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What is This?

Testing Zimbardo's Stanford Time Perspective Inventory (STPI) – Short Form

An Italian study

Marisa D'Alessio, Angela Guarino, Vilfredo De Pascalis, and Philip G. Zimbardo

ABSTRACT. In the present study the psychometric properties of the Stanford Time Perspective Inventory (STPI – short version) are assessed in an Italian sample. Factorial analysis of STPI items was performed on 1507 respondents (965 women and 542 men). Results showed a clear correspondence between factorial components and a priori hypothesized dimensions by evidencing three factors (Future, Hedonistic Present, Fatalistic Present). Italian translation of the STPI indicates a fair degree of internal consistency and good metrological characteristics. The present results parallel those previously reported for an American sample. The present study, however, failed in evidencing the 'Past' as a factor in the factor structure. The results are discussed in terms of individual differences with respect to the relationships between demographic variables and temporal dimensions. KEY WORDS • time orientation • time perception • time perspective inventory

The notion of time estimation in human life is one of the biggest challenges that man has been faced with since the contextualization of human events came to hold a prominent position within historic and philosophical thinking. The notion of time is, in fact, something we experience and manipulate in our daily life and which enables us to build our identity (Ricci Bitti and Rossi, 1988).

In the 17th century Descartes located subjective time perception inside man;

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in other words he regarded time as innate. The Copernican-Newtonian Revolution turned time into a real, observable and measurable object, no longer dependent on the observer. Kant was the first one to outline the psychological aspect of the notion of time; he regarded time as an a priori property of the human mind which enables man to observe it. Positivism turned time once again into something independent of social and individual experience.

Pierre Janet, however, studied the relationship between human behaviour and the perception of time. He thought of the notion of time as closely related to the socializing process: the social rules involved in the making of homogeneous and universal time are interiorized. Janet (1928) regarded the problem of time as two-dimensional: on the one hand man adapts himself to time; on the other hand he creates it. Later on, Fraisse (1957) studied the way in which man adapts himself (to time) and creates temporal conditions. He established three levels of reaction: (1) physiological time; (2) time past, or perception of time; (3) speculation on time. With regard to this last level, Fraisse introduced the concept of time horizon/span, in which cognitive and motivational factors interact in respect to real life. In conclusion, time assessment is turned into time experience.

The concept of time horizon/span is close to that of time perspective. This was introduced by Frank (1939), who defined it as 'time past which includes an individual's behaviour and the extension of his representation of the past and future of his life' (Ricci Bitti and Rossi, 1988: 35).

Lewin (1951) also stressed the impact of time perspective on psychological conditions. He maintained that time perspective is influenced by the individual's social background and his or her motivational processes. Lewin's life-space model included the influence of both the past and the future on current behaviour. According to Lewin (1951), time perspective is part of the individual's orientation of psychological past and future existing at a given time. This integrative view of all temporal aspects within the present moment is similar to Zen circularity of time concepts (Ornstein, 1975).

More recently, Nuttin (1985), in line with Lewinian time-filled life space, pointed out how the making of time perspective is conditioned by the cognitive working out of needs, intentions and projects. This author outlined the impact of future and past events on present behaviour, laying greater emphasis on the future. Nuttin underlines how anticipation is conditioned not only by past experiences but also by an intervention of cognitive structures that work out projects and intentions in such a way as to build the individual's motivations. Contemporary social-cognitive theoretical theory, as represented in Bandura's (1997) self-efficiency theory, highlighted a tripartite temporal influence on behavioural self-regulation wherein efficacy beliefs are based in past experiences, current appraisals and relations on future alternatives.

A great deal of research has dealt with the psychological meaning of several temporal dimensions in addition to theoretical philosophical reflexions on the

experience of time. This research has taken into account the dimension of time (1) within the psychopathological context (Meerlo, 1950; Arieti, 1955); (2) in the various stages of the evolutionary process (Lewin, 1951; Banissoni, 1968; Casadio, 1969); and (3) in deviant adolescent behaviour (Barndt, 1955; Davids and Parenti, 1957). Trommsdorff (1983), examining the relation between future orientation and socialization, regarded this particular type of orientation as a variable guideline of the integrated individual's behaviour. Finally, Reale (1984) examined the relation between the making of the Ego and the temporal dimension in the age of puberty. His research has shown that the notion of past and future, more than any other, is gradually interiorized as personal experience. Furthermore, the making of the Ego allows the individual to delay gratifications that are of great concern to him or her.

Very recently, Zimbardo and his colleagues have outlined how the study of psychological time in general, and of time perspective in particular, languishes on the sidelines of contemporary psychology. The research programme primed by Zimbardo's group was initiated for the sake of refocusing efforts toward recognizing the centrality of time perspective in many domains of psychology, also including time perspective in new research paradigms. In line with Lewinian tradition, Zimbardo and colleagues (see for example, Zimbardo et al., 1997; Zimbardo and Boyd, 1999) have advanced a broad conceptualization of temporal perspective as a foundational process in both individual and societal functioning. According to Zimbardo temporal perspective is a non-conscious process in which temporal categories play a leading-connective role in the relationship between personal and social experiences that help to give meaning and order to everyday life events. Temporal cognitive frames are used in encoding, storing and recalling experienced events, as well as in forming expectations, goals and imaginative views. The concrete representation of the present lies between the abstract psychological constructions of prior past and anticipated future events. Learned time perspective exerts a dynamic influence on judgement, decision and actions. The abstract cognitive processes (of reconstructing the past and constructing the future) influence current decision making in the immediate life space and in delaying apparent sources of gratification that might lead to undesiderable consequences.

Most of the research on time perspective has tried to relate either present or future orientation to other psychological constructs and to their effects on specific behaviours, with little consideration to past orientation. Dominant present orientation has been related to many negative consequences for individuals, such as mental health problems, juvenile delinquency, addictions and crime, especially when present-oriented individuals are living in a predominantly future-oriented society. Future orientation has been seen as related to a number of positive consequences for individuals, such as higher socioeconomic status, superior academic achievement and fewer risk-taking behaviours (see for

example, Fraisse, 1957; De Volder and Lens, 1982; Nuttin, 1985; Strathman et al., 1994; Zaleski, 1994; Levine, 1997).

According to Zimbardo and Boyd (1999), the reason why this central aspect of the human experience has not been incorporated into current domains of psychology relates to the non-cumulative nature of past research rather than the lack of an adequate perspective. Previous attempts to measure the complexity of time perspective have been carried out using the Thematic Apperception Test (Wohlford, 1966), the Circles Test (Cottle, 1976), the motivational induction method (Nuttin, 1985) and time lines (Rappaport, 1990). However, none of these methods have been widely accepted because of their low reliability and scoring problems.

Some attempts at a conceptual simplification have been focused only on a single dimension, such as the present or future, without considering the influence of other temporal dimensions. Examples of these attempts are the Consideration of Future Consequences Scale (Strathman et al., 1994), a well-known Sensation Seeking Scale that emphasizes present-oriented behaviour (Zuckerman, 1994), and a future anxiety scale (Zaleski, 1994). Although these scales are improvements in taking into account time perspective, they are literally one-dimensional and therefore fail to provide valid measures of the other dimensions with individual temporal profiles.

In the present study we testify that the Zimbardo Time Perspective Inventory (STPI) addresses the shortcomings of the aforementioned scales. It provides an easy way to measure multiple time perspectives as individual temporal profiles and it is built on a theoretical basis considering social, cognitive and motivation-emotional processes that are assumed to contribute to – and are in turn influenced by – the operation of time perspective.

The process of developing the short form version of the STPI presented in this article involved a number of attempts over the years (Gonzales and Zimbardo 1985; Zimbardo 1990; Zimbardo et al., 1997; Keough et al., 1999). The scale is based on theoretical reflection and analysis, interviews, repeated factor analysis, and the unspecific attempts to increase internal consistency and factor loadings. The STPI was developed to provide a standard measure of time perspective with clearly demonstrable psychometric properties and has been used to predict a considerable amount of personal and behavioural features.

Zimbardo's work has shown that present-oriented individuals have a more practical attitude, tending to focus on reality rather than on expectation. People oriented towards the hedonistic present are self-indulgent pleasure-seekers and shirk all exacting work. They love to play sports and enjoy hobbies and are often involved in activities requiring a great deal of energy. At the same time they turn out to be more sensitive and touchy, and become antisocial and aggressive whenever they intend to break the rules. People oriented towards the fatalistic present feel their lives dominated by external forces rather than by

their own actions. They tend to see themselves as puppets in the hands of fate. These people have an inclination to fatalism, being ready to take the blame for their failures and to deny their achievements. Future-oriented people show great concern about the consequences of their actions, are self-responsible and superachievers. They are also ready to put a great deal of effort and ingenuity into their work, as they seek long-term gratification. These people are usually safe from emotional risks and tend to look after their health, thus avoiding long-term negative consequences: they stick to keep-fit schemes. They are good at avoiding temptations and distractions and devote most of their energies and actions to the achievement of a goal. However, these people are unable to enjoy the present. One of their biggest aspirations is to increase their efficiency so as to do many things at a time. Finally, past-oriented people act and decide in response to recurrent situations of their past experiences. These people do not take chances; they tend to be conservative, as they are not attracted to novelties. Myths and rituals play a major role in their lives and they are often more prejudiced than future-oriented people owing to their distrust of anything or anyone different. A positive feature of past-oriented people is their sense of personal continuity along with a stable sense of self through the years. If they had positive experiences in the past, they rejoice in recalling them despite their present unhappiness. If they had negative experiences, these affect their present life.

In a later study, Zimbardo (1990) tried to use time perspective indices as predictors of individual behaviour. In an experiment where subjects were involved in a task similar to the 'prisoner's dilemma' he observed that future-oriented individuals cooperated when they found their behaviour convenient to maximize their goals. The past-oriented individuals approximated their scores to those of the future oriented, whereas the present-oriented individuals had the worst performance, as they worked at random, without any organization, co-operation or consistent projects. Extending these results to real-life situations, Zimbardo (1990) stressed the importance of time orientation in predicting and devising strategies for doing away with pathological/deviant behaviour.

More recently, Zimbardo and colleagues reported two application studies in which the short version of the STPI proved to be a good tool for evidencing individual differences in time perspective as an important predictor of risky driving (Zimbardo et al., 1997) and individual differences in the use and abuse of tobacco, alcohol and drugs (Keough et al., 1999).

Starting from Zimbardo's validation studies for American samples, the aim of the present study was to validate previous psychometric properties of the short version of the STPI (22 items) for an Italian sample. Given the different sociocultural and linguistic contexts, the main aim of the present study was to verify if an Italian translation of the STPI displays a three-factor solution similar to that reported for American samples. Factor analysis was used to check the reliability of temporal dimensions and to evaluate the internal consistency of the scale.

Methods

Statistical analyses

The dimensional character of the Italian translation of the STPI – Short Form (see Appendix), was assessed by performing a factorial analysis. The internal consistency of the questionnaire was evaluated with the Cronbach alpha for each dimension of the scale.

Participants

The STPI was administered on a representative sample of Italian population made up of 1507 individuals (542 males and 965 females, age range 16–89 years, M = 34.7 years, SD = 10.55 years).

The educational standard was: primary school (3.9 percent); secondary school (17.8 percent); high school (60.18 percent); university and postgraduate (18.2 percent). This sample was divided into four age groups, making use of quartiles. The four age groups were composed as follows: 16–27 years; 28–33 years; 34–41 years; 42–89 years.

Results

Dimensional characteristics of the instrument

The STPI data scores were factor analysed by using the Scree-test procedure. Three factors were found that altogether accounted for 30 percent of explained variance (see Table 1). We found this value acceptable, considering the shortness of the instrument (22 items). The Kaiser's coefficient was calculated as a measure of sampling adequacy since in the present sample we had about 68 cases per variable (i.e. more than a minimum of five cases per variable). The Kaiser's coefficient was 0.732, a value that is considered good for a factor analysis (Tabachnick and Fidell, 1989: 604).

Later on we carried out a Varimax-rotated Factor Analysis which showed the factor structure displayed on Table 2. As can be seen in Table 2, the contents of the items saturated on three factors. The first factor was referred to as Future, the second as Hedonistic Present, the third as Fatalistic Present. Of the total variance, 25.3 percent, 18.8 percent and 21.1 percent was accounted respectively for Future, Hedonistic Present and Fatalistic Present dimensions.

The Cronbach alpha was used as an index of reliability, since this seemed to provide even more information than the metrological characteristics of the instrument. The alpha for Future turned out to be good ($\alpha = 0.67$) and the items showed an acceptable parallelism and intercorrelation (see upper section of Table 3).

TABLE 1
Communality estimates by Principal Factor Analysis of STPI

Variables	Communality	Factors	Pct di Var	Pct Cum
IT 1	0.188	1	15.1	15.1
IT 10	0.219	2	8.4	23.6
IT 11	0.418	3	7.3	30.8
IT 12	0.378			
IT 13	0.284			
IT 14	0.209			
IT 15	0.252			
IT 16	0.452			
IT 17	0.296			
IT 18	0.375			
IT 19	0.393			
IT 2	0.303			
IT 20	0.231			
IT 21	0.276			
IT 22	0.344			
IT 3	0.206			
IT 4	0.310			
IT 5	0.351			
IT 6	0.379			
IT 7	0.206			
IT 8	0.328			
IT 9	0.382			

The alpha for Hedonistic Present was found to be lower than the previous one $(\alpha = 0.544)$. This is because for this factor there was a higher fluctuation in the averages and variances of the items, and a lower intercorrelation between the items (see the mid section of Table 3).

Tha alpha obtained for Fatalistic Present was found to be the lowest coefficient ($\alpha=0.489$). The metrological characteristics of this factor raised fewer problems than those of the previous one: there was a fair amount of parallelism between the items and these showed averages and standard deviations within theoretical reference values (see the bottom part of Table 3). Nevertheless this factor did not prove to be very reliable since it is made up of only five items. Means and standard deviations for the three STPI factors obtained on our Italian sample are reported in Table 4.

TABLE 2
Factor structure and factor loadings after VARIMAX of STPI

Variables	Future	Hedonistic Present	Fatalistic Present
IT 18	0.575		
IT 5	0.567		
IT 2	0.527		
IT21	0.514		
IT 6	0.508		
IT 4	0.496		
IT 22	0.471		
IT 7	0.439		
IT 20	0.413		
IT 19		0.599	
IT 11		-0.505	
IT 17		0.505	
IT 16		-0.456	
IT13		0.447	
IT 1		0.408	
IT 10		0.366	
IT 3		0.334	
IT 9			0.574
IT 8			0.508
IT 12			0.506
IT 15			0.491
IT 14			0.424

TABLE 3
Parallelism items for the Future, Hedonistic Present and Fatalistic Present factors

	Means	Range	Variance
Items Future	3.421	1.145	0.126
Variance items	1.075	0.887	0.687
Intercorrelation	0.190		
Items Hedonistic Present	2.326	1.994	0.486
Variance items	1.088	0.436	0.028
Intercorrelation	0.130		
Items Fatalistic Present	3.207	1.133	0.192
Variance items	1.300	0.441	0.025
Intercorrelation	0.138		

TABLE 4
Scoring STPI on Italian sample (n = 1507)

Factors	M	SD
Future Hedonistic Present Fatalistic Present	30.79 18.61 19.24	4.89 4.07 3.64

TABLE 5
Mean rank sex for Fatalistic Present

Gender	n	M rank	U Mann-Witney	р
Men	542	646.30	203142	.0000
Women	965	814.49		

TABLE 6
Mean rank sex for Hedonistic Present

Gender	n	M rank	U Mann-Witney	p
Men Women	542 965	810.42 722.31	200934	.0000

Relationships between demographic variables and temporal dimensions

The relationship between demographic variables and temporal dimensions of Future, Hedonistic Present, Fatalistic Present, was examined by using Mann-Witney U and Kruskall-Wallis tests. This was done in order to highlight possible differences between sex, age and educational standard.

In terms of gender variable, women turned out to be more fatalistic than men (U = 203142, p = .0000; see Table 5), men turned out to be more hedonistic (U = 230934; p = .0000; see Table 6), while no considerable gender differences were detected for Future factor (p > .05).

In terms of age groups, individual ageing between 28 and 40 years turned out to be more future oriented than those between 16 and 27 years ($\chi^2 = 20.54$, d.f. = 3, p = .0000; see Table 7).

The individuals aged 16–27 and 28–33 years turned out to be more oriented towards the Hedonistic Present as compared to the remaining two groups ($\chi^2 = 84.62$, d.f. = 3, p = .0000; see Table 8).

TABLE 7
Mean rank age for Future (Kruskal-Wallis)

Age (years)	n	M rank	χ^2	p
16–27	400	674.13	20.54	.0000
28-33	362	784.85		
34-41	379	758.72		
42–89	366	805.88		

TABLE 8
Mean rank age x Hedonistic Present (Kruskal-Wallis)

Age (years)	n	M rank	χ^2	p
16–27	400	917.58	84.62	.0000
28-33	362	746.85		
34-41	379	667.71		
42–89	366	671.65		

TABLE 9
Mean rank age x Fatalistic Present (Kruskal-Wallis)

Age (years)	n	M rank	χ^2	p
16–27	400	711.16	15.50	.0001
28-33	362	714.57		
34-41	379	775.95		
42-89	366	817.09		

TABLE 10
Mean rank education × Fatalistic Present (Kruskal-Wallis)

Education	n	M rank	χ^2	p
Elementary High school College	59 268 905	920.21 844.19 758.51	48.34	.0000
University	275	616.82		

Individuals ranging from 34 to 42 years and over proved to be the most oriented towards the Fatalistic Present ($\chi^2 = 15.50$, d.f. = 3, p = .0001; see Table 9).

Finally, individuals with a secondary or high school degree turned out to be more oriented toward the Fatalistic Present than the two remaining groups with higher educational degree ($\chi^2 = 48.34$, d.f. = 4, p = .0000; see Table 10). In contrast, neither the graduates nor the postgraduates obtained high scores on Fatalistic Present (p > .05).

Discussion

The present research, conducted on a sample of the Italian population, has evidenced three main factors named as Future, Hedonistic Present and Fatalistic Present. The present and future dimensions evidenced in the present study on an Italian sample appear to be parallel to those reported with the original American sample (Zimbardo et al., 1997; Keough et al., 1999). Moreover, data obtained for the present validation suggest that the external validity of the STPI points to a stable structure. Our replication can be considered as a cross-validation on the examined Italian sample. In addition, the present results indicate that STPI subdimensions show a fair degree of internal consistency and that their items are sufficiently distinctive since, in most cases, their averages are close to the theoretical/standard averages and show a deviation that is far from zero (Dillon and Goldstein, 1984).

There is, however, a limitation in terms of low Cronbach alpha values. This limitation is mainly due to the small number of items in the STPI scale. It was observed, in fact, that the third factor, i.e. Fatalistic Present, is made up of only five items, though having good metrological characteristics. In order to face this problem, Zimbardo (1999) has recently developed a 56-item scale, which we are now going to validate for an Italian population.

In terms of the relationship between demographic variables and temporal dimensions, in the present study we obtained different results from those reported by Gonzales and Zimbardo (1985). These authors reported that women were more level-headed than men and that the latter, along with students, were more future oriented. In contrast, the present findings did not reveal considerable differences between men and women with regard to future orientation. Our findings indicate that men turned out to be hedonistic, while women proved to be more fatalistic. Moreover, compared with American findings, our results indicate that young people aged between 16 and 27 years were more present oriented rather than future oriented. This discrepancy between our results and those reported in the Gonzales and Zimbardo's (1985) study might be accounted for by differences in social and cultural background between the American and Italian samples. This apparent discrepancy may be explained if we assume that

the socioeconomic level of the present Italian sample is lower than that of the American one. It is known, in fact, that the tendency to control future life events is associated with a higher socioeconomic level. However, despite cultural differences between the present study and those reported for the American sample, our results seemed to come to the same conclusion, i.e. that people tend to move from present orientation (characteristic of youth and the early years of adulthood) to future orientation when they reach the age of maturity, and from this towards a more fatalistic attitude in old age.

Finally, the present research has revealed a significant relationship between educational standard and time perspective. In fact, the present data showed that people with a primary or secondary school degree tend to show a more fatalistic attitude than do graduates. These data seem to be of great interest, since they suggest that a low educational standard, known to be associated with a low socioeconomic status, independently from the aptitude for learning, results in a vision of life and time that is independent of the individual's will and ability to make plans for the future which, in turn, produces an attitude of passive submission to events.

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Appendix

Stanford Time Perspective Inventory – Short Form

- 1. I believe that getting together with one's friends to party is one of life's important pleasures.
- 2. I believe that a person's day should be planned ahead each morning.
- 3. If things don't get done on time, I don't worry about it.
- 4. It gives me pleasure to think about my past.
- When I want to achieve something, I set goals and consider specific means for reaching those goals.
- Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play.
- 7. I believe that my future is beautiful and well planned.
- 8. I try to live my life as fully as possible one day at a time.
- 9. It doesn't make sense to worry about the future since there is nothing to do about it anyway.
- 10. When I have money I like playing and betting.
- 11. It upsets me to be late for appointments.
- 12. I do things impulsively and I take decisions at the moment.
- 13. I feel that it's more important to enjoy what you're doing than to get work done on time.
- 14. I don't make things that are important for me in the future, if they don't like me now.
- 15. I'm inclined to lose my self-control if someone provokes me.
- 16. It upsets me when people are late for appointments.
- 17. When I go to parties I get drunk.

- 18. I complete projects on time by making steady progress.
- 19. I take risks to put excitement in my life.
- 20. I make lists of things to do.
- 21. I keep working at difficult, uninteresting tasks if they will help me get ahead.
- 22. I am able to resist temptations when I know that there is work to be done.

Stanford Time Perspective Inventory – Short Form: Italian Translation

- 1. Riunirsi con gli amici e festeggiare è uno dei piaceri più importanti della vita.
- 2. Ogni mattina si dovrebbe fare il piano della propria giornata.
- 3. Se le cose non vengono fatte in tempo non mi preoccupo.
- 4. Mi piace pensare al futuro.
- Quando voglio ottenere qualcosa, mi pongo degli obiettivi e valuto i mezzi adatti a raggiungerli.
- Rispettare le scadenze di domani e concludere tutto il lavoro viene prima del divertimento di stasera.
- 7. Il mio futuro mi sembra bello e ben tracciato.
- 8. Cerco di vivere giorno per giorno.
- E' inutile fare progetti a lunga scadenza perchè le cose difficilmente vengono nel modo programmato.
- 10. Quando ho dei soldi in più mi diverto a giocare o a scommettere.
- 11. Mi da molto fastidio essere in ritardo agli appuntamenti.
- 12. Faccio le cose impulsivamente prendendo decisioni al momento.
- 13. E' più importante che mi piaccia quello che sto facendo che finire il lavoro in tempo.
- 14. Non faccio le cose che saranno utili per me se non mi piacciono ora.
- 15. Quando qualcuno mi provoca tendo a perdere il controllo.
- 16. Mi irritano le persone che arrivano in ritardo agli appuntamenti.
- 17. Alle feste mi ubriaco.
- 18. Termino in tempo le cose facendo progressi in maniera costante.
- 19. Corro dei rischi per rendere la vita eccitante.
- 20. Faccio le liste delle cose da fare.
- 21. Mi applico molto su un compito difficile e noioso se so che mi aiuterà a progredire.
- 22. Riesco a resistere alle tentazioni quando so che c'è lavoro da fare.