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TIME ORIENTATION: A REVIEW¹

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The very extensive literature on time perspective shows that it is necessary to divide the very broad concept of time perspective into a number of aspects, such as length of time perspective, affective attitude towards time zones, and time orientation. It follows that research methods and results should be compared for each aspect separately. This article tries to define the notion of time orientation, and to review the methods and results of research which was performed in that field.

Already in the first important publications concerning the notion of time perspective, a distinction was made between several aspects of this general concept. According to Frank (1939) an individual may develop a variety of time perspectives, each applicable to a different aspect of living, so that he may view economic events in one dimension, political in another, social in another, sexual in another, and so on. Lewin (1942) made a distinction between the range (or length) and realism of time perspective. Wallace and Rabin (1960) distinguished between the concepts of extension, coherence (orderly arrangement of events in a logical sequence), and direction or temporal orientation (whether primarily past, present, or future).

Later on, empirical research tried to verify these distinctions. Kastenbaum (1961) performed a factor analysis on the scores of six methods measuring various aspects of time perspective. This yielded one major factor on which all time perspective measures (except one) had moderate-to-substantial loadings. Platt *et al.* (1971) used six measures of time perspective and a number of personality scales. Correlation coefficients showed that the various measures of time perspective had little in common. A factor analysis yielded no general factor of time perspective. Platt *et al.* stated that the general factor obtained by Kastenbaum (1961) was extracted by the centroid method, while the principal components method was used in their study. Reanalysis of their data by the centroid method did not, however, result in a general factor of temporal perspective. The authors concluded (p. 108):

Researchers who have attempted to study time perspective have apparently not all investigated the same thing, since no two measures are necessarily comparable... no unitary dimension could be shown at present...

¹ This review was made while the author was working as a research associate of the Fonds voor Collectief Fundamenteel Onderzoek at the Research Center for Motivation and Time Perspective under the direction of prof. Dr. J. Nuttin.

Winnubst (1975) gathered 210 items from a great number of scales, measuring various aspects of time perspective. Two successive factor analyses yielded 11 factors, of which none could be called a general factor of temporal perspective. It follows that comparing the results of researches studying different aspects of time perspective, is no longer justified. Research must concentrate on one aspect a time. One such aspect is: 'orientation towards time zones', mostly called: 'time orientation'. This aspect was already distinguished by Wallace and Rabin (1960), and Fraisse (1967). Wallace and Rabin called a person e.g. future oriented when he was *primarily* oriented (or directed) to the future. In this sense, time orientation is restricted to the notion of *predominant* time orientation. Fraisse also used the term 'temporal orientation' to denote the relative role (or importance) of the past, present, and future. However, he classified also other variables such as semantic judgements of times zones under the heading of temporal orientation. Empirical evidence for the existence of the aspect 'time orientation' came from factor analyses performed by Platt *et al.* (1971) and Winnubst (1975) that yielded a factor that was interpretable as a factor of time orientation. It is my intention to define more explicitly the concept of time orientation, and to review the methods and results of research which was performed in that field.

In the related literature, a satisfactory definition of the concept of time orientation cannot be found. Therefore, I will try to explicit and integrate the implicit and incomplete definitions stemming from various researches. In general, orientation refers to the degree of involvement in something. So, a person is said to be very future oriented, if he is strongly involved in the future. This involvement can be on the thought level or on the action level. For practical reasons, research on time orientation is always performed on the thought level. It is then implicitly assumed that there exists a simple link between the thought and the action level, between thinking and doing. When someone thinks a lot e.g. about the future, *ipso facto* he is assumed to do a lot for the future also. On the thought level as well, two approaches can be distinguished (Nuttin *et al.*, in press). The first approach is based upon the subjects' free expressions (stories, drawings, and so on). This way, phantasy might play an important role. It also means that it is not at all sure whether the events and objects that appear in the free expressions of the individual have a personal meaning for that person. In other words, does that person attaches a certain degree of importance to these events or objects in his everyday life? This remains unknown. It is possible that his free expressions are pure products of phantasy without any real importance to himself. The second approach is based upon the events (in the past or the future) with which a person is occupied during a certain period of time, and to which he attaches a certain importance. By definition, these events and objects have a strong personal meaning. A similar distinction between approaches (but only with respect to future time perspective) was already made by Kastenbaum (1963) who called the result of

the first approach 'cognitive futurity' and that of the second 'personal futurity'. I will use this distinction to classify research methods. In case of some methods, of course, there will be some doubt about how they should be classified. This results from the fact that the two approaches are two extremes of a continuum, rather than two discrete categories. As to the terminology, I will call the second approach 'personal' (cfr. Kastenbaum 1963), and the first 'impersonal' (contrasted with 'personal'). Kastenbaum's 'cognitive futurity' seemed a less appropriate term, since *both* approaches are of a cognitive kind and deal with mental contents. It should be emphasized that the terms 'impersonal' and 'personal' in this context only refer to methods that are classified as respectively using the first and second approach. The same remark goes for a second classification criterion (direct-indirect) that will be mentioned later on.

So far, only future orientation was mentioned. Of course, the orientations towards the past and present can also be investigated. When these orientations are considered all at once, a problem arises: are these orientations related to one another, or not? In other words, if one gets more involved in the past, does this happen at the expense of the present and future? Methods using ipsative scores assume such a relationship. If there are e.g. ten forced choices between three alternatives (past, present, or future orientation), the more one chooses e.g. 'past' responses, the less one can choose 'present' and 'future' responses. This results in artifactual negative correlations between these ipsative scores (Ruiz *et al.* 1967). When no such dependence exists, it is possible that two persons are equally involved in e.g. the past and present, but differ with respect to their involvement in the future. This issue was investigated by Cottle (1967), who examined the intercorrelations between past, present, and future orientation. The significant negative intercorrelations for the male subjects indicated that men systematically manipulated orientation towards each time zone vis a vis the other two, in a way that women did not: women seemed to treat each temporal zone independently (for women there were no significant intercorrelations between past, present, and future orientation).

Research on time orientation can make two kinds of comparisons. The first kind consists of within-group comparisons. The orientation towards the past can be compared with the orientation towards the present, the orientation towards the past can be compared with the orientation to the future, and so on. If more than one comparison is made, it is possible to establish a rank order of the degree of involvement in various time zones. A person who is e.g. the most involved in the present, is said to be predominantly present oriented. The second kind of comparisons consists of between-group comparisons. One can compare groups as to their degree of involvement in all time zones, in only a few, or even in only one. E.g., are delinquents less future oriented than normals? Also, it is possible to compare groups as to their relative involvement in e.g. present and future.

Some additional problems emerge when one has to decide on the number and range of time zones. Some authors used five time zones, others only two. Mostly, three time zones were used: past, present, and future. As to the range of time zones, there are two possibilities. One can let the subject decide for himself what he understands by each time zone, e.g. the present. However, if the experimenter asks which range the present has, a wide variety of answers is given, ranging from a few seconds to a few years (Cottle 1969, Geirnaert 1976). Although letting the subjects decide for themselves what they mean by 'the present', reflects a psychological reality, it is less ambiguous to let the experimenter define what has to be understood by the present. Otherwise, when one would say e.g. that adults are more present oriented than children, it would be possible that adults are involved in things lying further ahead than things children are involved in, because it is possible that the range of the psychological present is more extended for adults than for children. It can be interesting to study the range of the present by itself, but for the purpose of studying time orientation, it seems more advisable, for the sake of comparability, to maintain steady borderlines of the present. Finally, one problem still remains: which are the borders (of the time zones) that must be used by all subjects? Some researchers used two days ago and ahead as borders for the present, others used distances of several years as borders. Again for the sake of comparability, the same borders should be used in future research.

It is important to notice that in this review, time orientation is always considered as an aspect of the more general concept of time perspective, in contrast with some researchers who used the term 'time orientation' as a synonym for 'time perspective'.

METHODS FOR MEASURING TIME ORIENTATION

The exceedingly great number of different methods used in research on time orientation can be regarded as the greatest weakness of that research. Moreover, reliability or validity studies were in general not performed. Occasional exceptions will be mentioned. The methods can be classified in four categories with the help of two dichotomous criteria: personal versus impersonal (discussed in the introduction), and direct versus indirect. A method is called direct if the subject is aware of what is being studied, and indirect if not so.

INDIRECT IMPERSONAL METHODS

The best known and most commonly used method of this kind is the Thematic Apperception Technique (TAT). Fink (1957) was the first to use the TAT to measure time orientation. Five TAT-cards were presented. Subjects were simply asked to tell a story about the pictures. The stories were examined for temporal references. Percentages of past,

present, and future references were calculated. The exact criteria for scoring are, however, not mentioned in the article. Goldrich (1967), Dilling and Rabin (1967), Friel and de Aboitz (1968), Roberts and Greene (1971), and Kendall and Sibley (1972) also used the TAT. However, the results of these studies are hardly comparable, since they differ considerably as to selecting cards, instructing subjects, and analyzing responses.

The Incomplete Thoughts Test (ITT) asks subjects to complete 24 items of the incomplete sentence type (e.g.: "The people, thoroughly disgusted..."). This can only be done by adding some verb form. The sum of the frequencies of present and future tense usage is employed as an index of future orientation. The ITT was used by Krauss and Ruiz (1967), Ruiz *et al.* (1967), Ruiz and Krauss (1968), and, with a slight modification, by Greaves (1971).

The Story Completion Technique (SCT) presents subjects with a number of story roots which they are asked to complete by telling a story. Such a story root is e.g.: "Johnny was thinking about...". The story content is then assessed by the subject as to the presence of past and future conceptualizations (Kastenbaum 1965, Ruiz *et al.* 1967), or by the experimenter as to whether it deals mainly with the past or the future (Meade 1971, 1972).

The free fantasy procedure of Rychlak (1972) lets the subject face a blank wall in a quiet room with reduced illumination. The subject is simply asked to say whatever comes to mind. His statements are scored by the experimenter as referring to the past, present, or future. Le Blanc (1969) used a method very similar to the TAT: the Four Pictures Text. Five judges rated the subjects' stories on a seven-point scale for time orientation, ranging from one (far past) to seven (distant future).

Some studies presented interjudge reliabilities, which in general were sufficiently high. Rychlak (1972) claimed satisfactory test-retest reliabilities for his measures of past and future orientation (coefficients ranged from .68 to .78). His measure of present orientation was not reliable.

DIRECT PERSONAL METHODS

Eson (1951) instructed subjects to list 25 topics 'thought or discussed within the preceding two week period', and to indicate whether each topic related to subject's past, present, or future, at the moment the topic was thought or discussed. The frequencies of past, present, and future references served as indices of orientation towards the past, present, and future. With some occasional adaptations, this method was also used by Fink (1957), Teahan (1958), Eson and Greenfield (1962), Ruiz *et al.* (1967), Klineberg (1967, 1968), Landau (1976), and Geirnaert (1976).

Cottle (1968) developed the Experiential Inventory. Subjects were asked to list the ten most important experiences of their lives, and

to place these experiences in the distant past, near past, present, near future, or distant future. The number of experiences in each time zone served as an indication of the orientation towards that time zone. Cottle (1969, 1971) and Cottle *et al.* (1968, 1969) also used this method.

Kastenbaum (1961) asked subjects to predict as many events as they could that were likely to occur in their personal future. He also asked the question: "Who will you be?". The number of different responses given to questions one and two, were called respectively density score one and density score two. In my opinion, these density scores can be regarded as measures of future orientation, because they fit into the definition of time orientation as outlined in the introduction. Similar questions and procedures were used by Klineberg (1967), Platt and Taylor (1967), Platt and Eisenman (1968), Platt *et al.* (1969, 1971), Black and Gregson (1973), and Henik and Domino (1975). The methods used by Matulef *et al.* (1964), Rizzo (1967), and Heckel and Rajagopal (1975), although quite different, are based on the same principle: the number of different responses spontaneously associated with a time zone reflects the orientation towards that time zone.

The Time Reference Inventory (TRI) was developed by Roos and Albers (1965). Subjects had to choose one of the possibilities when confronted with a number of statements such as: "My period of greatest activity is the: past, present, future". The frequencies of past, present, and future responses were supposed to reflect the orientation towards these time zones. For the study of time orientation, only the results of the total inventory, or of the part with affectively neutral items, are suited. The other results are supposed to measure the affective attitude towards time zones. The TRI was also used by Ruiz *et al.* (1967), Megargee *et al.* (1970), Foulks and Webb (1970), Black and Gregson (1973), and King and Manaster (1975).

Kluckhohn and Strodtbeck (1961) developed a Value Orientation Scale, including a component of temporal orientation. This scale was especially designed for cross-cultural research. Subjects had to indicate which of three ways of doing things they found best, and which worst. These three ways were respectively characterized by a predominant past, present, and future orientation.

Cottle and Pleck (1969) developed the Lines Test. Subjects were asked to think of a printed line as being time, and to put marks showing their own birth and death, and the boundaries of the present. The lengths of the lines representing the past, present, and future, were supposed to reflect the orientations towards these time zones. The Lines Test was also used by Cottle (1971), Cottle and Howard (1972), Shannon (1975), and Geirnaert (1976).

Braley and Freed (1971) developed a questionnaire to measure time orientation containing items such as: "Making plans for the future is a waste of time". Ten raters scored each item of an original list of seventy on a five-point scale from very future oriented to very past oriented. Twenty-five were selected to obtain a quasinormal distribution

from future to past orientation. Subjects had to indicate how much each statement applied to them.

Gjesme (1975) developed a six-item questionnaire to measure future orientation, consisting of items such as: "I have been thinking a lot about what I am going to do in the future". The correlation between item scores and total test score varied from .19 to .40. The reliability in terms of the alpha coefficient was .64. Only a very simple kind of construct validity was carried out. Subjects were asked to judge how near they perceived an event which was to occur one year in the future. The results showed that subjects high in future orientation judged the future events as significantly nearer than those low in future orientation.

Winnubst (1975) performed two successive factor analyses on 210 items from various scales measuring time perspective. One of the factors extracted was interpreted as a factor of time orientation. An item loading high on that factor is e.g.: "I like to plan activities much in advance".

DIRECT IMPERSONAL METHODS

Cottle (1967) developed the Circles Test. Subjects were asked to think of the past, present, and future in the shape of circles, and to draw them. The size of the circles was supposed to be a reflection of the orientation towards the time zone represented by each circle. The Circles Test was also used by Cottle *et al.* (1969), Cottle (1971), and Koenig (1972).

The Future Orientation Scale (Zurcher *et al.* 1967) consists of items such as: "It is very important to save money for a rainy day". Product-moment correlations of individual items with total score ranged from .40 to .62. The questionnaire of Shybut (1968) consists of five forced-choice items, such as: "Live in the present, the future will take care of itself *versus* the future must be planned and prepared for". The last choice is scored as being indicative of future orientation. One of the factors resulting from a factor analysis of the items of the Time Attitude Inventory (Cottle 1971), was called: egocentric present orientation. E.g. the item "To be a healthy and happy person one has to learn not to be concerned about the future" loaded .54 on this factor.

Dies and Hess (1970) used a nine-points time-line ranging from childhood experiences, through present or immediate experiences, to future events. On this line, subjects had to score a group, to which they belonged, as focusing upon current or noncontemporary events. Scoring of the same group was also done by two raters, with substantial agreement between them (Pearson-correlation of .82).

INDIRECT PERSONAL METHODS

Krauss *et al.* (1967), Schreiner (1970), and Cameron (1972) used interview methods, in which the subject was simply asked to tell about

himself, or what he was thinking about. Krauss *et al.* scored frequencies of use of past, present, future, and present plus future tenses, as being indicative of respectively past, present, future, and future orientation. Schreiner and two other raters scored interview data as to future orientation. Intercorrelations between ratings ranged from .80 to .87. The interview data of Cameron were scored for predominant orientation towards the past, present, or future, by seven raters. In 98% of cases, agreement was obtained. Lester (1973) employed the tenses of the verbs used in autobiographical material (suicide notes) as measures of time orientation.

The Motivational Induction Method (MIM) was developed by Nuttin (1964). While the main purpose of this method was to investigate motivational concerns and length of future time perspective, the material obtained with it can also be used to investigate the degree of orientation towards the present. The MIM consists of incomplete sentences with a personal dynamic meaning, such as: "I plan..." or: "I wish...". The instructions stress the importance of spontaneous and personal answers. The experimenter scores the answers as to their temporal location, relying on the fact that most of the motivational concerns can only be realized in some broad, socially determined, temporal period. Events occurring later than two years from now are considered future events. Events occurring between now and two years from now, are considered to belong to the immediate future, which also could be called the present. The ratio of future on present wishes and plans gives an index of future relative to present orientation. The number of motivational concerns situated in the present gives an index of the orientation towards the present. Agreement of scoring between two unexperienced raters was 81% (Van Calster 1971), and between two trained raters 87% (Noterdaeme 1965). The agreement between the subject's and the experimenter's coding of a wish as situated in the present was 97% (Fourneau 1967). The MIM has been used by Noterdaeme (1965), Moens (1965), Moors (1965), Goethals (1967), Hoornaert (1971), Van Calster (1971), Grommen (1973), and Cossey (1975).

Finally, a general remark must be made with respect to the methods which were used to measure time orientation. From a number of methods, data are obtained which are not independent of each other. Such data cannot be independently tested for statistical significance. Nevertheless, this was done in some studies. Listing these studies was impossible, however, because very often data about the dependence or independence of the material were not presented. In the future, researchers should bear in mind that certain methods necessarily result in dependent data, and that appropriate statistical tests must be applied.

DEVELOPMENTAL RESEARCH

Between the ages of 10 and 20, Cottle *et al.* (1969) and Shannon (1975) found an increasing future orientation, while Klineberg (1967) and Cottle and Howard (1972) found a decreasing future orientation. According to Fink (1957) and Cameron (1972), persons between 60 and 70 become less future oriented. According to Kastenbaum (1963) and Schreiner (1970) future orientation does not change between the ages of 60 and 70. Le Blanc (1969) found no significant differences in future orientation between age groups ranging from 10 to 90 years. Between the ages of 10 and 20, Cottle *et al.* (1969) and Shannon (1975) found a decreasing past orientation, while Cottle and Pleck (1969) found an increasing past orientation. Between the ages of 10 and 25, most of the time a decreasing present orientation was found (Noterdaeme 1965, Cottle and Pleck 1969, Cossey 1975), except by Cottle and Howard (1972) who found an increasing present orientation. In old age, Cameron found an increasing present orientation. As to the relative importance of the time zones, Eson and Greenfeld (1962) and Cameron (1972) found that all age groups, from teenagers to old people, were oriented the most to the present (defined by Eson and Greenfeld as the next two days). According to Grommen (1973), between the ages of 18 and 80, persons always remain more oriented to the future than to the present. Grommen classified events occurring within the next two years as belonging to the immediate future, which also could be called the present. This future relative to present orientation was highest between the ages of 46 and 55, especially in the highest socio-economical classes.

It may be concluded that research findings on the development of time orientation are very ambiguous. Moreover, age in itself seems less important than other factors, such as health (Schreiner 1970), socio-economical status (Grommen 1973), and being a military man or a civilian (Noterdaeme 1965).

RESEARCH ON MENTAL DISORDERS

Delinquency: Goethals (1967) found that inmates were less present oriented than normal subjects, while Cossey (1975) found no significant difference. In these studies, the effect of the variable 'institutionalization' was not controlled. This was done by Black and Gregson (1973) and Landau (1976) by comparing inmates with institutionalized normal subjects (soldiers, physically ill hospitalized patients). Black and Gregson found that normals were more future oriented than recidivist delinquents. There was no significant difference between normals and first sentence prisoners as to future orientation. Neither between institutionalized delinquents and soldiers, nor between delinquents on probation and students, any significant differences in time

orientation were found by Landau (1976). Just like normals, delinquents were more oriented to the future than to the present or past.

Psychiatric patients : Most studies revealed a greater future orientation in groups of normals than in groups of psychiatric patients (Dilling and Rabin 1967, Shybut 1968, Braley and Freed 1971, Geirnaert 1976). The factor 'institutionalization' was controlled, except by Shybut. Klineberg (1967), Hoornaert (1971), and Geirnaert (1976) found no significant differences in time orientation between normal and disturbed subjects. Comparisons of various kinds of disturbances were also made. Friel and de Aboitz (1968) found that psychopathic prisoners were less past and more present oriented than non-psychopathic prisoners. Severely disturbed patients did not differ from moderately disturbed patients with respect to future orientation (Shybut 1968). Foulks and Webb (1970) compared depressives, chronic schizophrenics, acute schizophrenics, and alcoholics. Depressives were less future oriented than any other group, and more past oriented than any other group except the acute schizophrenics.

Alcoholics : Roos and Albers (1965) found that alcoholics were less present oriented than normals, while Foulks and Webb (1970) found the opposite.

Suicide attempters : Greaves (1971) found that persons who had attempted suicide were less future oriented than normal but physically ill subjects. Lester (1973) found no differences with respect to time orientation in suicide notes of persons who had committed suicide compared to simulated suicide notes written on request by normal subjects.

Marijuana users : Students who admitted to use marijuana sometimes or often, were more past oriented than students who declared they never had used it (King and Manaster 1975).

RESEARCH ON INDIVIDUAL DIFFERENCES

Sex : Cottle *et al.* (1968), Cottle and Howard (1972), and Heckel and Rajagopal (1975) found that male subjects were more future oriented than female subjects, while Platt *et al.* (1969) found the opposite. Cottle *et al.* (1969) found that male subjects were less present and more past oriented than female subjects. Mostly, however, no sex differences in time orientation were found (Cottle 1967, 1968; Cottle *et al.* 1969; Roos and Albers 1965; Kastenbaum 1965; Schreiner 1970; Cameron 1972; Rychlak 1972; King and Manaster 1975).

Achievement : High achievers were found to be more future oriented than low achievers (Teahan 1958, Goldrich 1967, Klineberg 1967). Klineberg (1967) also found that high achievers were more present and less past oriented than low achievers. Cottle (1969) found no relationship between time orientation and achievement values.

IQ: High IQ subjects were found to be more past and present, and less future oriented, than low IQ subjects (Zurcher *et al.* 1967, Cottle 1968). Kastenbaum (1965) found that high IQ subjects were more past oriented, but no less future oriented, than low IQ subjects. Teahan (1958), Kastenbaum (1961), Krauss and Ruiz (1967), and Cottle (1969) found no relationship between IQ and time orientation.

Anxiety: A positive correlation between future orientation and anxiety was found by Krauss *et al.* (1967), a zero correlation by Cottle (1969), and a negative one by Krauss and Ruiz (1967) and Rychlak (1972). Krauss and Ruiz (1968) found a curvilinear relationship: low and high anxious subjects were less future oriented than moderately anxious subjects. Van Calster (1971) found no differences in present orientation between high, moderately, and low anxious subjects.

Dogmatism: Rokeach and Bonier (1960) and Zurcher *et al.* (1967) found that high dogmatic subjects were more future oriented than low dogmatic subjects. Cottle (1971) found the opposite. According to Rokeach and Bonier (1960) and Cottle (1971), high dogmatic subjects are less present oriented than low dogmatic subjects. Cottle (1971) also found that high dogmatic subjects were more past oriented than low dogmatic subjects, while Rokeach and Bonier (1960) found no difference in past orientation between high and low dogmatic subjects.

Other individual differences: Shybut (1968) found that subjects high in internal control were more future oriented than subjects low in internal control, while Platt and Eisenman (1968) found no significant difference in future orientation between these two groups. Goldrich (1967) found that subjects displaying a median degree of avowed recall were more future oriented than subjects displaying a high or low degree of avowed recall. Platt and Taylor (1967) found that freshmen who said never to be homesick were more future oriented than subjects who said they actually were homesick. Koenig (1972) found no relationship between cigarette smoking and time orientation. However, subjects who were predominantly future oriented and related time zones to one another, were more classified as smokers, than subjects who were not predominantly future oriented and did not relate time zones. Kastenbaum (1961) investigated the relationship of future orientation with 'need for freedom' and 'personal rigidity'. Platt *et al.* (1971) investigated the relationship of future orientation with 'conventional mores', 'hostility', 'fear of failure', 'social acquiescence', 'authoritarianism', 'moral judgements', 'creativity', 'extraversion', and 'response acquiescence'. Only a few significant correlations were found. For more details, the reader is referred to the articles of these authors.

CROSS-CULTURAL RESEARCH

Kluckhohn and Strodtbeck (1961) compared the time orientation of

five communities living in the same geographic region of the southwest U.S.A. On the past-present dimension, Mormons, Texans, and Spanish Americans showed the same pattern: they were more oriented to the present than to the past. These three groups did differ significantly from the Zuni and Navaho, who also showed a same pattern: they were equally oriented to the past as to the present. On the past-future dimension, all groups except the Mormons and Texans, differed significantly from each other. From more past than future oriented to more future than past oriented, the groups could be placed in the following order: Zuni, Navaho, Spanish Americans, and finally, Mormons and Texans *ex aequo*. On the present-future dimension, neither Zuni and Navaho, nor Mormons and Texans did significantly differ from each other. Spanish Americans were more present oriented than all other groups. Zuni and Navaho were more present oriented than Texans and Mormons.

Roberts and Greene (1971) found that Anglo Americans told significantly less religious stories beginning in the past than Spanish Americans and Indians (native Americans). The Indians told less social stories beginning in the past than the two other groups. Shannon (1975) found that Anglo Americans were more future and less present oriented than Spanish Americans and Indians (native Americans). Meade (1971) and Heckel and Rajagopal (1975) found that Indians (Hindus) were less future and more past oriented than Anglo Americans. Subsequent research (Meade 1972) revealed that Anglo Americans were more future oriented than the Brahmin, Vasiya, Sudra, and Muslim communities of India, but did not differ in future orientation from the Kshatriya, Parsee, and Sikh communities.

RESEARCH ON SOCIAL FACTORS

Institutionalization: Institutionalized senior citizens, soldiers, physically ill patients, and delinquents were compared with their non-institutionalized counterparts. Fink (1957), and in some cases also Landau (1976), found that institutionalized subjects were less future oriented than non-institutionalized subjects. According to Fink (1957), institutionalized subjects are more past oriented than non-institutionalized subjects, while Landau (1976) found no difference in past orientation between these two groups. Noterdaeme (1965) and Landau (1976) found that institutionalized subjects were more present oriented than non-institutionalized subjects. This finding was not replicated by Hoornaert (1971). Even institutionalized subjects were more oriented to the future than to the past or present (Megargee *et al.* 1970, Landau 1976). Soldiers and prisoners who still had to serve a long time were compared with soldiers and prisoners close to release. Mostly, no differences in time orientation were found (Goethals 1967, Megargee *et al.* 1970, Landau 1976), except by Landau for one of his groups: as prisoners approached release, present orientation decreased while future orientation increased.

Socio-economical status: Kendall and Sibley (1970) found a negative, and Schreiner a positive relationship between future orientation and social status. Cottle and Pleck (1969), Cottle *et al.* (1969), and Grommen (1973) found no main effect of social class on time orientation, but they did discover some interaction effects. Middle class boys were more future oriented than other sex-class groups (Cottle and Pleck 1969). Older middle class and older upper class subjects were the most and the least past oriented respectively (Cottle *et al.* 1969). From age 45, the predominant future relative to present orientation of lower class subjects became less pronounced, while this predominance remained after age 45 in higher class subjects (Grommen 1973).

Other biographical factors: Fink (1957) found that activities such as work for financial return (occupation) and for pleasure (hobby) were positively related to future orientation, while organizational activity was not related to future orientation. Neither between widowed and married subjects, nor between working and retired subjects, any differences in time orientation were observed by Schreiner (1970). Schreiner did find significant positive correlations between future orientation and non-occurrence of economic or family problems, degree of activity, and health.

EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH

Matulef *et al.* (1964) hypothesized that vocational counseling for vocational-educational counseling seeking persons, would increase past and future orientation. Half the subjects were counseled, the other half were held out (control group). The results were consistent with the hypothesis, but nonsignificant.

Rizzo (1967) found that psychiatric patients who were just admitted in hospital, were less future oriented than the same patients tested six months later. Patients ready for discharge were also more future oriented than other patients who were not considered for discharge at the moment of the test.

Dies and Hess (1970) divided six comparable groups of recently hospitalized psychiatric patients randomly into three marathon and three short-term psychotherapy groups. The dependent variable was time orientation. The therapy group effect was nonsignificant, the hour of testing and interaction effects were significant. Time orientation shifted from past to future orientation as a function of number of hours spent in group psychotherapy. The significant interaction indicated marathon group participants manifested a greater concentration on past events early in treatment, and then shifted so that by the end of therapy they reflected a more pronounced interest in the future.

Henik and Domino (1975) examined the alteration in future orientation in male heroin addicts who were participating in a methadone

maintenance program. The experimental group consisted of inpatients, the control group was selected from the waiting list. Future orientation increased in both groups. The difference between these increases was nonsignificant.

Gjesme (1975) hypothesized that approach-oriented subjects (motive to achieve success stronger than motive to avoid failure) achieve better when they are more future oriented. Avoidance-oriented subjects (motive to avoid failure stronger than motive to achieve success) would achieve better when they are less future oriented. The results supported the second hypothesis, but not the first.

TIME ORIENTATION AND OTHER ASPECTS OF PSYCHOLOGICAL TIME

Matulef *et al.* (1964) and Platt *et al.* (1971) found no correlation between time orientation and length of future time perspective, while Kastenbaum (1961) and Shybut (1968) found a positive correlation between future orientation and length of future time perspective. Schreiner (1970) obtained a positive correlation, and Winnubst (1975) no correlation between future orientation and affective attitude towards the future. Klineberg (1968) found that subjects who consistently chose a delayed reward were more future oriented than subjects who sometimes chose an immediate reward. Winnubst (1975) interpreted two factors of his factor-analytical research in a delay-of-reward framework. These factors were 'working for the future' and 'saving for the future'. Future orientation correlated positively with these two factors. Cottle (1967) examined the relationship between future orientation and temporal relatedness. For men, predominance of the future over the past and present was not significantly associated with relatedness. For women, however, relatedness decreased as a function of future predominance: the more predominant the future was, the more atomistic (not related) the temporal horizon. Kastenbaum (1961) and Platt *et al.* (1971) found no correlation between future orientation and directionality of time, that is the preference for a directional, active conception of time, as contrasted with preference for a static conception in which a strong sense of movement from 'now' to 'later' is missing. Platt *et al.* (1971) obtained a positive correlation between future orientation and temporal coherence, that is the degree of organization of events in the future time span. Zurcher *et al.* (1967) found that subjects high in future orientation underestimated a short time interval to a greater degree, and showed a greater variability of estimates, than subjects low in future orientation. Winnubst (1975) performed a factor analysis on a great number of items originating from various methods for measuring time perspective. The factor 'future orientation' correlated significantly with the factors 'clear and well defined image of the future', 'time submission', 'time obsession' (positive correlations), and 'here-and-now orientation' (negative correlation). There were no significant correlations between 'future orientation' and 'nostalgic past orientation', 'melancholic past orientation', and 'personal growth plus temporal relatedness'.

Working with the Story Completion Method (see chapter on research methods), Kastenbaum (1965) examined the influence of the affective meaning of the story roots on the temporal orientation expressed in the stories told. Comparing the neutral with the affectively loaded roots, the future was more and the past less frequently conceptualized in neutral than in affective roots. Comparing story roots with a positive and a negative affective meaning, there was no difference in future orientation, while the past was more often conceptualized in stories told to story roots with negative meaning.

Moors (1965) did research on the influence of two different instructions on the results obtained with the Motivational Induction Method (MIM; see chapter on research methods). Subjects were asked to respond very spontaneously (first instruction), or to consider well and list what they really wished (second instruction). The responses to the second instruction showed a significant smaller present orientation than the responses to the first instruction.

Also using the MIM, Moens (1965) found that there exist relationships between specific sentence stems and particular localizations in time of the wishes and plans the subjects had. In other words, all sentence stems showed a systematic relationship with one or more temporal localizations. This means it is impossible with the MIM to make a statement about the relative subjective importance of present and future, because this depends on the kind of sentence stems included. It is possible, however, to compare the time orientation of different groups of subjects who all received the same sentence stems.

Friel and de Aboitiz (1968) found that certain TAT cards tended to elicit more responses in a given tense than other cards. This also means within-group testing of the predominant time orientation is not possible, since the result of such a test depends on which TAT cards were included.

A very interesting and important study was realized by Ruiz *et al.* (1967) on the subject of concurrent validity of methods designed to measure time orientation. These authors presented correlations between four techniques: the Time Reference Inventory, the Incomplete Thoughts Test, the Story Completion Method, and Eson's technique (see chapter on research methods). None of the inter-test correlations reached appropriate levels of significance. Only intra-test correlations were significant, but these are expected and artifactual (induced by the method itself). Ruiz *et al.* concluded that their data failed to support the proposition that the four techniques result in measures reflecting the same explanatory construct. The authors stated (p. 851-852):

That these diverse tests show little, if any, common variance should caution against postulation of general relationships between time orientation and other behavioral variables when such relationships have been found in studies using only one measuring instrument... Future research might do well to focus on test development...

CONCLUSION

The relevancy of the just cited advice given by Ruiz *et al.*, was demonstrated by the all too often contradictory findings presented in the results part of this review. Both on theoretical and empirical grounds, the very broad concept of time perspective was divided in a number of aspects. Now, it appears to be necessary to select or develop a limited number of well construed methods to measure only one of these aspects, on the basis of reliability and validity studies. A lot of methods for measuring time orientation do exist, but too little is known about what they are really worth.

Future research also should concentrate more on the behavioral consequences of certain types of time orientation. So far, these consequences are only hypothetical, e.g., a lack of future orientation is often regarded as a cause of delinquency. Comparing the future orientation of delinquents and non-delinquents, however, is not sufficient to corroborate such a causal relationship. Experimental research is called for.

REFERENCES

- BLACK, W.A., & GREGSON, R.A. Time perspective, purpose in life, extraversion and neuroticism in New Zealand prisoners. *British Journal of Social and Clinical Psychology*, 1973, 12, 50-60.
- BRALEY, L.S., & FREED, N. Modes of temporal orientation and psychopathology. *Journal of Consulting and Clinical Psychology*, 1971, 36, 33-39.
- CAMERON, P. The generation gap: Time orientation. *The Gerontologist*, 1972, 12, 117-119.
- COSSEY, J.M. *Het toekomstperspectief bij jeugddelinquenten. Literatuuroverzicht en vergelijkend onderzoek*. Unpublished master's thesis, University of Leuven, 1975.
- COTTLE, T.J. The circles test: An investigation of perceptions of temporal relatedness and dominance. *Journal of Projective Techniques and Personality Assessment*, 1967, 31, 58-71.
- COTTLE, T.J., PLECK, J., & KAKAR, S. Time and content of significant life experiences. *Perceptual and Motor Skills*, 1968, 27, 155-171.
- COTTLE, T.J. The location of experience: A manifest time orientation. *Acta Psychologica*, 1968, 28, 129-149.
- COTTLE, T.J., & PLECK, J.H. Linear estimations of temporal extension: The effect of age, sex and social class. *Journal of Projective Techniques and Personality Assessment*, 1969, 33, 81-93.
- COTTLE, T.J. Temporal correlates of the achievement value and manifest anxiety. *Journal of Consulting and Clinical Psychology*, 1969, 33, 541-550.
- COTTLE, T.J., HOWARD, P., & PLECK, J. Adolescent perceptions of time: The effect of age, sex and social class. *Journal of Personality*, 1969, 37, 636-650.
- COTTLE, T.J. Temporal correlates of dogmatism. *Journal of Consulting and Clinical Psychology*, 1971, 36, 70-81.
- COTTLE, T.J., & HOWARD, P. Temporal differentiation and undifferentiation: A study of the structure of Indian adolescents' perceptions of time. *Journal of Genetic Psychology*, 1972, 121, 215-233.

- DIES, R.R., & HESS, A.K. Time perspective, intimacy, and semantic-differential changes in marathon and conventional group psychotherapy. *Proceedings of the 78th Annual Convention of the A.P.A.*, 1970, 5, 531-532.
- DILLING, C.A., & RABIN, A.I. Temporal experience in depressive states and schizophrenia. *Journal of Consulting Psychology*, 1967, 31, 604-608.
- ESON, M.E. *An analysis of time perspective at five age levels*. Unpublished doctoral dissertation, University of Chicago, 1951.
- ESON, M.E., & GREENFELD, N. Life space: its content and temporal dimensions. *Journal of Genetic Psychology*, 1962, 100, 113-128.
- FINK, H.H. The relationship of time perspective to age, institutionalization and activity. *Journal of Gerontology*, 1957, 12, 414-417.
- FOULKS, J.D., & WEBB, J.T. Temporal orientation of diagnostic groups. *Journal of Clinical Psychology*, 1970, 26, 155-159.
- FOURNEAU, E. *De invloedsfactoren op het tijdsperspectief. Tijdsituering door de subjecten zelf van hun eigen wensobjecten*. Unpublished master's thesis, University of Leuven, 1967.
- FRAISSE, P. *Psychologie du temps*. Paris, Presses Universitaires de France, 1957¹, 1967².
- FRANK, L.K. Time perspectives. *Journal of Social Philosophy*, 1939, 4, 293-312.
- FRIEL, C.M., & DE ABOITIZ, F.S. Temporal orientation in the criminal psychopath. *Proceedings of the 76th Annual Convention of the A.P.A.*, 1968, 3, 485-486.
- GEIRNAERT, W. *Dominante tijdgerichtheid. Literatuurstudie en empirisch onderzoek*. Unpublished master's thesis, University of Leuven, 1976.
- GJESME, T. Slope of gradients for performance as a function of achievement motive, goal distance in time, and future time orientation. *Journal of Psychology*, 1975, 91, 143-160.
- GOETHALS, J.M. *Bewuste dynamische inhouden van gedetineerden: een vergelijkend onderzoek*. Unpublished doctoral dissertation, University of Leuven, 1967.
- GOLDRICH, J.M. A study in time orientation: The relation between memory for past experience and orientation to the future. *Journal of Personality and Social Psychology*, 1967, 6, 216-221.
- GREAVES, G. Temporal orientation in suicidal patients. *Perceptual and Motor Skills*, 1971, 33, 1020.
- GROMMEN, R. *Tijdsperspectief en variëteit van aspiraties in volwassenheid en ouderdom*. Unpublished doctoral dissertation, University of Leuven, 1973.
- HECKEL, R.V., & RAJAGOPAL, J. Future time perspective in Indian and American college students. *Journal of Social Psychology*, 1975, 95, 131-132.
- HENIK, W., & DOMINO, G. Alterations in future time perspective in heroin addicts. *Journal of Clinical Psychology*, 1975, 31, 556-564.
- HOORNAERT, J. *Tijdsperspectief bij schizofrenen. Literatuurstudie en vergelijkend onderzoek*. Unpublished doctoral dissertation, University of Leuven, 1971.
- KASTENBAUM, R. The direction of time perspective: I. The influence of affective set. *Journal of General Psychology*, 1965, 73, 189-201.
- KASTENBAUM, R. Cognitive and personal futurity in later life. *Journal of Individual Psychology*, 1963, 19, 216-222.
- KENDALL, M.B., & SIBLEY, R.F. Social class differences in time orientation: Artifact? *Journal of Social Psychology*, 1970, 82, 187-191.
- KING, M.R., & MANASTER, G.J. Time perspective correlates of collegiate marijuana use. *Journal of Consulting and Clinical Psychology*, 1975, 43, 99.
- KLINEBERG, S.L. Changes in outlook on the future between childhood and adolescence. *Journal of Personality and Social Psychology*, 1967, 7, 185-193.
- KLINEBERG, S.L. Future time perspective and the preference for delayed reward. *Journal of Personality and Social Psychology*, 1968, 8, 253-257.

- KLUCKHOHN, F.R., & STRODTBECK, F.L. *Variations in value orientations*. Evanston: Row, Peterson, 1961.
- KOENIG, F. Perception of time and cigarette smoking among college students. *Perceptual and Motor Skills*, 1972, 34, 621-622.
- KRAUSS, H.H., RUIZ, R.A., MOZDZIERZ, G.J., & BUTTON, J. Anxiety and temporal perspective among normals in a stressful life situation. *Psychological Reports*, 1967, 21, 721-724.
- LANDAU, S.F. Delinquency, institutionalization and time orientation. *Journal of Consulting and Clinical Psychology*, 1976, 44, 745-759.
- LE BLANC, A.F. Time orientation and time estimation: A function of age. *Journal of Genetic Psychology*, 1969, 115, 187-194.
- LESTER, D. Temporal perspective and completed suicide. *Perceptual and Motor Skills*, 1973, 36, 760.
- LEWIN, K. Time perspective and morale. In: G. WATSON (Ed.), *Civilian morale*. Boston: Houghton Mifflin, 1942.
- MATULEF, N.J., WARMAN, R.E., & BROCK, T.C. Effects of brief vocational counseling on temporal orientation. *Journal of Counseling Psychology*, 1964, 11, 352-356.
- MEADE, R.D. Future time perspectives of college students in America and India. *Journal of Social Psychology*, 1971, 83, 175-182.
- MEADE, R.D. Future time perspectives of Americans and subcultures in India. *Journal of Cross-cultural Psychology*, 1972, 3, 93-99.
- MEGARGEE, E.I., COOPER PRICE, A., FROWIRTH, R., & LEVINE, R. Time orientation of youthful prison inmates. *Journal of Counseling Psychology*, 1970, 17, 8-14.
- MOENS, P. *De invloed van het inductiewoord op de inhoud en het tijdsperspectief van zinsaanvullingen*. Unpublished master's thesis, University of Leuven, 1965.
- MOORS, S. *De invloed van twee verschillende instructies op de inhoud en het tijdsperspectief van zinsaanvullingen*. Unpublished master's thesis, University of Leuven, 1965.
- NOTERDAEME, TH. *Het tijdsperspectief in de aspiraties. Uitwerking van een methode*. Unpublished doctoral dissertation, University of Leuven, 1965.
- NUTTIN, J. The future time perspective in human motivation and learning. *Acta Psychologica*, 1964, 23, 60-82.
- NUTTIN, J. avec la collaboration de W. LENS, K. VAN CALSTER et M. DE VOLDER, La perspective temporelle dans le comportement humain. Étude théorique et revue des recherches. In: P. FRAISSE (Ed.), *Du temps biologique au temps psychologique*. Paris: Presses Universitaires de France, in press.
- PLATT, J.J., & TAYLOR, R.E. Homesickness, future time perspective, and the self concept. *Journal of Individual Psychology*, 1967, 23, 94-97.
- PLATT, J.J., & EISENMAN, R. Internal-external control of reinforcement, time perspective, adjustment and anxiety. *Journal of General Psychology*, 1968, 79, 121-128.
- PLATT, J.J., EISENMAN, R., & DE GROSS, E. Birth order and sex differences in future time perspective. *Developmental Psychology*, 1969, 1, 70.
- PLATT, J.J., EISENMAN, R., DE LISSER, O., & DARBES, A. Temporal perspective as a personality dimension in college students: A re-evaluation. *Perceptual and Motor Skills*, 1971, 33, 103-109.
- RIZZO, A.E. The time moratorium. *Adolescence*, 1967-1968, 2, 469-480.
- ROBERTS, A.H., & GREENE, J.E. A cross-cultural study of relationships among four dimensions of time perspective. *Perceptual and Motor Skills*, 1971, 33, 163-173.
- ROKEACH, M., & BONIER, R. Time perspective, dogmatism and anxiety. In: M. Rokeach, *The open and closed mind*. New York: Basic Books, 1960.
- ROOS, P., & ALBERS, R. Performance of alcoholics and normals on a measure of temporal orientation. *Journal of Clinical Psychology*, 1965, 21, 34-36.
- RUIZ, R.A., REIVICH, R.S., & KRAUSS, H.H. Tests of temporal perspective: do they measure the same construct? *Psychological Reports*, 1967, 21, 849-852.

- RUIZ, R.A., & KRAUSS, H.H. Anxiety, temporal perspective and item content of the Incomplete Thoughts Test (ITT). *Journal of Clinical Psychology*, 1968, 24, 70-72.
- RYCHLAK, J.F. Manifest anxiety as reflecting commitment to the psychological present at the expense of cognitive futurity. *Journal of Consulting and Clinical Psychology*, 1972, 38, 70-79.
- SCHREINER, M. Zur zukunftsbezogenen Zeitperspektive älterer Menschen. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*, 1970, 2, 28-46.
- SHANNON, L. Development of time perspective in three cultural groups: A cultural difference or an expectancy interpretation. *Developmental Psychology*, 1975, 11, 114-115.
- SHYBUT, J. Time perspective, internal vs. external control, and severity of psychological disturbance. *Journal of Clinical Psychology*, 1968, 24, 312-315.
- TEAHAN, J.E. Future time perspective, optimism, and academic achievement. *Journal of Abnormal and Social Psychology*, 1958, 57, 379-380.
- VAN CALSTER, K. *Angst en toekomstperspectief. Literatuuroverzicht en vergelijkend onderzoek*. Unpublished master's thesis, University of Leuven, 1971.
- WALLACE, M., & RABIN, A.I. Temporal experience. *Psychological Bulletin*, 1960, 57, 213-236.
- WINNUST, J.A.M. *Het Westerse tijdssyndroom. Conceptuele integratie en eerste aanzet tot construct validatie van een reeks molaire tijdsvariabelen in de psychologie*. Amsterdam: Swets & Zeitlinger, 1975.
- ZURCHER, L.A., Jr., WILLIS, J.E., IKARD, F.F., & DOHME, J.A. Dogmatism, future orientation, and perception of time. *Journal of Social Psychology*, 1967, 73, 205-209.

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