness is assessed in an indirect way by behavioral observation or by projective techniques, these operations are framed in the instructions for subsequent content analysis. We call this a scheme of analysis.

scheme of analysis

When happiness is measured by direct questioning the term 'indicator' refers to the question used and their answer-categories. Responses to closed questions are usually recorded on a rating scale. For example:

question
rating scale

'Do you feel:

very happy $\underset{1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6}{\text{\_\_\_\_\_}}$ unhappy '

When such a rating scale has six answer categories it is said to be a six-point scale. These items can be points on a linear scale or seperate multiple choice statements, such as 'very happy', 'happy', 'not too happy', or 'unhappy'. When graphic scales are used the subject indicates his rating by simply placing a check at the appropriate point on a line that runs from one extreme of the attribute in question to the other.

- .... point scale

- graphic scale

Often several questions are used to assess one variable and the scores for these questions are added up. In that case we speak of an index. For example, popularity can be measured by perceived esteem of one's, boss, one's friend and one's spouse. When the answers on three of these questions are summed up into one score we speak of a three item index. When the investigator assigns equal weight to the items, we speak of a simple index, if not, of a weighted index.

Sometimes series of questions are first tested for 'scalability'. A cross-check is made as to whether other people also consider the question to be indicators of the same variable. Moreover one often tries to select questions in such a way that the answers offer a more accurate picture of the continuum on which the variable may vary. This is commonly called a 'scale'. The word scale here has an other meaning than that of the 'rating scale' mentioned above. We therefore stick to the term 'index'.

Several types of indices can be contructed: among other ones: cumulative indices, in which the items are supposed to represent an increasing monotonic function of the variable. Variants of this type index are e.g. the so-called Thurstone-scales, Likert-scales and Guttman-scales.

index

-.... item index

-simple index
-weighted index

reliability

The term reliability refers to the consistency of data yielded by an indicator irrespective of what it may measure. This can be assessed in the following ways:

stability

An indicator is stable or constant when its measures do not change over time. This can be assessed by repeating the same questions at different times in the course of the interview (repeat reliability), or by retesting some weeks or years later in a special interview and than assessing the association between the responses in both instances. We then speak of across-time stability or retest-reliability.

- repeat reliability

- retest reliability

equivalence

When an indicator contains more than one item it can be tested for equivalence, consistency or congruence. This refers to the degree in which these items measure the same phenomenon. Equivalence is assessed by the association between items. High association is considered as an indication that they cover the same factor. Current measures of equivalence are alpha (Cronbach, 1951) and omega (Heise & Bornstedt, 1970), both ranging from zero to one.

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validity

An indicator is considered valid if it measures what it is supposed to measure: if it is free of bias, systematic or non-sampling errors. This is one of the greatest problems in social research and in happiness research in particular. Does a set of questions on happiness tap the evaluation of life of the subject or does it reflect a value-orientation, a defensive self-image, a social norm, etc.? The validity of an indicator can be assessed in two ways: by the logical consistency of its items and by its correspondence with other indicators of the same phenomenon or related phenomena.

internal validity

In the first case we speak of internal validity. This kind of validity is assessed by checking whether the questions or other observational devices we want to pose all represent the same meaning: its substantive validity. This can be done by carefully inspecting the matter (face-validity testing) or by an inter-subjective procedure of content-validity testing, often using judges. A final check on this substantive testing is the intercorrelation of test items when used on a larger group of subjects. We call this a testing for structural validity, or item-analysis. Here the same procedure is followed as with testing for equivalence, only the view-point is slightly different.

structural validity

external validity

A second method of validity testing is assessing correspondence with other indicators. We speak here of external validity, practical or empirical validity. Two variants can be discerned:

Firstly, estimates of validity can be made by assessing the association with other indicators of the same variable. For example, a happiness question can be validated on other happiness questions, facial expression, expert ratings, peer report, etc. We speak here of congruent validity.

congruent validity

Sometimes happiness indicators are validated on essentially other phenomena known to be related to happiness, such as mental health, social adjustment or social participation. We then speak of concurrent validity. This method is not very easy to apply in happiness research because the relations of these factors are neither complete nor constant.

concurrent validity

When congruent or concurrent validity is assessed by the association with later events, we speak of predictive validity. When phenomena of the past are taken as a point of reference, we speak of retrodictive validity.

— predictive validity
— retrodictive validity

(frequency) distribution

The frequency distribution of answers reflects the number of subjects scoring on the different answer categories. For example, the frequency distribution of a single happiness question in a national sample can be: 30% very happy, 50% moderately happy and 20% unhappy.

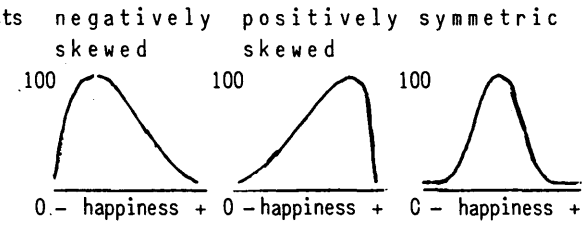
unimodal or bimodal

There are different types of frequency distributions: unimodal or multimodal. We use the term 'unimodal' when the distribution shows one peak: f.e. 10%, 20%, 40%, 30% and 'bimodal' when the distribution shows two peaks: f.e. 10%, 30%, 10%, 40%, 10%.
Unless specially mentioned all frequency distributions mentioned are unimodal.

symmetry

Unimodal frequency distributions may vary in symmetry, that is the division of cases on either side of the mode. See below.

- positively skewed
- negatively skewed



range

- possible range
- actual range

Frequency distributions may vary in range: the number of categories they cover. An investigator may distinguish ten different levels of happiness, but he may also do with splitting up between happy and unhappy subjects. The theoretical range does not necessarily coincide with the actual range; the subjects do not always use all answer categories the investigator offers them.

mean
modus
median

The center of a frequency distribution of happiness scores can be indicated in several ways. First by computing the mean or average which is the sum of happiness scores, divided by the number of subjects. A second indication is the modus: the category which yielded most scores. The third is the median: the point on the range which has as many observations on its left side as on its right side.

SD

Frequency distributions may differ in dispersion of scores. This dispersion is usually expressed in what is called the standard deviation (SD); the positive square root of the variance.

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association

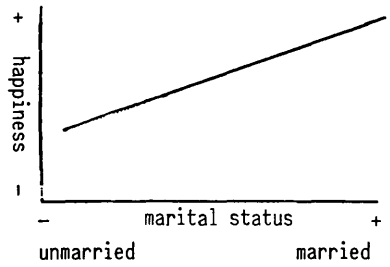
(columns 5 and 6 in Part III)

Two variables are said to be associated or correlated when changes in one variable are systematically accompanied by changes in the other. For example happiness is said to be associated with health when people who say thay feel happy report more often that they feel healthy than unhappy people do.

direction of association

Association has aspects of direction and strength. Happiness and health are said to be positively associated when happiness goes hand in hand with good health and negatively when it is accompanied by bad health. This direction is indicated by + and - signs in the column 'value of association' in the excerpts (column 6 in Part III). Some practical problems may arise in indicating the direction of the relation. When we say there is an association of G = +.50 between happiness and education, the direction is clear; the more education, the more happiness and vice verse. Difficulties arise, however, when a variable is labeled so that

the direction of the relation is less clear. For example, when an investigator reports an association of G = +.50 between happiness and marital status. Now it is not clear whether being married is positively associated with happiness or negatively. To interpret this information we must keep in mind that the association reported represents the following relation.



In the column of 'operationalisation' we write therefore 'unmarried vs married' which means that married status is associated with happiness.

value of association

Association reaches its highest possible value when all happy people are healthy and all unhappy people are unhealthy. Association is zero when as many people are healthy as unhappy people and negative when happy people turn out to be less healthy than unhappy people. Values of association are usually expressed by us in a number between one and zero.

measures of association

There are many ways of expressing the strength of associations. These measures of association use different assumptions and statistical techniques. It would lead us too far to discuss their pro's and contra's and their limitations. We may do with a review of basic assumptions, names, symbols and ranges in Appedix B.

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significance

(columns 7 and 8 in Part III)

The term significance refers to the likelihood that an observed empirical relationship results from sampling error. A relationship is said to be significant at the .05 level ($p < .05$) if the likelihood of its being only a function of sampling error is no greater than 5 percent. Assessing whether chances of sampling error are sufficiently small is called testing for significance. Such procedures make sense only when representativeness can be assumed.

$p < .01$

The character 'p' denotes usually the probability that in spite of the association found in the sample the actual association in the population is zero. For example when in a sample of the Dutch population we find a correlation of G = +.40 between health and happiness which is significant at the 99% level ($p < .01$) this means that there is a chance of less than 1% that in the Dutch population as a whole health and happiness are unrelated. Sometimes it is not the chance of a zero association which is computed but other points of reference are chosen. For example, when the association between health and happiness is +.30 for males and +.50 for females, it is possible to compute the likelihood that this difference is due to error. Unless stated otherwise significance calculations refer to the probability that there actually is no association at all in the population the sample was drawn from.

s
ns

Sometimes the investigator does not report 'p' values but merely claims to consider his results significant. In these cases we note 's'. If the investigator considers his results non-significant we note 'ns'. Usually $p > .05$ is considered non-significant.

correlates of happiness

(column 1 and 2 in Part III)

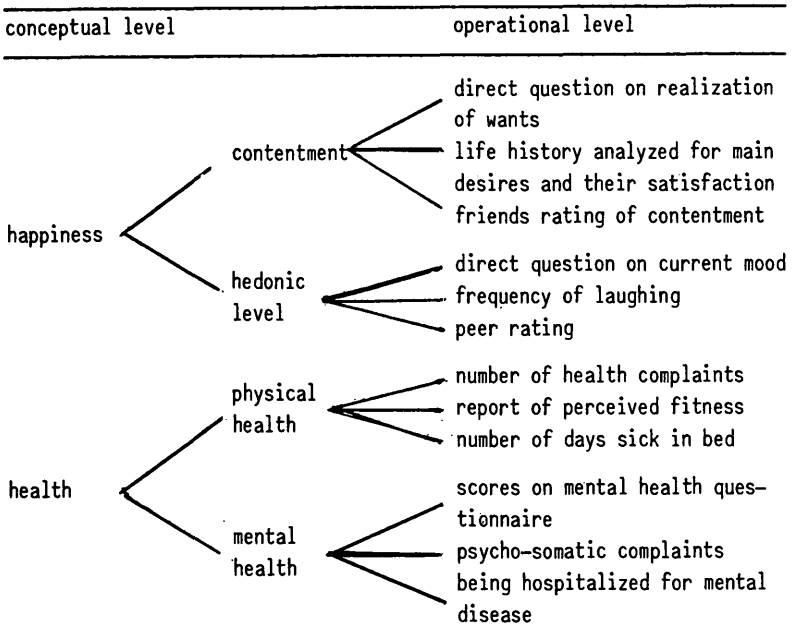
Correlates of happiness are phenomena found to be associated with happiness. For example, when people claiming that they tend to be very happy are found to be healthier than people who tell te be rather unhappy on an average, health is said to be a correlate of happiness.

conceptualization

Conceptualization is distinguishing an aspect of reality and attaching a name to it. Concepts are often highly theoretical and have no direct connection with the observable reality.

operationalisaztion

Operationalization is translating them into observable terms. Devising a measure, instrument, or indicator. Such translation often requires a further specification of dimensions in the original concept. See for example the operationalization of the concepts of health and happiness below.



This scheme does not cover all dimensions and operationalizations which could be devised for these two concepts. There are many more possibilities. This makes it clear that operationalization of the same concept can differ widely. So it is evident that when interpreting associations we should not rely too much upon the labels used, but focus on the operational definitions instead.

elaboration (column 3 in Part III)

If in a certain population happiness is found statistically related to for example education, these phenomena are not always equally linked in all parts of that population. Happiness may be related to education among young adults but not among the elderly, or may be more strongly related to educational level among males than among females. Inspection

specification

for such differences is called specification.

If in the example at hand happiness is indeed more strongly related to education among males than among the population at large, the association is said to hold stronger among males and in the reverse to be lower in this category. If there is no correlation at all in this part of the population, we note not among males.

stronger among ....
lower among ....
not among ....

Sometimes the direction of the association is different in a part of the population. For instance, it is observed that people who managed to earn a good income in spite of a low education, are particularly happy. We then write reversed among the highest income brackets.

reversed among ....

explanation

A statistical relationship between happiness and education does not necessarily mean that education fosters happiness or that happiness adds to the chance that one does well at school. The variables may in fact be unrelated because one or more intervening variables are involved. Good health and high intelligence could for instance be responsible for a spurious correlation because they both add to educational success and to a positive appreciation of life. It is also possible that education as such does not add to happiness but that it favors indirectly a positive appreciation: for example because it opens doors to good paying jobs. One same factor can in fact be both a spurious factor and a link in a causal chain between education and happiness. Good health may inflate the correlation as far as it works spuriously, but at the same time it can also be responsible for a reality link: happiness fostering health and thereby happiness.

Such effect can be demonstrated by specification procedures as mentioned above. They can also be checked by computing partial correlations, that is assessing the correlation that remains when effects of one or two more further variables are checked. Partial correlation coefficients are symbolized with 'r_{pc}', partial (or standardized) gammas with 'G' and partial taus with 't_s'. The results of such control procedures are noted as follows:

partial correlation

If the correlation between happiness and education appears to be mediated by income, we write that it disappears when controlled for income. If at least part of the common variance remains, we say that it appears lower when controlled for that matter.

disappears when controlled for ....
lower when controlled for....

Controls can also demonstrate an actually reversed relationship. Happiness could for instance be positively related to education, while education is in fact detrimental to it. That could be so, when negative effects were masked by the fact that highly educated people are typically born in the higher social ranks and for that reason enjoy greater self-respect and a better financiel start. In that case we note that the correlation is reversed when controlled for social milieu of origin. Likewise it is possible that a zero correlation masks a reality link. A positive effect of education on happiness could for instance be disguised by the fact that members of minority groups

reversed when controlled for...

be diguised by the fact that members of minority groups are overrepresented in the higher educational levels, education being the only chance for mobility. These people may in fact take more enjoyment in life because of their educational achievement, but discrimination may still prevent their happiness to be above average. If such an effect is demonstrated by the existence of positive correlations in both the minority and and the majority or when a positive partial correlation appears we say that a correlation did appear when controlled for minority status.

... appears when controlled

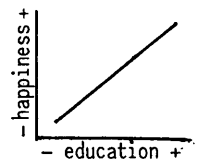
Quite often such procedures reveal that suspicions about spuriousness of hypotheses about mediating variables are false. We then note that the correlation appeared unaffected by the control variable(s).

unaffected by ...

shape of the relation

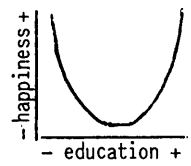
Measures of association inform us about the strength of association. They do not provide information about the pattern of association, but more or less suggest a linear pattern. However, associations may follow non-linear patterns as well. For example a positive correlation between happiness and education may cover a great variety of patterns, some of which are shown below. Uncovering such patterns is called elaboration for shape. The following technical terms are used in that context:

linear

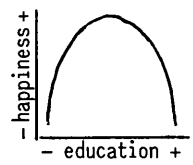


lineair relation: the more education, the more happiness

U-shaped

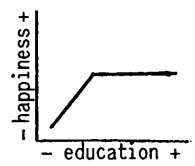


U-shaped curve: mediumly educated people being least happy

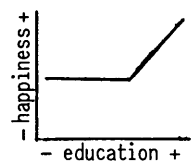


U-shaped curve: mediumly educated people being most happy

L-shaped

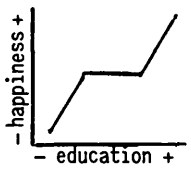


L-shaped curve: the relationship holds in the lower educational ranks only

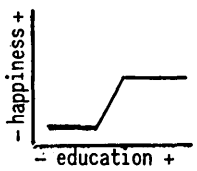


L-shaped curve: the relationship holds in the higher educational ranks only

Z-shaped curve



Z-shaped curve: the relationship does not hold in the middle educational ranks



Z-shaped curve: the relationship holds in the middle educational ranks

Usually relationships are supposed to be linear. Relatively few investigators assess whether this is in fact the case. We report about the shape of the relationship only when there is evidence that it is not linear.

noteworthy differences

These elaboration procedures involve often the comparison of association values: comparion of associations found in subpopulations (mutually and with the association found in the general population) or between controlled and uncontrolled associations. It is often not clear whether the differences that appear are really worthwhile. Tests of significance are seldom performed on such differences. A better criterion failing, we applied the rule that differences greater than .10 are worth mentioning whatever the measure of association, if only it ranges from one to zero. For studies involving 500 subjects or more, this threshold was lowered to .05. When differences smaller than that appeared, we noted 'unaffected by'. In the few cases that differences were checked for significance, the results of that check are mentioned.