

The Relationship Between Attitude Toward Time and the Presence of Meaning in Life

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Abstract The presented study was concerned with the relation between attitude toward time and the presence of meaning in life. Attitude toward time consists of temporal orientation and perception of time expressed through temporal metaphors. A group of 120 respondents took part in the study. They represented two groups: high school students in their final year, in the adolescence period ($N=60$, mean age = 18), and university students in their final year, in the young adulthood period ($N=60$, mean age = 24); both groups may be regarded as being at the turning point of their life, with important decisions concerning their future to be made. It was expected that the more positive attitude toward time was, the higher the experience of meaning in life would be. It was also hypothesized that the dimensions of attitude toward time would be determinants of the presence of meaning in life. To verify those assumptions, correlation and regression analyses were computed. As predicted, the more extended the time perspective was, the higher meaning in life people experienced. There was also a positive correlation between meaning in life and temporal organization of behavior (telicity, planning, detailness, and use of time). Furthermore, the perception of time as friendly correlated positively with meaning in life, and the perception of time as hostile revealed the opposite pattern. Some differences were also found regarding correlations with age. Young adults experienced greater meaning in life; their time perspective was more extended and better organized. Adolescents suffered from greater pressure of time and perceived their time in a more negative way than young adults did. The most significant predictors of the presence of meaning in life were low pressure of time, low hostile time, and high friendly time.

Keywords Time Perspective, Temporal Organization of Behavior, Temporal Metaphors, Meaning in Life

1. Introduction

On the basis of the literature as well as observation, an interesting conclusion may be drawn: namely, that under similar conditions – even the most humiliating[1] – some people still perceive their life as meaningful whereas others feel deprived of meaning in life. This may indicate that there are some personal characteristics that help to sustain meaning in life. For example, the association between meaning in life and personality traits such as Extraversion, Agreeableness, Conscientiousness, and Openness to Experience has been investigated (e.g.[2, 3]). Personality has been related to a particular source of meaning in life[4]. Other studies point out that those who scored higher on hope and optimism experienced more meaning in their life (e.g.[5-6]). Furthermore, some reports attest to the link between meaning in life and positive affect[7], self-esteem[8], or self-actualization[9]. In the literature, there have also been indications that future time perspective varied between groups with different levels of meaning in life (e.g.[10, 11]).

Even those preliminary reports consistently encourage to

search for more indicators of meaning in life; some of them have already demonstrated the relation between meaning in life and temporal dimensions. The purpose of the present research was to analyze this relation further and more profoundly.

2. Definitional Issues of Meaning in Life (ML)

There is an abundance of definitions of meaning in life, ranging from coherence of life and sense of fulfillment[12], self-actualization[13], goal directedness or sense of purpose[14] to authentic living[15]. Some researchers argue that purpose and meaning in life are separate constructs, while others point out that purpose is a subdimension of meaning in life (e.g.[16]). According to Frankl[cf. 1], meaning and purpose can be used interchangeably. According to Baumeister[17], fulfilling four psychological needs: purpose, value, efficacy, and self-worth, is a prerequisite for the experience of meaning in life. Several investigations indicate the link between meaning in life and well-being (e.g.[7,18,19]) or quality of life([20,21]). Zika and Chamberlain[22] indicate that meaning in life reflects strife for goals and search for purpose in life, and that these are its distinctive features. Meaning in life has been regarded as a

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facilitator of adaptive coping[23] and was found to be connected to health and productive behaviors[16].

Some of the authors distinguish two distinct aspects of meaning in life: the static dimension, referred to as *presence of meaning*, and the dynamic one, *search for meaning* (e.g.[8]). Frankl[1] distinguishes between search for meaning and meaning as something one can discover, experience, or endow life with. Those who report the presence of meaning, unlike those who are searching for meaning, are considered to be satisfied with their life; they comprehend the world, understand themselves, and are self-fulfilled[11]. Those who score high on search for meaning are more negatively past-oriented as well as more fatalistic and present-oriented; surprisingly, they are not concentrated on the future and are more ruminative. As other findings show, those who experience greater meaning in life are less depressed and anxious[8] and more satisfied with their life regardless of their life stage[12]. The perception of meaning in life's difficulties was found to be of paramount importance to positive functioning (e.g.[24]).

Meaning in life is directly connected with subjective and individual experience. It integrates the individual internally and motivates them "towards" life; indirectly, it is determined by the individual's personality structure as well as by their personal goals and strivings. It is characterized by individualized development and high stability and constitutes the deepest force motivating existence[25]. Those who understand themselves and the world, those who have found their *niche* in the world, comprehend and fulfill their own role, set themselves stable goals, and realize their potential may experience the presence of meaning[26].

2.1. The Significance of Temporal Orientation to Meaning in Life

On the basis of many findings, it may be concluded that temporality is a valuable determinant of the quality of human life, goal-oriented strivings, and meaning in life (e.g.[27,28]). All potentialities, plans, and intentions are realized within time; it is also within time that the human being strives to satisfy the need for meaning in life and experiences that meaning. Temporality is a basic dimension of the individuals' life-span development (e.g.[29-32]).

An appropriate attitude toward time may ensure proper functioning and effectiveness in action, and thus either strengthen or weaken the sense of meaning in life. Zimbardo ([33], p. 62) presumes that "in an optimally balanced time perspective, the past, present and future components blend and flexibly engage, depending on a situation's demands and our needs and values." A balanced time perspective contributes to goal achievement by giving a sufficient amount of energy to undertake an action. The past, the present, and the future are then integrated in the present life space ([31,34,35]). Such a time perspective is highly motivating and positively correlated with a high level of life satisfaction. Finally, it strengthens our identity and allows to derive pleasure from everyday activity. Drake, Duncan, Sutherland,

Abernethy, and Henry[36] investigated the relationship between time perspective, happiness, and mindfulness. Based on the examination of 260 Scottish participants, it was established that individuals with a balanced time perspective were significantly happier and more mindful than others. Webster[37] claims that those individuals whose results were above the median on both the past and the future reported higher happiness, well-being, and self-esteem. Their scores were labeled as *time expansive*, a construct equivalent to that of balanced time perspective. In another study, those who were more open to new possibilities were found to be characterized by higher well-being, to feel more purpose in their life, and to have a less fatalistic attitude toward it[38]. According to Klamut[39] the individual's goals (e.g. family-related, spiritual, educational, vocational, or economic) have a significant impact on the strength of their sense of meaning in life. Also Sobol-Kwapinska[40] reports that those who are actively concentrated on the present perceive their life as more purposeful as well as experience more positive emotions and fewer negative ones. Additionally, fatalistic present-orientation contributes to a lower sense of meaning in life, a greater frequency of negative emotions, and a smaller frequency of positive ones. A similar pattern in a group of men was revealed concerning hedonistic perspective on the present. Covas[41] examined the relationship between resiliency, the sense of purpose in life, optimism, and time perspective. With regard to resiliency, two groups were distinguished among adolescents: 50 resilient and 50 non-resilient individuals. It was found that the two groups were similar with regard to the levels of optimism and sense of purpose in life. There were differences regarding time perspective. The resilient adolescents were more future-oriented, whereas the non-resilient ones had a negative perspective on the past.

Based on the findings mentioned above, it may be concluded that there is a linkage between time perspective and meaning in life.

2.2. Temporal Organization of Behavior and Meaning in Life

Numerous empirical studies have shown that goals, goal importance, goal content, and the degree of goal achievement are important predictors of life satisfaction and thus increase the sense of meaning in life[42]. According to Csikszentmihalyi[43], life satisfaction depends on the degree of goal achievement. This state is connected with those achievements that contribute to the development of personality and occurs when the person puts effort into the pursuit of their plans (*flow*). Happiness results from the satisfaction of needs and the achievement of goals set for oneself ([44]). Seligman[45] stresses that life is more complete and happier if it is committed to the pursuit of a goal that reaches beyond the person and allows them to use their assets to the benefit of others. Proper organization of behavior allows to undertake effort only when a given action brings the subject a sense of satisfaction and self-efficacy in the end[46], which

may translate into higher meaning in life.

As Bond and Feather[47] indicate, a person's sense of purpose and structure in daily life play a key role. They found positive correlations between Time Structure Questionnaire (TSQ) total scores and the sense of purpose in life, self-esteem, health, present standing, optimism about the future, and Type A behavior. By contrast, there was a negative correlation between TSQ and depression, hopelessness, anxiety, neuroticism, psychological distress, physical symptoms, and anomie.

3. Procedure and Methods

The main aim of the study was to examine the relationship between attitude toward time and the presence of meaning in life. Also analyzed were relationships between attitude toward time and meaning in life on the one hand and sex and age on the other. Attitude toward time was understood as comprising temporal orientation and time perception expressed through temporal metaphors. Temporal orientation in turn was seen as composed of time perspective and temporal organization of behavior[48]. Similar research had been conducted before, but the novelty of this study lies in its participants belonging to age groups that represent a peculiar period in life, marked by numerous changes, important decisions, and transition from the system of education to the labor market. As people belonging to these age groups are approaching the completion of secondary or higher education, they are faced with many important decisions that entail taking on new responsibilities, roles, and duties. These new dilemmas may endanger or strengthen their sense of meaning in life[49]. Another distinctive feature of the present study is the operationalization of meaning in life. The method most often used before is the Purpose in Life Test (PIL)[50]. The method used in this case takes into account the temporal dimension of meaning in life as well.

Based on a review of the literature on meaning in life, it was expected that (1) persons with positive temporal orientation would experience higher presence of meaning in life. When formulating detailed hypotheses, it was assumed that individuals with high temporal extension, spanning the full temporal perspective (the past, present, and future) would have higher meaning in life than individuals with low temporal extension. The second detailed hypothesis was that individuals with high temporal organization of behavior would experience a higher sense of meaning in life than individuals with low temporal organization of behavior. It was also assumed that (2) the presence of meaning would be higher for those who perceived time in a more positive way. Some differences with regard to sex and age were expected.

Participants and Procedure. In total, 120 Polish respondents (61 females and 59 males) took part in the study. One group consisted of 60 adolescents in their final year of high school ($M = 18$, $SD = 1.1$). The other group, labeled as young adults, consisted of 60 students in their final year of university, studying IT, mathematics, and economics. Their mean

age was 24 years ($SD = 1.4$). All participants were asked to take part in the study voluntarily. Following instructions, they completed the questionnaires. It took them about 60 minutes.

Measures. A battery of questionnaires was administered, including Noo-Dynamic Questionnaire[25], Temporal Orientation Questionnaire TOQ AION-2000[51], and Time Metaphors Questionnaire[40]. This set of measures was deliberately selected to provide data for each analyzed time dimension. These questionnaires were originally developed in Polish.

Noo-Dynamic Questionnaire[25] measures the presence of meaning in life (ML) and consists of 100 items. All items were scored on a 5-point frequency rating scale ranging from 1 (never) to 5 (always). In the presented study, the total score of the scales measuring meaning in life was considered. The internal consistency (Cronbach's alpha) was satisfactory ($\alpha = 0.72$).

Temporal Orientation Scale AION-2000[51] diagnoses dimensions of temporal orientation. It consists of 135 items divided into 8 scales: Past ($\alpha = 0.71$, 11 items), Present ($\alpha = 0.72$, 15 items), Future ($\alpha = 0.74$, 17 items), Telicity ($\alpha = 0.81$, 17 items), Planning ($\alpha = 0.82$, 16 items), Detailness ($\alpha = 0.79$, 15 items), Use of Time ($\alpha = 0.65$, 9 items), and Time Pressure ($\alpha = 0.80$, 18 items). Items are rated on a 5-point scale from 1 (not true at all) to 5 (very true). The authors also distinguished three clustering dimensions of temporal orientation factors: Temporal extension (Past, Present, Future), Temporal organization of behavior (consisting of four scales: Telicity, Planning, Detailness, and Use of Time), and Sensing time pressure (Time Pressure and Use of Time – with negative loading) (Bajcar, 2006).

Time Metaphors Questionnaire[40] measures the subjective sense of time and consists of 95 metaphors grouped into 7 scales: Friendly Time scale ($\alpha = 0.91$, 32 items) (for example "Time is the best teacher of life," "Time is a pleasure"), Hostile Time scale ($\alpha = 0.95$, 28 items) (for example "Time is somber," "Time is people's enemy"), Rapid Passage of Time scale ($\alpha = 0.88$, 10 items) (for example "Time is like a speeding car," "Time flies like an arrow"), Significance of the Moment scale ($\alpha = 0.70$, 7 items) (for example "There is not a moment to waste," "Each day is so worth living as if it were the last day of your life"), Subtle Time scale ($\alpha = 0.75$, 6 items) (for example "Time is like a cloud drifting lightly in the wind," "A moment is like a sunbeam on my face"), Wild Time scale ($\alpha = 0.78$, 7 items) (for example "Time is chaotic," "Time is a commotion"), and Empty Time scale ($\alpha = 0.65$, 5 items) (for example "Time is dull," "Time is monotony"). Responses to each of the items were recorded on a 4-point scale, with anchors ranging from 1 (very inappropriate) to 4 (very appropriate).

4. Results

As a preliminary step, the relationships between all the variables considered in the study were examined. Means, standard deviations, and intercorrelations between the variables are given in Table 1 and 2. There were several noteworthy findings regarding the descriptive statistics of the study. Past and future were found to be relevant factors that correlated with meaning in life (ML).

Additionally, dimensions of temporal organization of behavior such as telicity, planning, detailness, and use of time correlated positively with ML. As regards temporal metaphors, those who perceived time as a good and trustworthy friend experienced higher ML. Conversely, per-

ceiving time as an enemy, poison, cause of pain, or illness, as well as stressing the inevitability of death inherent in time – resulted in lower ML.

In further analysis, on the basis of median split in the ML score ($M = 3.62$), two groups (with high and low ML, respectively) were distinguished. The first group, with high ML, consisted of 28 females and 28 males. The second one, with low ML, consisted of 33 females and 31 males. In order to compare these two groups, one-way analysis of variance was computed. Table 3 shows comparisons of the two groups with different ML levels.

Table 1. Descriptive statistics, including means, standard deviations, and intercorrelations between meaning in life and time orientation dimensions ($N = 120$)

	M	SD	1	2	3	4	5	6	7	8
1. Meaning in Life	3.51	.39	-							
2. Past	38.25	5.87	.31 ^b	-						
3. Present	42.92	6.28	-.02	-.14	-					
4. Future	55.78	8.07	.39 ^c	.47 ^c	-.15	-				
5. Telicity	57.03	9.10	.41 ^c	.36 ^c	.00	.61 ^c	-			
6. Planning	50.40	8.51	.25 ^b	.21 [*]	.00	.54 ^c	.70 ^c	-		
7. Detailness	48.45	8.33	.33 ^c	.24 ^b	.08	.46 ^c	.62 ^c	.64 ^c	-	
8. Use of Time	32.25	5.42	.40 ^c	.31 ^b	.13	.44 ^c	.61 ^c	.46 ^c	.43 ^c	-
9. Time Pressure	56.74	10.43	-.17	.12	.12	.13	.26 ^b	.24 ^b	.13	.19 ^a

^a $p < .05$; ^b $p < .01$; ^c $p < .001$

Table 2. Descriptive statistics, including means, standard deviations, and intercorrelations between meaning in life and time perception dimensions ($N = 120$)

	M	SD	1	2	3	4	5	6	7
1. Meaning in Life	3.51	.39	-						
2. Friendly Time	84.99	12.72	.21 ^a	-					
3. Hostile Time	61.50	13.47	-.37 ^c	.07	-				
4. Rapid Passage of Time	26.95	6.89	.00	.12	.31 ^a	-			
5. Significance of the Moment	21.32	4.01	.16	.37 ^c	-.07	.51 ^c	-		
6. Subtle Time	15.60	3.37	.16	.50 ^c	.04	.23 ^a	.37 ^c	-	
7. Wild Time	16.86	3.64	-.17	.17	.27 ^b	.41 ^c	.24 ^a	.25 ^b	-
8. Empty Time	9.99	3.60	-.17	.17	.20 ^a	-.18	-.26 ^b	.24 ^b	.01

^a $p < .05$; ^b $p < .01$; ^c $p < .001$

Table 3. The results of one-way analysis of variance for temporal orientation and time perception in a group with high ML ($n = 56$) and in a group with low ML ($n = 64$)

	Meaning in Life					
	High $n = 56$		Low $n = 64$			
	M	SD	M	SD	F $df = 118$	p
Past	40.31	4.62	36.27	5.18	12.88	.001
Present	42.75	5.88	42.61	5.84	.011	.917
Future	60.36	7.03	52.63	6.92	23.56	.000
Telicity	62.44	8.96	53.44	7.58	22.80	.000
Planning	54.11	8.96	48.76	7.73	8.21	.005
Detailness	52.67	6.08	45.66	5.85	26.53	.057
Use of Time	34.78	5.49	29.54	4.80	3.43	.000
Time Pressure	52.44	10.88	56.71	9.57	3.34	.071
Friendly Time	86.66	11.82	83.53	13.37	1.82	.180
Hostile Time	56.80	11.87	65.60	13.52	14.17	.000
Rapid Passage of Time	25.56	6.81	26.15	6.66	.15	.972
Significance of the Moment	21.94	4.29	20.78	3.68	2.55	.113
Subtle Time	16.17	3.18	15.10	3.47	3.06	.083
Wild Time	15.67	3.27	17.02	3.72	4.92	.028
Empty Time	9.41	3.98	10.50	3.18	2.76	.099

^a $p < .05$; ^b $p < .01$; ^c $p < .001$

Table 4. The results of one-way analysis of variance for attitude toward time and meaning in life in a group of adolescents ($n = 60$) and in a group of young adults ($n = 60$)

	Age					
	Adolescents $n = 60$		Young adults $n = 60$			
	M	SD	M	SD	F $df = 118$	p
Meaning in Life	3.47	.38	3.76	.36	13.53	.000
Past	36.63	5.87	40.13	5.28	1.39	.000
Present	43.60	6.26	42.25	6.29	12.09	.000
Future	53.33	5.99	58.23	9.12	5.13	.241
Telicity	55.18	8.69	58.88	9.20	.89	.001
Planning	49.67	7.64	51.13	9.31	3.33	.025
Detailness	47.08	7.64	49.83	9.34	13.10	.347
Use of Time	30.60	5.44	33.90	4.50	2.43	.070
Time Pressure	58.22	10.29	55.27	10.44	13.53	.000
Friendly Time	83.35	9.69	86.63	6.65	2.01	.158
Hostile Time	66.03	4.71	56.96	4.42	15.21	.000
Rapid Passage of Time	28.05	6.53	25.87	7.13	3.06	.083
Significance of the Moment	20.38	3.79	22.27	4.04	6.94	.010
Subtle Time	14.78	3.58	16.43	2.96	7.58	.007
Wild Time	17.03	4.35	16.70	2.81	.25	.619
Empty Time	9.53	3.90	10.45	3.25	1.95	.165

^a $p < .05$; ^b $p < .01$; ^c $p < .001$

Table 5. Parameters of regression analysis (Beta, B, standard error B), as well as t and p values for temporal orientation ($N = 120$)

Variables	Beta	B	St. error	t	p
Past	.127	.008	.006	1.412	.160
Present	.022	.001	.005	.268	.788
Future	.142	.006	.005	1.313	.191
Telicity	.259	.010	.006	1.955	.053
Planning	.125	.006	.005	1.042	.299
Detailness	.108	.005	.004	1.004	.317
Use of Time	.199	.014	.007	1.978	.050
Time Pressure	-.301	-.011	.003	-3.704	.000

$R = .581$; $R^2 = .29$; $F(8.111) = 7.0804$; $p < .000$

Table 6. Parameters of regression analysis (Beta, B, standard error B), as well as t and p values for perception of time ($N = 120$)

Variables	Beta	B	St. error	t	p
Friendly Time	.222	.006	.003	2.211	.029
Hostile Time	-.324	-.009	.002	-3.437	.000
Rapid Passage of Time	.086	.004	.006	.794	.428
Significance of the Moment	-.077	-.007	.011	-.670	.503
Subtle Time	.162	.018	.012	1.574	.118
Wild Time	-.120	-.012	.010	-1.222	.224
Empty Time	-.177	-.018	.010	-1.853	.066

$R = .487$; $R^2 = .19$; $F(7.112) = 4.987$; $p < .000$

The group with higher ML concentrated on the past and on the future to a greater extent than the other group did. It may be concluded that they regarded their past as more positive and that they also thought and acted with the future in mind. The hypothesis regarding temporal extension was partly supported, but no difference between the two groups was found for present temporal dimension. The members of the group with higher ML had more aims in their life (telicity) than those who scored lower on ML. What is more, they used time more effectively and had a tendency to engage in more meticulous planning of their activities. Two other tendencies are worth mentioning: the group with higher ML felt less

pressure of time in comparison with the group with lower ML and attached more importance to particulars in their performance (detailness). As had been assumed, temporal organization of behavior was an indicator of meaning in life. As regards time perception, the group with higher ML scored lower on hostile and wild time metaphors.

As the next step, the whole sample was divided into two age groups: those in the final year of their high school (adolescents) and those in the final year of their study (young adults). The results are presented in Table 4.

Young adults scored higher on meaning in life, referred to the past much more often than adolescents did, and showed much greater concentration on the future. In addition, young adults showed considerably more effective organization and use of time and set themselves more goals to achieve (telicity). The difference between the two groups on the detailness dimension was on the borderline of significance. The scores on other aspects of temporal orientation structure were similar for the two groups. In reference to perception of time, the group of university students scored higher on significance of the moment and on subtlety; they also perceived time as less hostile.

No significant difference in the perception of time was found between women and men. Only in the case of the perception of time in terms of hostile time metaphors we may speak of a certain tendency ($F_{(1,118)} = 3.87$, $p = .051$). Men scored higher on this dimension; they perceived time as more deceitful, cruel, and out of control.

In order to examine the relative contribution of temporal orientation and perception of time to the presence of ML, regression analysis was computed. First, as Table 5 shows, only pressure of time was significant for predicting ML. All the variables included in the regression explained 33% of all variance in ML [$F(8.111) = 7.0804$; $p < .000$]. Telicity and use of time were also on the borderline of significance as predictors of ML. Telicity and use of time were also on the

borderline of significance as predictors of ML. Parameters of regression analysis for time metaphors are set in Table 6. Of all the variables, only friendly and hostile time were significant for predicting ML. All the variables included in the regression explained almost 24% of all variance in ML [$F(7,112) = 4.987; p < .000$]. Empty time was also on the borderline of significance as a predictor of ML.

5. Discussion

The main aim of the presented study was to examine the relationship between meaning in life and attitude toward time, the latter consisting of time perspective and perception of time. The study falls within the constantly growing field of positive psychology [52,53], where there has been a surge of interest in finding ways of making life happier, more satisfying, and more fulfilled, as well as in learning how to experience more purpose in life. The concept of meaning in life has become part of a good, authentic and happy life ([54-56]); it has also become a question of time perspective, which is a key factor in achieving success in all life domains, which in turn results in life satisfaction [57].

The study provided strong conclusions about the role of temporal variables in the presence of meaning in life at the specific stages of human development – namely, at the stages of the adolescence and young adulthood. The study conducted allows to conclude that meaning in life manifests itself in an extensive and well-developed time perspective, rooted in the past and stretching far into the future (e.g. [58-61]). The results showed similar relationships: namely, positive perception of the past and the future translates into greater happiness and higher self-esteem [62].

A higher level of meaning in life correlated with better temporal organization of behavior, i.e. the ability to plan one's actions, achieve goals, and take proper advantage of the effects obtained. The results obtained are in keeping with the eudaimonic approach, according to which the fulfillment of potentialities, the possession of goals, and effective action endow our life with meaning and are the source of positive emotions to a greater degree than short-term pleasures or material goods are ([45,63]). Pursuing a goal gives human life a certain structure and meaning (e.g. [64-67]). Zaleski, Cycon, and Kurc [68] demonstrated that, in comparison with adolescents, young adults had more long-term goals, which in turn positively influenced the quality of their life; that might also serve as an argument supporting the results of this study. Time perspective was a factor of paramount importance for adolescents in planning their careers and setting vocational goals [69]. Also the perception of time as less negative was conducive to a greater sense of meaning in life. Lower time pressure and a more positive attitude toward time turned out to be positive predictors of meaning in life. Perceiving time as a good and trusted friend as well as perceiving fewer hostile elements strengthened the sense of meaning in life, which accords with earlier findings

(e.g. [70,71]). Generally, time perception is an important factor in experiencing meaning in life (e.g. [72]).

What is interesting is that no significant differences in the results were found between the sexes (cf. [48]). This might be due to the specific character of the group or testify to a growth of egalitarianism. Self-actualization as well as success in professional and private life are becoming the goals of contemporary strivings, equally important for men and for women.

When it comes to differences with regard to age, it turned out that young adults experienced higher meaning in life compared to adolescents, had a more extensive temporal perspective, showed better temporal organization of behavior, and perceived time more positively. These differences may be connected with the developmental stage of each group, with the roles undertaken by its members, and with the fact that high-school students still have a smaller store of experience and behavior patterns to draw on. High-school students are still going through the adolescence crisis, and perhaps not all of them have managed to establish their own identity yet; they are only entering the period of early adulthood. This may translate into a certain indecision or difficulties in the selection of goals and the organization of tasks as well as constitute an impediment to optimal action using their own potential. University students already have a more fully formed identity, have made certain choices in life, and are either preparing to perform or already performing new social roles connected with the choice of profession or starting their own family [73]. The performance of these roles and tasks gives the individual a sense of self-efficacy and satisfaction from life. As the literature shows, temporal perspective changes with age, and so does the content and hierarchy of goals (e.g. [74,75]).

Limitations and Future Research Directions

Some important limitations of this study must be addressed and some future directions ought to be outlined. The study was based on pencil and paper questionnaires, and these subjective measures raise doubts about the participants' understanding of the questions and about what their concept of meaning in life really was. Even though two groups were compared, the age gap between them was not adequately large; for this reason, it would be difficult to generalize the obtained results. The subjects were at different educational levels; however, most of them did not play any other life-role, except for being students. Anyway, the differences found in this study confirmed that comparing groups at different stages of development, e.g. middle-age and old-age groups, is a promising direction for future research. Obtaining similar results would be more supportive of the theory. What is more, future research might also concentrate on identifying the sources of meaning in life and on establishing whether there are any differences between groups of participants with regard to the relations presented above; that would give a more complete insight into this concept. It would also be interesting to make some cross-cultural comparisons. The research here presented is limited to a particular place along

with its social and cultural factors.

In conclusion, the findings of the present study might be applicable to the fields of education or consultancy, where strong emphasis should be put on teaching how to manage one's time as well as how to set and achieve goals effectively. These skills may serve for preserving meaning in life, especially endangered at turning points, such as entering the adulthood period, which is connected with inevitable changes in life and involves taking up new responsibilities.

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