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**TIME IN ADOLESCENCE.  
VALIDATING ZIMBARDO'S STANFORD TIME  
PERSPECTIVE INVENTORY  
USING A SAMPLE OF ITALIAN ADOLESCENTS**

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In this study, we explore the psychometric characteristics of Zimbardo's Stanford Time Perspective Inventory, using a representative sample made up of 1517 Italian adolescents, aged 15-19 years. The results show marked differences with respect to preceding studies conducted in the United States and Italy. In particular, the scale of the present forms a single dimension, losing its subdivision into two distinct dimensions, hedonistic and fatalistic. The two scales found in factor analysis, present and future, show a good degree of internal consistency and discriminating validity. Results are interpreted according to the individual differences present in the sample and to the cultural and economic changes occurring at this specific moment of history.

**Key words:** Adolescence; Time Perspective Inventory; Time orientation; Stanford Time Perspective Inventory.

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**TIME AND ADOLESCENCE**

The awareness of time and of its division into past, present and future matures at the adolescent stage, when personal reflection begins regarding an individual's "being in the world," and the corresponding delineation of one's representation of the world, one's particular choices, and one's construction of an autobiography (Fabbrini & Melucci, 1992).

The period of adolescence, an early moment in the structuring of personal biography, thus becomes a preferential "place" of observation: not only of the perception and structuring of time during a given phase of lifetime, but of individuals of our era in general. In the past, the life of an individual followed a rhythm of precise rituals and well-defined pathways, broken only by casual, unforeseeable events. As time has passed, instead, we see a growing individualization and de-institutionalization, leading to the loss of that predictability which characterized life, and to the constrictions implicit in such predictability (Bauman, 1995, 2000; Beck, Giddens, & Lash, 1994). In recent years, the individual's vital condition has been affected, as well, by indeterminateness and contingency dictated by a lack of optimism regarding the future.

In the 1990s, there was a strong tension oriented toward the future, which presented itself and was perceived as being rich with possibilities; a future in which personal biographies would no longer be determined *a priori*, but would be free, variable, rich, and reversible. The excess

characterizing that moment in history had widened the limits of the possible, not only for adolescents, but also for those who, given their age, were presumed to be more intent in planning for the future. This excess brought with it the risk of suspending stable commitment in the present; of creating nomadism in time and space: “a time with too many ‘possibles’ turns into a possibility without time” (Fabbrini & Melucci, 1992, p. 79). The excessive number of possibilities, therefore, led to the risk of closing off the possibility to choose: not because it was impossible to choose, but because persons became incapable of choosing. Their incapacity stemmed from their rejection of loss and renunciation as a fundamental basis for present action in building the future.

In contemporary Western society, prospects appear to have changed considerably. The growing uncertainty about the future and precariousness in the present which we see today is experienced by the young in an ambivalent manner. On one hand, they complain of being forced to depend on their family of origin for a prolonged period; on the other, they admit that they experience situations of stability — such as guaranteed steady employment — as inconsistent with the achievement of their goals (Buzzi, Cavalli, & De Lillo, 2002). Moreover, the general climate — in the family and institutions — of acquiescence toward the longer waiting period necessary before young people can acquire adult status, seems to lead to “pragmatic, present-oriented action strategies, and the illusion that important decisions pertain to a future to be dealt with later” (Buzzi, Cavalli, & De Lillo, 2007, pp. 360-361).

Today, therefore, the new generations are led to focus their temporal horizon on the present dimension and on individual interests, leaving decisions for the future in the background, along with the projection of long-term consequences and interest for the community (Leccardi, 2009; Merico, 2008). It seems senseless to invest in the future by embracing a project that implies putting off satisfaction today for the sake of tomorrow’s goal. Instead, one must be capable of seizing the unexpected satisfactions of today, while mentally preparing oneself for uncertainty (Leccardi, 2009).

The time dimension, in its perception and in its structuring, emerges in this cultural panorama as increasingly indicative and predictive of the various individual biographies. It seems possible to hypothesize differing types of attitude regarding many aspects of individual life — socialization, achievement in one’s career, volunteer work, trust toward institutions, and so on (Scanagatta, 2011) — among those who seem capable of building a future, however distant, on one hand and on the other, those who seem capable merely of thinking of today, and therefore strive to gain all they can from the present, with no perception of their possible role as actors in their own life itinerary or that of the community.

The importance of the topic, “time,” and the changes in its perception and use which have occurred in personal lives, have led us to wonder if and to what degree Zimbardo’s Stanford Time Perspective Inventory (STPI)<sup>1</sup> — created and validated at the end of the ‘90s, in a socio-cultural context radically different from today’s — is still capable of revealing today’s modes of perceiving and structuring time. In our study, therefore, we shall attempt to validate the Italian version of the scale, as applied to a sample of Italian adolescents.

#### THE INSTRUMENT

According to the theory of intertemporal perspectives (Zimbardo & Boyd, 1999, 2008), individuals tend to adopt five main types of temporal perspective.

1. The *Past-Negative-oriented* perspective characterizes individuals who make their decisions mainly on the basis of negative past experiences having direct and indirect effects. It characterizes highly conservative, cautious persons, afraid to change their habits.

2. The *Past-Positive-oriented* perspective characterizes individuals who look to the past as a source of positive experience, learning from their errors and considering family and social traditions and rituals as elements upon which to build a strong but open social identity. They tend to remember their own past frequently, recalling their memories of childhood, adolescence, and “things past” with positive sentiments. Past-Positive-oriented individuals tend to be traditionalist, have a good sense of personal stability and behave in response to their past experiences.

3. The *Hedonistic Present-oriented* perspective characterizes individuals showing a hedonistic attitude (*carpe diem*); they strive toward the immediate satisfaction of their desires, with little worry over future consequences. Emotional and energetic, they have many interests and hobbies. Sensitive and moody, they become aggressive whenever they intend to break the rules.

4. The *Fatalistic Present-oriented* perspective characterizes individuals attributing great importance to fate and to chance: they do not tend to work toward building a plan for their future.

5. The *Future-oriented* perspective characterizes individuals who tend to plan their actions according to long-term goals. By focusing their attention on a cost-benefit analysis of the alternatives open to them, and on the possible future consequences of those alternatives, they prove themselves capable of avoiding temptation and distractions in order to achieve their goals. These people are generally safe from emotional and psychological risks, avoid deviant behavior and devote most of their energies and actions to the achievement of a goal in work or school.

Zimbardo's Stanford Time Perspective Inventory (STPI), constructed by rendering operative these five dimensions, is composed of 56 items. D'Alessio, Guarino, De Pascalis, and Zimbardo (2003) validated the Italian short version of the STPI using a national sample ranging in age from 16 to 89 years. This version, made up of 22 items, considers the two present dimensions (hedonistic and fatalistic) and the future dimension, without taking into account the past dimensions, negative and positive.

Our choice to use the Italian short version of the STPI sprang both from the operative need to avoid making the instrument excessively long, and from the minor importance of the past dimension in constructing the individual biographies of adolescents.

## THE SAMPLE

For STPI validation as applied to an adolescent population, we used a representative sample of the Italian population (1 January 2011).<sup>2</sup> While the total number of individuals from 15 to 19 years of age residing in Italy was 2,934,617, the sample was made up of 1517 individuals, yielding a confidence level of 95% and a margin of error of 2.5%.

Assemblage of the adolescent sample group for STPI validation was carried out in several steps, since we used data deriving from two different surveys. The first survey was made in the sphere of the European project, PACT (Pathways for Carbon Transitions), a study<sup>3</sup> involving European high school students aged 14-19, mainly from France, Germany, Italy and the United Kingdom. Initially, a snowball sampling data collection was adopted, starting from 10 Italian high schools, while later, the questionnaire was to be published at various selected internet

sites, including online social network sites. The questionnaire was issued from May to October 2009 by way of CAWI techniques (Computer Aided Web Interviewing) and, after a careful phase of data quality control, 1244 interviews of young Italians became available.

The second enquiry, entitled “Young people and cross-mediality,” was financed by Regional Communications Committee (CoReCom) in Veneto (Italy), with the purpose of examining the opinions of young people on their use of web contents. The survey included an online CAWI administration of questionnaires between May and June 2012, which yielded 1701 interviews.

Later, all records with missing data from the two datasets were excluded. These data were then merged to form a single database also containing respondent’s attributes like gender and age, enabling researchers to extract the necessary quotas in proportion to national population data. Next, a sample of 1,517 individuals representative of the Italian population according to age (15 to 19 years) and gender was extracted from a set of 2,474 interviews. Table 1 shows the distribution of the two attributes in the sample.

TABLE 1  
Sample distribution by gender and age

Age	Males	Females	Total
15	152	143	295
16	135	145	280
17	157	148	305
18	164	154	318
19	165	154	319
Total	773	744	1517
Mean age	17.07	17.04	17.06

## RESULTS

In order to test the validity of the “short form” STPI for the Italian sample of adolescents, first of all, a factor analysis was performed. Respondents were asked to indicate how characteristic of them a statement was on a 5-point Likert scale ranging from *completely false* (1) to *completely true* (5). Despite the wide range of the sample with respect to the number of variables (22), we first verified the conditions of applicability for factor analysis by using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, and Bartlett’s test of sphericity.<sup>4</sup> The KMO test gave a result of .82, higher than the level of .60 which indicates that factor analysis is applicable (Tabachnick & Fidell, 1989). Bartlett’s test results were significant ( $p < .001$ ,  $df = 231$ ), indicating that the correlation matrix differs from the identity matrix. Then, we applied principal components. First of all, we used the Scree-test (Cattell, 1966) that revealed two distinct factors. Table 2 shows that the first two eigenvalues absorb 30.5% of the variance.

The presence of two factors would imply the lack of one dimension on the short-form STPI scale, which should include three factors, as verified by D’Alessio et al. (2003) for a sample of the Italian population. Although the result is plausible, since the sample in this study is made up of a

TABLE 2  
Variance explained

Component	Eigenvalues		
	Total	% of variance	Cumulative %
1	3.896	17.711	17.711
2	2.814	12.789	30.500
3	1.467	6.666	37.166
4	1.299	5.903	43.069
5	1.165	5.297	48.365
6	1.066	4.846	53.211

particular sub-population, we sought further confirmation for the number of factors. One possible problem, often underestimated in social and psychometric research, is the non-normality of data available. In our case, the non-normality relates to the use of the Likert scale: in none of the 22 variables results were normally distributed (Kolmogorov-Smirnov test). In such cases it is possible to use other statistical procedures which avoid possible biases deriving from data distribution. For example, confirmation of the number of factors deriving from our sample of adolescents is given by Velicer's Minimum Average Partial (MAP) test (Velicer, 1976), and also by the version of the test itself which is presented by O'Connor (2000). Using the SPSS syntax provided by the latter author, we found that the number of components was two using both procedures.<sup>5</sup>

Having established the number of factors, we observed the distribution of items composing the STPI on two dimensions, as seen in Table 3, which shows the rotated component matrix (coefficients lower than .30 are suppressed). We chose varimax rotation in order to maximize the variance of each factor which should represent only a small number of variables (Kaiser, 1958). Although STPI factors are correlated, we decided to use varimax solution as Zimbardo and Boyd (1999) and D'Alessio et al. (2003) did, because it makes it easier to identify each variable with a single factor.

We may observe that items 2, 4, 5, 6, 7, 18, 20, 21 and 22 were loaded on the first factor, which defines orientation toward the future, while items 1, 3, 8, 9, 10, 12, 13, 14, 15, 17 and 19 were loaded on the second factor, which defines orientation toward the present. With respect to the work by D'Alessio et al. (2003), this sample of adolescents appears to lack any distinction between a hedonistic orientation toward the present and a fatalistic one. In the same article, the authors point out that for the third component (related to the Fatalistic Present) they did not obtain a high reliability coefficient and that the scale included only five elements.

In our case, instead, it was impossible to make a distinction between the two different present orientations, not only because of the number of dimensions emerging from factor analysis, but also with respect to the meaning of items composing the scale.

In the first dimension, among items with factor loadings over .30, we find items number 11 and 16 which, instead, should refer to the Hedonistic Present orientation, according to the analysis by D'Alessio et al. (2003). We will examine this aspect further, hypothesizing the cause

TABLE 3  
 Rotated matrix of components: Principal components, Varimax rotation  
 (Italian version in brackets)

		Component	
		1	2
1	I believe that getting together with one's friends to party is one of life's important pleasures [Riunirsi con gli amici e festeggiare è uno dei piaceri più importanti della vita]		.377
2	I believe that a person's day should be planned ahead each morning [Ogni mattina si dovrebbe fare il piano della propria giornata]	.521	
3	If things don't get done on time, I don't worry about it [Se le cose non vengono fatte in tempo non mi preoccupo]		.421
4	It gives me pleasure to think about my future [Mi piace pensare al futuro]	.542	
5	When I want to achieve something, I set goals and consider specific means for reaching those goals [Quando voglio ottenere qualcosa, mi pongo degli obiettivi e valuto i mezzi adatti a raggiungerli]	.634	
6	Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play [Rispettare le scadenze di domani e concludere tutto il lavoro viene prima del divertimento di stasera]	.660	
7	I believe that my future is beautiful and well planned [Il mio futuro mi sembra bello e ben tracciato]	.513	
8	I try to live my life as fully as possible one day at a time [Cerco di vivere giorno per giorno]		.553
9	It doesn't make sense to worry about the future since there is nothing to do about it anyway [È inutile fare progetti a lunga scadenza perché le cose difficilmente vengono nel modo programmato]		.467
10	When I have money I like playing and betting [Quando ho dei soldi in più mi diverto a giocare o a scommettere]		.322
11	It upsets me to be late for appointments [Mi dà molto fastidio essere in ritardo agli appuntamenti]	.485	
12	I do things impulsively and I take decisions at the moment [Faccio le cose impulsivamente prendendo decisioni al momento]		.674
13	I feel that it's more important to enjoy what you're doing than to get work done on time [È più importante che mi piaccia quello che sto facendo che finire il lavoro in tempo]		.571
14	I don't make things that are important for me in the future, if I don't like them now [Non faccio le cose che saranno utili per me se non mi piacciono ora]		.566
15	I'm inclined to lose my self-control if someone provokes me [Quando qualcuno mi provoca tendo a perdere il controllo]		.474
16	It upsets me when people are late for appointments [Mi irritano le persone che arrivano in ritardo agli appuntamenti]	.364	
17	When I go to parties I get drunk [Alle feste mi ubriaco]		.544
18	I complete projects on time by making steady progress [Termino in tempo le cose facendo progressi in maniera costante]	.663	
19	I take risks to put excitement in my life [Corro dei rischi per rendere la vita eccitante]		.632
20	I make lists of things to do [Faccio le liste delle cose da fare]	.429	
21	I keep working at difficult, uninteresting tasks if they will help me get ahead [Mi applico molto su un compito difficile e noioso se so che mi aiuterà a progredire]	.625	
22	I am able to resist temptations when I know that there is work to be done [Riesco a resistere alle tentazioni quando so che c'è lavoro da fare]	.550	

of the discrepancy, in discussing the nature of our sample in relation to the two items involved. Therefore, excluding items 11 and 16, we calculated the reliability for the two scales (Present and Future). Cronbach's alpha for the scale defining orientation toward the future was .77, which was satisfactory, and did not improve when, one by one, each of the nine items was excluded from the scale. Alpha was also adequate for the scale related to orientation toward the present: .73; in this case, analogously, alpha did not improve by excluding one by one each of the 11 items making up the scale. Item-scale correlations ranged from .36 to .54 for future orientation and from .22 to .52 for present orientation. Overall, the results of reliability analysis were more than satisfactory in terms of internal consistency. Table 4 sums up the results of factor analysis and reliability analysis.

TABLE 4  
 STPI factor loadings and Cronbach's alphas for the two dimensions (Varimax rotation)

Variables	Future	Present
18	.663	
6	.660	
5	.634	
21	.625	
22	.550	
4	.542	
2	.521	
7	.513	
20	.429	
12		.674
19		.632
13		.571
14		.566
8		.553
17		.544
15		.474
9		.467
3		.421
1		.377
10		.322
mean score	29.170	32.250
SD	5.723	6.492
Cronbach's alpha	.770	.730

*Note.* The numbers of variables refer to the items reported in Table 3.

Since items 1 and 10 showed the smallest factor loadings and item-scale correlations, we calculated the reliability coefficient for the Present scale without these latter two items, in order to obtain a more essential instrument. In this case, reliability was .72; so, with only nine items, alpha was similar to the preceding one (.73).

Based on these considerations, the analyses reported below took into account the Present scale, composed of nine items, with no important loss in terms of significance. We tested for the presence of differences between the two scales relative to the respondents' gender and age.

First, by applying the Mann-Whitney U Test, we found that females in this sub-population

were more future-oriented with respect to males (Table 5). This result differs from those found in other surveys, targeting the general population, such as the one performed by D'Alessio et al. (2003), who found no sex-related difference for the Future scale; and by Gonzales and Zimbardo (1985), who found male participants to be more future-oriented. The situation is different for the Present scale, in which male adolescents predominate over females. In this case, however, we have no reliable term of comparison, given the nature of the scale, which makes no distinction between hedonistic present and fatalistic present.

TABLE 5  
 Mann-Whitney U Test for the two scales, relative to gender

	Gender	N	Mean rank	Sum of ranks	Mann-Whitney U	Two-tailed asymptotic significance
Future	Female	744	826.37	614819.00	237433.00	$p < .001$
	Male	773	694.16	536584.00		
Present	Female	744	727.24	541068.50	263928.50	$p = .006$
	Male	773	789.57	610334.50		

Instead, as regards the age variable, we used the Kruskal-Wallis test, which revealed significant differences in orientation toward the present (Table 6) and no important difference in orientation toward the future. Concerning orientation toward the present, the values of average ranks seem to increase with age, although no linear trend emerged.

TABLE 6  
 Kruskal-Wallis test for the two scales, relative to age

	Age	N	Mean rank	$\chi^2$	Asymptotic significance (4 df)
Future	15	295	765.00	1.786	<i>ns</i>
	16	280	778.74		
	17	305	768.93		
	18	318	736.57		
	19	319	748.99		
Present	15	295	692.23	12.648	$p < .02$
	16	280	774.55		
	17	305	739.70		
	18	318	810.78		
	19	319	773.93		

However, given the minimum value shown on the Present scale for 15 year old adolescents, it would be interesting to make a later comparison using the ANOVA procedure, not applicable here because data are not normally distributed. Therefore, we performed pairwise multiple comparisons between fifteen-year-olds and the four other groups, using the Mann-Whitney Test to evaluate the reliability of single comparisons at a level of 0.0125 (Bonferroni correction). The only comparison which proved significant was that between individuals aged 15 and those aged 18.<sup>6</sup> Therefore, we did not find any interpretable pattern of age-related difference emerging from orientation toward the present.

## CONCLUSIONS

Validation of the STPI applied to the Italian adolescent population has revealed the presence of several important differences with respect to the preceding validation, carried out by D'Alessio et al. (2003) using a national sample ranging in age from 16 to 89 years. First of all, a certain degree of disparity emerged between the adolescent group and the population as a whole, especially as regards the lack of distinction between the hedonistic present and the fatalistic present orientation. Factor analysis, in fact, revealed the presence of only two dimensions, pertinent respectively to the future and to the present in general.

Adolescents' relationship with the present does not appear as being perceived in a hedonistic or fatalistic way, but as flattened into a single dimension in which the lack of trust in the future, or, rather, in the possibility to influence causally one's future (one's personal history), makes way for concepts linked to fortune and fate. At the same time, this misgiving leads the individual to pursue immediate pleasures to the detriment of commitment in work or other activities not directly linked to pleasure.

Within the adolescent population, there remains for some individuals a firm tie with the future; or perhaps we should say, a way of functioning according to a plan which sees them committed to thinking about their future and to putting off the immediate satisfaction of their drives in order to achieve results that will improve their condition. We should emphasize that the definition of future used by the scale does not convey any sense of a *remote* future; therefore, the young respondents could interpret it as a time distant from today from a subjective point of view; they could view the "future" as being quite near the present.

As regards more specific differences, referring to single items, in the final formulation of our scale we chose to exclude items 11 and 16 which, intended by the authors for the scale of hedonistic present, emerged, instead, on the Future scale. The items are "It upsets me to be late for appointments" and "It upsets me when people are late for appointments," two statements linked to the ideal of punctuality, a dimension which clearly does not delimit the present as it is seen today by young people, but rather seems to underlie self-respect and a will to organize modes of action among those who invest in the future. Moreover, we chose to exclude items 1 ("I believe that getting together with one's friends to party is one of life's important pleasures") and 10 ("When I have money I like playing and betting"), which did not attain a value of unequivocal relevance. The two items, in fact, for different reasons, do not seem capable of distinguishing among young people: the first seems quite acceptable both by those oriented toward the future and by those oriented toward the present, while the second appears to connote an area of depend-

ency, or one at risk of dependency, with respect to which it is rarely possible to gain coherent responses in this age range.

Based on the analyses made, in particular on reliability analysis, the items in the version further reduced seem to be capable of distinguishing between young Italians' orientation toward the present and toward the future.

We also noted the presence of significant gender-linked differences in the sample which reveal a marked orientation toward the present, among males, and toward the future, among females. This finding is not surprising, for various observers have noted a greater widespread capacity, but also necessity, among women, for investing in their person and for self-determination, leading them to deal with the planning and definition of their future, and to confront both biological factors (e.g., maternity) and socio-economic factors (e.g., entrance into the world of employment, conciliation between family and work) (Leccardi, 2009; Nowotny, 1987).

In light of the results obtained, alongside the structuring of an STPI scale for young people (aged 15-19), we also note the emerging of two specific biographical patterns. The first one concerns the young people who are oriented to the present. In this historical moment marked by severe instability and uncertainty toward the future, these young people seem incapable of finding direction, space for planning their future, and so they live the present both in a fatalistic and an edonistic way: since they believe that nothing can be determined by the individual action but only by casual events or, in any case, not by present events, they react orienting themselves toward the pursuit of immediate gratification and pleasure. The second group of young people, the ones oriented to the future, appears capable of planning one's life according to goals, and putting off certain pleasures until the pursued goals are reached. It may be that these young people have cut the future up into fragments, like a present extended (Nowotny, 1987). This new vision of future may allow them to plan, and then re-plan, whenever a short-term goal has been reached; the new future seems to be a visible, limited, horizon where they may find space to settle, to program, and to act on the basis of limited projects and objectives.

Some limits of the study need to be mentioned. First of all, a short form of STPI has been used, so it is not possible to determinate the influence of past orientation on young people's life projects. Additionally, it was possible to study only the scale dimensionality; this means that future research should go deeper in the analysis of the construct validity. For instance it would be interesting to investigate the relationship between time orientation and some addictions, like smoking, drinking alcohol, and using drugs, or using Internet and video games, or other pathological/deviant behaviors.

#### NOTES

1. Created by Zimbardo and Boyd (1999) and adapted in the Italian version by D'Alessio, Guarino, De Pascalis, and Zimbardo (2003).
2. Analytical data by age and gender were taken from ISTAT site <http://demo.istat.it/index.html>.
3. The primary aim of the PACT project was to study the opinions of young people regarding the "post-carbon society" as presented by the site <http://www.cityrights.eu/> and by the *Italian Journal of Sociology of Education*, 9(3).
4. For example, Bryant and Yarnold (1995) recommend applying the STV ratio, that is, the relation between individuals and variables, which should not be lower than 5. In this study the ratio is 68.95.
5. The MAP test focuses on those parts of systematic and nonsystematic variance which remain in a correlation matrix after the extraction of the components. The optimal number of components is given by the number of steps revealing the lowest average squared partial correlation. O'Connor (2000) also recom-

- mends carrying out a parallel analysis to determine the optimal number of factors which in any case, according to available data, suggests a presence of five factors. This result seems deceptive, based on the literature discussing the short-form STPI.
6. The comparison between fifteen-year-old and nineteen-year-old adolescents was significant at a level of  $p = .015$ ; however, this is not sufficient, given the Bonferroni correction applied.

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