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How Adolescents and Emerging Adults Envision Their Future Adult Life and How it Changes During the School/ Academic Year? – Longitudinal Study

Abstract: This longitudinal study was aimed at exploring the characteristics of the vision of one's adult life in adolescents and emerging adults, and investigating changes in this vision during both the last year of secondary school and university education. In the first measurement, 299 youths aged 17 to 27 participated, and 177 took part in the second measurement. Participants were asked to write about their envisioned future adult life. Trained judges coded participants' written answers to allow for quantitative analyses and examine both the content and the structure of youth's vision of their adult life. The results indicated that youths had moderately extended and rather superficial vision of their future adult life. The most frequently represented and most comprehensively described aspects of future life included work, intimate relationships, and place of residence. In addition, gender and age-related differences were observed. In many cases, the shape of the vision of one's adult life described by youths was rooted in stereotypical patterns of gender roles. Finally, youths' vision of their adult life seemed to be somewhat unstable during the last year of education in high school and university.

Keywords: *future thinking, vision of one's adult life, adolescence, emerging adulthood*

INTRODUCTION

Prospection (future thinking) is the ability to construct representations of possible futures and may be adopted for many reasons (Hallford & D'Armentau, 2020). It is a ubiquitous feature of the human mind and the subject of rapidly growing research interest (Hallford & D'Armentau, 2020; Oettingen et al., 2018; Seligman et al., 2013). Adolescence and emerging adulthood are developmental periods when thinking about the future becomes more important, frequent, and detailed than earlier (Erikson, 2004; Gott & Lah, 2013; Inhelder & Piaget, 1970; Steinberg et al., 2009). Accordingly, future thinking is crucial for adolescents' and emerging adults' daily lives, as also their significant life decisions (Arnett, 2014; Schacter et al., 2017), well-being (King,

2001; Sheldon & Kasser, 1998), identity and personality development (Dunkel & Anthis, 2001; Janowicz et al., 2024; Kvasková et al., 2022; Skhirtladze et al., 2021), promoting proactive behaviors (Corte et al., 2020; Oettingen, 2012; Schacter et al., 2017; Szpunar et al., 2014), and school achievements (Oyserman et al., 2006). Additionally, future thinking is also claimed as important during the transition moments in youths' life (Erikson, 2004; Grosz, 1999; Hardgrove et al., 2015; Worth, 2009).

One of the most frequently investigated types of future-related thoughts are possible selves, which are mental representations of the self in the future and may refer to both desired (hoped) future selves and those undesired (feared) (Markus & Nurius, 1986). While for adolescents and emerging adults many options for their future life seem to be possible (Arnett, 2014; Dunkel,



2000), little is known about how they perceive *the most possible* scenario for their future life. Accordingly, to bridge this gap, we have conducted a longitudinal study investigating adolescents' and emerging adults' *the most possible self* and changes within it during the last year of secondary school/ master's degree.

As *the most possible self* is a mental simulation (Szpunar et al., 2014), and in our research, it refers to the anticipated scenario of someone's future adult life, we propose to name it '*vision of one's adult life*' (VOAL; citation blinded for review). It relates to the questions: *Who am I going to be? How will my life look in adulthood?* (citation blinded for review). The VOAL is an example of semantic (Atance & O'Neill, 2001) and anticipating (Katra, 2008) future thinking. It may be understood as a non-specific mental simulation of the personal future adult life (Szpunar et al., 2014) based on the predictions about the possibility of various scenarios for the future life (Szpunar et al., 2014). As far as we know, our study was the first one exploring this phenomenon in such a comprehensive and also longitudinal way.

Future thinking in adolescence and emerging adulthood

Thinking about the personal future is a challenging task for adolescents and emerging adults (Carabelli & Lyon, 2016; Worth, 2009). For example, up to 20-40% of Polish adolescents and emerging adults struggle with formulating life goals and plans (Czerwińska-Jasiewicz, 2005; Katra, 2008; Timoszyk-Tomczak, 2010). Similarly, about 20% of English young men participating in the study conducted by Hardgrove et al. (2015) expressed vague or non-existent occupational possible selves. In addition, the plans that are formulated by young people usually are not very detailed, especially those referring to the distant future (Czerwińska-Jasiewicz, 2005; Katra, 2008). What is more, for young adults, it is usually difficult to combine plans referring to various areas of life (Shulman & Connolly, 2013).

For adolescents and emerging adults, the most important life goals and plans are usually related to occupational, educational and relational domains (Czerwińska-Jasiewicz, 2005; Katra, 2008; Keshavarzi et al., 2022; Kvasková et al., 2022; Liberska, 2004; Roberts, & Robins, 2000; Salmela-Aro, & Nurmi, 1997; Timoszyk-Tomczak, 2010). Young people's desires are often focused on graduating from school (or higher levels of education), finding an interesting and well-paid job, being in a satisfying romantic relationship and living in line with personal values. Interestingly, Millennials young adults, in comparison to Boomers, more often have goals focused on financial wealth and less often those referring to developing a meaningful philosophy of life (Twenge et al., 2012). As mental simulations are rooted in goals and plans (Szpunar et al., 2014), it may be expected that the vision of one's adult life in adolescents and emerging adults also will usually refer to job, education, and intimate relationships.

Most studies on gender differences in the content of the future-related thoughts suggest that in adolescence and emerging adulthood women tend to have more often life goals referring to romantic relationships, marriage, having children, and family (Czerwińska-Jasiewicz, 2005; Greene & DeBacker, 2004; Janowicz, 2018; Keshavarzi et al., 2022; Liberska, 2004; Salmela-Aro et al., 2007), while men those referring to financial status and job (Czerwińska-Jasiewicz, 2005). Accordingly, it may be predicted that other areas of life will be presented in the vision of one's adult life possessed by women and men in emerging adulthood. The abovementioned findings suggest that women's VOAL will be more often focused on family life, romantic relationships and parenthood, while men's VOAL on job and financial success.

Another group of studies examined age-related differences in future thinking. For example, Czerwińska-Jasiewicz's (2005) and Liberska's (2004) research shown that people in early adolescence have more problems with setting life goals and elaborating on them than those in late adolescence. Findings from a study conducted by Salmela-Aro et al. (2007) indicate that older emerging adults have more work and family-related goals and less friendship-related goals than younger emerging adults. In line with the presented result of former studies, it may be expected that age will be positively correlated with the extension and detailedness of the VOAL in emerging adulthood.

The role of mental predictions and simulations in adolescence and emerging adulthood

While many studies investigated youths' goals and plans, knowledge about their predictions and simulations referring to the future is limited. It seems surprising, as these modes of future thinking are also important both for short-term issues and very distant future (Szpunar et al., 2014). For youths, the ability to simulate the possible states of the future and estimate the likelihood of future events is essential and may help them to maintain, change, or stop their current activity and also start a new one (Katra, 2008; Schacter et al., 2017; Szpunar et al., 2014). Noteworthy, many youths have very idealistic and unrealistically optimistic predictions about their future (Inhelder & Piaget, 1970; Weinstein, 1980), which sometimes may be adaptive but may also result in various adverse consequences (Jefferson et al., 2017; Oettingen, 2012).

The majority of studies on mental simulations of the future self are rooted in the concept of *possible selves* (Markus & Nurius, 1986). Some studies (Dunkel, 2000; Dunkel & Anthis, 2001) revealed that the number and the type of generated possible selves are related to identity development in emerging adulthood. Another beneficial aspect of generating possible selves (especially those perceived as highly possible to achieve) is the lower level of health-risk behaviors and a higher level of health-promoting behaviors (Corte et al., 2020). Developing possible selves may also result in better academic achievements (Oyersman et al., 2006). It was also suggested (Bak, 2015) that interventions using the possible selves paradigm may

be useful in psychotherapy. While there is an increasing body of literature on possible selves, as far as we know, no one has explored the phenomenon of the most possible self. Our study was designed to bridge this gap.

There are also other limitations of earlier studies on youths' future thinking. For example, most previous studies on future thinking in adolescence and emerging adulthood were dominated by those describing the content of future-related thoughts (i.e. Cuzzocrea & Mandich, 2015; Czerwińska-Jasiewicz, 2005; Hardgrove et al., 2015; Salmela-Aro et al., 2007; Timoszyk-Tomczak, 2010), while less attention has been paid to their structure and how youths subjectively perceive and experience their future-related thoughts (i.e. Dunkel, 2000; Janowicz, 2023; Kutra, 2008). Additionally, the majority of studies on future thinking in adolescents and emerging adults were cross-sectional, so we lack longitudinal research on the development of prospective thinking in youths. Thus, this research aimed to explore how adolescents and emerging adults envision their future adult life in terms of the most possible scenario of it, and how this vision changes during the last year of secondary school/ MA studies.

Research Goals

The present study had four main objectives. First, to describe the content (what is represented in the vision) and the structure (extension, detailedness, balance) of the vision of one's adult life in secondary school almost-graduates and MA almost-graduates. Second, to investigate changes in the VOAL during the school/ academic year preceding graduation from both educational settings. Third, to compare the VOAL between secondary school almost-graduates and MA almost-graduates. Fourth, to compare the VOAL between men and women.

Research Hypotheses

According to these research goals, we have formulated three main hypotheses based on the above-mentioned findings of the previous studies on youths' future thinking. First, based on previous research (Czerwińska-Jasiewicz, 2005; Kutra, 2008; Keshavarzi et al., 2022; Kvasková et al., 2022; Liberska, 2004; Roberts & Robins, 2000; Salmela-Aro, & Nurmi, 1997; Timoszyk-Tomczak, 2010), we expected that: job, romantic relationships, family, and education will be areas of life the most frequently represented in the VOAL and described in the most detailed way. Second, in line with findings presented by Czerwińska-Jasiewicz (2005), Liberska (2004), and Salmela-Aro et al. (2007), we predicted that older participants will have more extended and detailed VOAL than younger ones. Finally, we expected that women would mention issues referring to romantic relationships and parenthood more frequently and describe them in a more detailed way than men, while in the case of job, the pattern will be the opposite. This hypothesis is rooted in the results of former studies on gender differences in future thinking (Czerwińska-Jasiewicz, 2005; Greene & DeBacker, 2004; Janowicz, 2018; Keshavarzi et al., 2022; Liberska, 2004; Salmela-Aro et al., 2007).

MATERIALS AND METHODS

Participants and Procedures

Two groups of participants were recruited. The first sample consisted of 142 (47.9% female) secondary school almost-graduates (pupils from the final year) aged 17 to 20 ($M = 18.39$; $SD = 0.66$). The second group included 157 (59.9% female) MA almost-graduates (students from the final year of a master's degree [MA] program) aged 22 to 27 ($M = 23.42$; $SD = 1.09$). All respondents lived in Poland (in cities or city agglomerations with over 300,000 inhabitants) and were Caucasian race. The detailed demographic characteristics of participants are presented in Table 1.

From the initial sample, 177 (59.2%) people took part in the second measurement. Younger participants more often resigned from a study ($t[1, 296] = -4.20$; $p < .001$). Those who participated in the second measurement did not differ from those who did not in terms of other socio-demographic characteristics (e.g., gender, relationship status, or declared socioeconomic status).

Our study consisted of two measurements between the beginning (September/ October) and the end (May/ June) of the school/academic year (2020/2021). Due to the COVID-19 outbreak, the study was conducted online. Participants were recruited from drawn secondary schools (14) and universities (25) (various types and faculties) from 11 cities in Poland. At both stages of the research, participants were rewarded with 25 PLN vouchers for an online shop offering books, music, and games. The procedure of the study was previously accepted by the Ethical Committee at the [INSTITUTION BLINDED FOR THE REVIEW] (decision number 3/20/03/2020).

Measuring the VOAL

In both measurements, participants were asked to answer the following open-ended question about their envisioned future adult life: *Please write how you imagine your life when you are 35 years old. Write about what comes to your mind referring to this moment of your life in the future. I would like to ask you to describe how you envision your life when you are 35 years old, referring to how you think it will be, not how you want it to be.*

Instruction was inspired by those used in another study on emerging adults' future thinking (Janowicz & Bakiera, 2018) and designed to focus participants' attention on their vision of their adult life. That is why we highlighted the necessity of referring to the 'envisioned future' instead of the 'desired future'. Being 35 has been chosen as the 'reference time' for at least two reasons. First, most prominent developmental psychologists claim that this is the age of 'established' adulthood (Havighurst, 1981; Levinson, 1988; Mehta et al., 2020). Second, most young people predict to reach all their important life goals until turning 35 (Liberska, 2004).

Additionally, the participants were asked to assess their VOAL on numeric scales in terms of how easy/ difficult it was to recall and describe it (scale: 1 = "Very difficult" to 6 = "Very easy"); how strongly positive and

Table 1. Demographic Characteristics of the Participants

	Group 1 Secondary school almost-graduates		Group 2 University almost-graduates	
	<i>N</i>	%	<i>N</i>	%
Age				
Range	17–20		22–27	
<i>M (SD)</i>	18.39 (0.66)		23.42 (1.09)	
Gender				
Female	68	47.9%	93	59.6%
Male	74	52.1%	63	40.4%
Family situation				
Parents live together	116	81.7%	125	80.1%
Parents separated – mother as a main care-taker	20	14.1%	22	14.2%
Other	6	4.2%	9	5.7%
Residence				
With parents	131	92.3%	59	37.8%
Dormitory/hall of residence	1	0.7%	12	7.7%
Rented room/flat	5	3.5%	76	48.7%
Other	5	3.5%	9	5.7%
Occupational activity				
Unemployed	113	79.6%	64	41.0%
Part-time job (< 15h/week)	25	17.6%	43	27.6%
Stable full-time job	3	2.1%	49	31.4%
Other	1	0.7%	0	0%
Declared socioeconomic status				
Very bad	0	0%	2	1.3%
Bad	6	4.2%	3	1.9%
Average	52	36.6%	79	51.0%
Better than average	67	47.2%	64	41.3%
Much better than average	17	12.0%	7	4.5%
Intimate relationship				
Single	99	69.7%	70	44.9%
Dating	41	28.9%	66	42.3%
Engaged	1	0.7%	18	11.5%
Married	1	0.7%	2	1.3%
Cohabitation with an intimate partner	5	7.8%	40	43.5%

negative emotions they felt during recalling and describing it (scale: 1 = “None” to 7 = “Very strong”); and to what degree they had a feeling of continuity between the future and the present while describing it (scale: 1 = “None” to 7 = “Very much”). These scales have been adopted from other studies on future thinking (D’Argembeau et al., 2012).

Data Analysis

Participants’ written answers about their VOALs were assessed by trained coders (three MA psychology students and one PhD psychology student). The coders assessed (1) whether each participant’s VOAL refers to various areas of life; (2) how many details are described referring to each area of life mentioned in the VOAL; (3) whether the VOAL is balanced or dominated by one to two areas of life; and (4) how idyllic is the VOAL? Before analyzing data from each part of the study, the coders were trained¹ until an at least acceptable inter-coder agreement (Kendall’s *W*) was established. Finally, inter-coder agreement was .90 (Measurement 1)/ .94 (Measurement 2) for the content of the VOAL, .86/.86 for the detailedness of the VOAL, and .70/.93 for the VOAL’s balance and idyllicness. After that, each coder assessed their share of the data (about 45-60 answers for each coder from each part of the study).

The participants’ written answers referring to their envisioned future adult life were assessed on the following aspects:

Content

Per content, did or did not the VOAL refers² to the following areas of life: finishing education, work, intimate relationships, parenthood, family life, place of residence, free time, life values, other meaningful social relationships, inner life, personal growth, and other areas of life (e.g., having a pet, one’s financial situation)?

Doubts

Per doubts, did or did not the VOAL refer to doubts related to the (im)possibility of predicting the future adult life? – e.g., “I don’t know...”, “It is difficult to predict how it will be...” etc.

Dreams

Per life dreams, did or did not the VOAL refer to dreams or goals (e.g., “I wish...”, “I want...”, “I hope...”).

Extension

This aspect referred to the number of areas of life mentioned in the VOAL. It was analyzed as a continuous variable. We counted the total number of areas of life mentioned in the VOAL.

Detailedness

Detailedness was analyzed as a continuous variable. We counted the number of details provided in the VOAL cumulatively and referred to each area of life.

Balance

Balance refers to the relative proportion of attention paid to each area of life mentioned in the vision compared

¹ The coders’ training was derived from answers in our another study (Reference blinded for the review). Detailed information about the coders’ training is available on OSF at https://osf.io/bua3n/?view_only=f32b80b565214fdcb5da4c2c7a944e81

² Both answers considering something will (e.g., “I will have two children”) and will not (“I will rather not have any children”) be part of someone’s future adult life were assessed as the presence of this area of life in the VOAL.

to the entire content of the VOAL. Coders assigned one of three labels: (1) a balanced vision, (2) a vision dominated by one aspect, or (3) a vision dominated by two aspects.

Idyllicness

Participants' answers were assigned one of the following three levels of idyllicness (see Berntsen & Jacobsen, 2008): a "3" was given to VOALs that referred to a life desired by most people in Polish society³, and there were no negative emotions mentioned; a "2" was applied to VOALs that referred to a life desired by most people in Polish society or for cases that had no negative emotions mentioned; and a "1" was applied where there were none of the above-mentioned aspects of an idyllic life in the VOAL.

Emotional Response

This aspect was framed to represent a combined value of the intensity of both positive and negative emotions in each VOAL. Seven types of emotional responses to the VOAL were specified, including neutral, moderately positive, strongly positive, moderately negative, strongly negative, moderately ambivalent, and strongly ambivalent (see Figure 1).

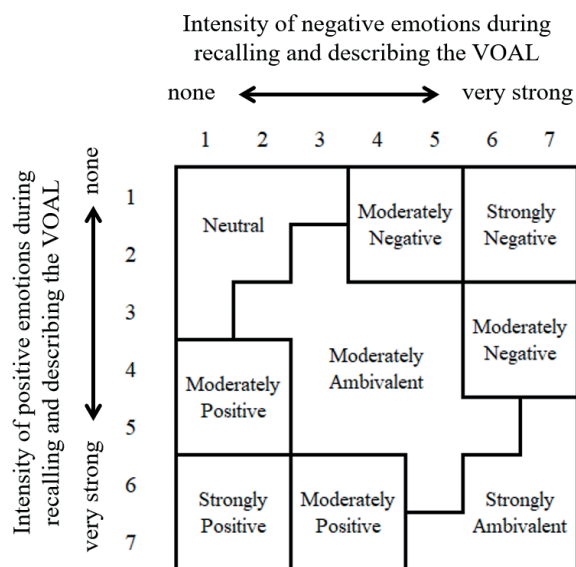


Figure 1. Emotional Response to the Described Vision of One's Adult Life

Statistical Analysis Plan

Due to the qualitative nature of some of the gathered data (i.e., the written answers on each VOAL), it was impossible to apply any statistical solutions (e.g., estimation of missing data) to cope with the study's significant dropout rate of 41%.

Analysis of the distribution of variables indicated that the skewness of all variables analyzed was between -2 and

2 (a range of moderate deviation from normality), while kurtosis exceeded the value of 2 only in two cases: detailedness in T1 (kurtosis value of 3.90) and detailedness in T2 (kurtosis value of 6.14). Since parametric tests remain robust for such distributions, especially for large samples (Rasch & Guiard, 2004; Schmider et al., 2010), it was decided to use them in the data analysis.

The following statistical analysis have been adopted to realize the research goals. For describing the content and the structure of the VOAL, percentages (on the basis of frequency tables), means, and standard deviations have been calculated. For comparing the content and the structure of the VOAL between secondary school almost-graduates and MA almost graduates, and between women and men, χ^2 test and *t*-test have been adopted. Finally, the χ^2 test, correlational analysis (Pearson *r*), and ANOVA for repeated measures have been adopted to investigate changes in the VOAL during the last year of school/ academic year. Significantly, in longitudinal analysis only data from participants who took part in both measures have been included. All statistical analyses of quantitative data were conducted in Jamovi v.2.0.

RESULTS

Description of Vision of One's Adult Life

The Content of the VOAL

Our analyses revealed that the most frequently referred area of life was a job, followed by an intimate relationship and place of residence. These results are mostly in line with our first hypothesis. However, we expected more young people would describe issues referring to education as part of their VOAL. Table 2. presents detailed information about which areas of life were mentioned in the youth's simulations of their future adult life.

We also examined which area of life was mentioned as the first one in the youths' VOAL. Almost half the participants (47.5%) started from writing on issues pertaining to work. Men did it more frequently ($\chi^2 [1, 299] = 6.46; p < .05$) than women (55.5% vs 40.7%). Intimate relationships were the area of life mentioned first in 19.7% of answers, with more women (25.9%) starting their VOAL with this issue more frequently ($\chi^2 [1, 299] = 8.56; p < .01$) than men (12.4%). The remaining life areas were mentioned first by less than 10% of the participants.

Doubts around the possibility of making accurate predictions about the future were present in 12.1% of answers while referring to goals/ dreams instead of predictions was present in VOAL of 19.5% of the participants. The last analyzed aspect of the VOAL's content was how idyllic it appeared. The VOAL of 34.3% of participants was assessed as containing both aspects of an idyllic life. At least one factor was observed in answers provided by 57.2% of participants versus none provided in 8.4% of the sample.

³ Having a successful and meaningful life in areas of the family, job, free time, relationships, and health—according to goals and values rated as the most important in Polish society (Czerwińska-Jasiewicz, 2005; Liberska, 2004).

Table 2. The Content of the Vision of One's Adult Life in Emerging Adults

	Total		Secondary school almost-graduates		University almost-graduates		χ^2	<i>p</i>
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%		
Job	262	87.6%	119	83.8%	143	91.1%	3.644	.056
Intimate relationship	180	60.2%	64	45.1%	116	73.9%	25.839	< .001
Place of residence	153	51.2%	58	40.8%	95	60.5%	11.539	< .001
Parenthood	138	46.2%	47	33.1%	91	58.0%	18.547	< .001
Free time	71	23.7%	24	16.9%	47	29.9%	6.997	.008
Other	71	23.7%	28	19.7%	43	27.4%	2.423	.120
Family life	53	17.7%	30	21.1%	23	14.6%	2.145	.143
Education (graduation)	34	11.4%	22	15.5%	12	7.6%	4.559	.033
Internal life and personal development	33	11.0%	14	9.9%	19	12.1%	0.382	.537
Other social relationships	25	8.4%	10	7.0%	15	9.6%	0.614	.433
Life values	14	4.7%	7	4.9%	7	4.5%	0.037	.847

The Structure of the VOAL

Most of the participants' written answers about their VOAL were not extensive, with a mean number of 27.43 words ($SD = 26.82$). In their VOALs, most youths referred to three (24.1%) or four (21.7%) areas of life with a mean of 3.45 ($SD = 1.59$). Detailedness of the youths' VOAL was rather moderate, with a mean number of provided details equal to 5.88 ($SD = 3.88$). In line with hypothesis 1., the job was the most detailed described aspect of the VOAL ($M = 1.78$; $SD = 1.44$). However, it was followed by the place of residence ($M = 1.15$; $SD = 1.35$), while issues referring to an intimate relationship ($M = 0.74$; $SD = 0.75$) and parenthood ($M = 0.61$ $SD = 0.76$) were described in a less detailed way.

Difficulty, Emotional Response, and a Feeling of Continuity related to the VOAL

Recalling and describing the VOAL was usually perceived as rather easy for most participants ($M = 4.24$; $SD = 1.51$ [scale: 1-6]). However, there was a subset of participants (18.8%) for whom the task of envisioning their future adult life and describing it felt very difficult (answers 1 and 2).

For most of the participants, recalling and describing the envisioned future adult life was related to strong positive emotions ($M = 5.11$; $SD = 1.62$ [scale: 1-7]) and low intensity of negative emotions ($M = 2.79$; $SD = 1.64$ [scale: 1-7]). Analyses of combined results from both scales revealed that the most common was a strong (47.3%) or moderately (12.8%) positive emotional response to the described VOAL. However, more than a quarter of the participants experienced moderate (27.0%) or strong (2.0%) ambivalence related to their VOAL. For less than 10% of the participants, their emotional response to their VOAL was negative (4.7%) or strongly negative (4.1%). Nearly nobody (2.0%) had a neutral emotional response to the personal, envisioned future adult life.

The last investigated aspect of the vision of one's adult life was the feeling of continuity between the present and the future brought on by the described vision. For most of the participants, it was moderate or moderately strong ($M = 4.93$; $SD = 1.56$ [scale: 1-7]).

Comparison of the VOAL between secondary school almost-graduates and MA almost-graduates

In line with our predictions (Hypotheses 2.), age was positively correlated with the extension ($r = .22$; $p < .001$) and detailedness ($r = .15$; $p < .01$) of the VOAL, and many significant differences in the content of the VOAL between secondary school almost-graduates and MA almost-graduates were observed (Table 2.). Students from the last MA year more frequently than secondary school participants referred to the following areas: intimate relationship, place of residence, parenthood, and free time. On the contrary, younger participants more frequently referred to graduating. Doubts around the possibility of making accurate predictions about the future were more frequent ($\chi^2 [1, 299] = 5.94$; $p < .05$) in secondary school almost-graduates (16.9%) than in MA almost-graduates (7.6%). Additionally, secondary school almost-graduates more frequently (15.0%) than MA almost-graduates (2.6%) described totally non-idyllic visions of their anticipated future adult life ($\chi^2 [1, 299] = 14.58$; $p < .001$).

According to the structure of the VOAL, there was no difference ($t = -1.67$; $p = .096$) in the length of the described VOAL between MA almost-graduates ($M = 29.89$; $SD = 30.32$) and pupils from secondary school ($M = 24.70$; $SD = 22.08$). On the other hand, in line with hypothesis 2., MA almost-graduates referred to more areas of life ($M = 3.87$; $SD = 1.35$) than did secondary school almost-graduates ($M = 2.97$; $SD = 1.68$; $t = -5.14$; $p < .001$; $d = -.60$). Moreover, university almost-graduates provided a higher total number of details in their

VOALs than did secondary school almost-graduates ($M_1 = 5.13$; $SD_1 = 3.95$ vs. $M_2 = 6.56$; $SD_2 = 3.71$; $t = -3.24$; $p < .01$; $d = -.38$).

It was observed (see Figure 2.) that recalling and describing the VOAL was easier ($t = -3.46$; $p < .001$; $d = -.40$) for MA almost-graduates than for secondary school almost-graduates. Additionally, MA almost-gradu-

Changes in the VOAL

A key goal of this project was to analyze changes in the VOAL in emerging adults across the last year of education in secondary school and at university. We investigated it for all aspects of the VOAL. In these analyses, data only from participants who finished both measurements ($n = 177$) have been used.

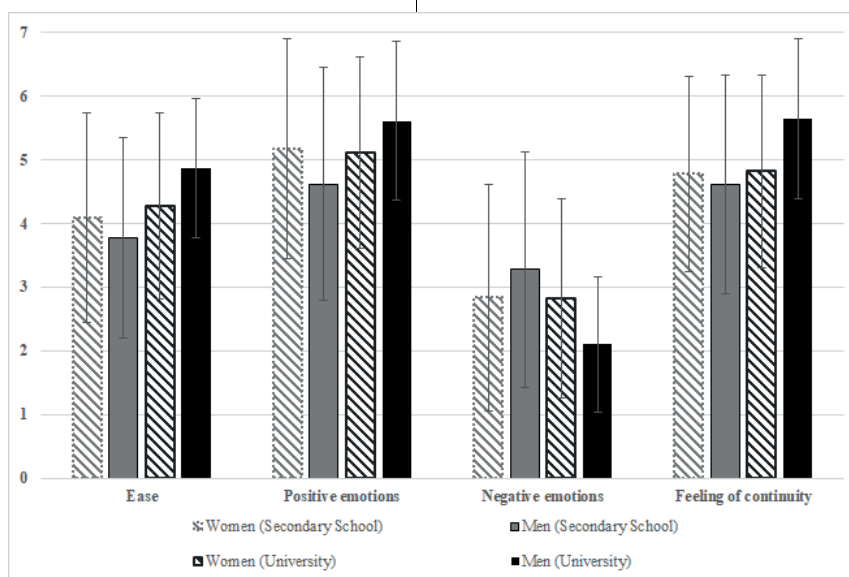


Figure 2. Ease, the Intensity of Positive & Negative Emotions, and a Feeling of Continuity Related to the VOAL in Adolescents and Emerging Adults

ates experienced a *higher intensity of positive emotions* ($t = -2.29$; $p < .05$; $d = -.27$) and a lower intensity of negative emotions ($t = 2.85$; $p < .01$; $d = .33$) related to the described VOAL than did secondary school participants. Finally, for MA almost-graduates, their vision brought up a stronger feeling of continuity than for secondary school almost-graduates ($t = -2.55$; $p < .05$; $d = -.30$).

Comparison of the VOAL between women and men

Only two gender-related differences in the contents of VOALs were observed. In line with our predictions (Hypothesis 3.), women more frequently than men referred to intimate relationships (67.9% vs. 51.1%; $\chi^2 [1, 299] = 8.75$; $p < .011$) and parenthood (56.8% vs. 33.6%; $\chi^2 [1, 299] = 16.10$; $p < .001$). Contrary to our expectations, there was no significant difference in the frequency of referring to the job ($\chi^2 [1, 299] = 3.64$; $p = .056$) between men (83.9%) and women (90.7%).

Women referred to more areas of life ($M = 3.74$; $SD = 1.50$) than men did ($M = 3.10$; $SD = 1.60$; $t = 3.60$; $p < .001$; $d = .42$), but there was no difference in a total number of details provided in VOAL between men and women ($t = 1.24$; $p = .215$). However, women provided more detailed VOALs than men on the topic of parenthood ($t = 3.47$; $p < .001$; $d = .40$). The men's VOALs were more frequently than women's dominated by a single aspect of life (27.2% vs. 15.0%; $\chi^2 [1, 299] = 6.69$; $p < .05$), most usually the topic of job and work. There was no gender-related difference in other aspects of the VOAL.

Some significant changes in the content of VOALs were observed during the months between both measurements. There was a decrease in the percentage of people referring to a job (from 87.6% to 79.7%; $\chi^2 [1, 354] = 7.08$; $p < .01$) and intimate relationships (from 60.2% to 48.6%; $\chi^2 [1, 354] = 9.68$; $p < .01$), and increase in the percentage of people referring to family life (from 17.7% to 35.6%; $\chi^2 [1, 354] = 13.83$; $p < .001$) and internal life and personal growth (from 11.0% to 22.0%; $\chi^2 [1, 354] = 7.34$; $p < .01$). Moreover, a decrease in the percentage of people referring to dreams instead of predictions was observed (from 21.1% to 12.4%; $\chi^2 [1, 352] = 4.79$; $p < .05$).

For changes in the structure of the vision of one's adult life, a few aspects were analyzed. First, we adopted ANOVA for repeated measures to establish that there was no significant change in the length of written answers referring to the envisioned future adult life ($F [1, 175] = 0.79$; $p = .375$). There was also no change in the average number of areas of life mentioned in VOALs ($F [1, 176] = 0.55$; $p = .460$) and no significant change in the total number of details provided in the VOALs ($F [1, 175] = 0.10$; $p = .749$). However, correlations between scores in both measurements were at least moderate, with $r = .32$ ($p < .001$) for the number of areas of life mentioned in VOAL, $r = .32$ ($p < .001$) for the total number of details provided in VOALs, and $r = .34$ ($p < .001$) for the length of VOAL. Finally, no difference in the balance of VOALs between both measurements was obtained ($\chi^2 [3, 352] = 1.23$; $p = .746$).

Analyses referring to the whole group may suggest that there were no significant changes in VOALs between measurements. However, comparing the answers of each participant in both measurements suggests that the structure of the VOAL changed in the case of 54.8% of participants for extension, 64.6% for detailedness, and 41.4% for balance (see Table 3).

In terms of ease ($F [1, 175] = 0.01$; $p = .918$), intensity of positive ($F [1, 175] = 0.02$; $p = .895$) and negative ($F [1, 176] = 2.98$; $p = .086$) emotions, and the

how they envision their future. Our findings align with those from Czerwińska-Jasiewicz's (2005) study, showing that about 10% of secondary school almost-graduates profess no long-term life plans and goals. Building on works highlighting the role of exploring the future in identity development (e.g., Erikson, 2004; Luyckx et al., 2006; Skhirtladze et al., 2021), our findings suggest that many youths may struggle with developing an identity due to difficulties in making simulations of their personal future.

Table 3. Changes in the Vision of One's Adult Life

	Extension	Detailedness	Ease	Intensity of positive emotions	Intensity of negative emotions	Feeling of continuity
Decrease	28.8%	29.1%	34.5%	28.2%	31.6%	35.0%
No change	45.2%	45.2%	28.8%	33.9%	27.1%	32.8%
Increase	26.0%	26.0%	36.7%	37.9%	41.2%	32.2%

Note. Decrease = score in T2 was lower than the score in T1; No change = scores in T1 and T2 were equal; Increase = score in T2 was higher than the score in T1. Percentages refer to the percentage of participants among whom we observed a decrease, increase, or lack of change in the analyzed aspects of the VOAL.

feeling of continuity (intensity of positive emotions ($F [1, 176] = 0.32$; $p = .576$) there was no significant difference in youths' answers between the beginning and the end of the school/academic year. Correlations between scores on both measurements were moderate, with $r = .45$ ($p < .001$) for the ease of recalling and describing the VOAL, $r = .37$ ($p < .001$) for the intensity of positive emotions referring to the VOAL, $r = .35$ ($p < .001$) for the intensity of negative emotions referring to the VOAL, and $r = .53$ ($p < .001$) for the feeling of continuity related to the written VOAL. Similarly to the structure of VOAL, also in the case of the above-mentioned aspect of assessing it, many participants experienced a change when we compared their answers from both measurements (again see Table 3).

DISCUSSION

Structure of the vision of one's adult life in adolescents and emerging adults

The present study investigated how adolescents and emerging adults envision their future adult life and how these simulations change over time. According to our results, the vision of one's adult life in youths usually refers to three or four areas of life. This finding is in line with research by Kutra (2008) and Timoszyk-Tomczak (2010), suggesting that emerging adults usually have from two to four long-term life goals. This may indicate that youths tend to focus on a few of the most important issues for them when considering their future, whereas they do not put considerable effort into reflecting on other topics. It may also be because developing a vision around a personal future is simply a difficult task (Kutra, 2008; Szpunar et al., 2014).

Perhaps, many youths in our study cannot quite imagine their future adult life and struggle with describing

Content of the vision of one's adult life in adolescents and emerging adults

Areas of life most frequently mentioned in youths' VOALs were job, intimate relationships, place of residence, and parenthood. This finding is mostly consistent with other studies from various countries, including Iran (Keshavarzi et al., 2022), Poland (Kutra, 2008; Liberska, 2004; Timoszyk-Tomczak, 2010), Sweden (Trempla & Malmberg, 1996), and the United States (Roberts & Robins, 2000), which show that having a career, finding a satisfying job, and starting a fulfilling romantic relationship are one of the most important conscious life goals for teenagers and emerging adults. They are also one of the most common themes in youths' self-defining future projections (D'Argebeau et al., 2012). While most adults tend to/have to work, reflection on this topic seems to be adaptive and may support the process of entering a job market during emerging adulthood. However, it should be mentioned that some participants predicted difficulties in finding a job or finding a satisfying job. Developmental outcomes of this state may be both positive (motivation to change something in one's life to have a higher chance for occupational success) and negative (that may prove a demotivating force). The fact that job-related issues were the most frequently mentioned in the VOAL, usually recalled at its' beginning and described in the most detailed way, is in line with Twenge et al. (2012) findings indicating that for Millennials young people's goals focused on financial wealth and job are one of the most important.

The second area of life mentioned most frequently and described in the most detailed way in VOAL was an anticipated place(s) of residence. Most older studies focused on youths' prospective thinking (Czerwińska-Jasiewicz, 2005; Liberska, 2004; Roberts & Robins, 2000; Trempla & Malmberg, 1996; Timoszyk-Tomczak,

2010) have not reported this kind of finding. Contrary, newer research (Cuzzocrea & Mandich, 2015) has shown that about 78% of Sardinian 18-year-old students mentioned some issues referring to place of residence and mobility in their essays about the anticipated future (when they will be 90). Accordingly, it may be hypothesized that nowadays, issues related to the place of residence are more important for youths than previously. A possible explanation may refer to the increasing level of individualism in contemporary societies (Santos et al., 2017), and having one's own flat or changing the place of living may be perceived by youths as a chance to move out from one's nuclear family, become independent, or the way to realize their other goals (Cuzzocrea & Mandich, 2015). On the other hand, the current situation in the housing market in Poland is difficult (Główny Urząd Statystyczny, 2021), so many youths might either literally struggle or imagine struggling to pay rent or buy a flat to accommodate their needs. Thus, they may focus more on this topic when they think about their future adult life.

Contrary to expectations, many youths in this study did not mention issues related to romantic relationships and parenthood in their vision. This is in contrast to earlier studies that found that having a happy family life, being in a stable romantic relationship, and having children were reported as crucial life goals of youths (Czerwińska-Jasiewicz, 2005; Keshavarz et al., 2022; Janowicz, 2022b; Trempała & Malmberg, 1996). This may be because youths have not yet deeply reflected on these areas of life. Moreover, Shulman and Connolly (2013) pointed out that coordinating life plans referring to romantic relationships with those related to other areas of life is challenging for young adults. According to the adaptive and regulation role of prospective thinking for people's development (Seligman et al., 2013; Szpunar et al., 2014), this finding should be somewhat alarming, as it may suggest the risk of unpreparedness to both start or maintain a satisfying romantic relationship and fulfill parental duties by adolescents and emerging adults (Ratra & Kaur, 2004; Rempel et al., 2017).

For most of the youths participating in our study, recalling and describing the vision of their future adult life was related to the high intensity of positive emotions and the low intensity of negative emotions. Additionally, in most of the described VOAL, at least one (of two) aspect of idyllicness was present (Berntsen & Jacobsen, 2008). Taken together, our findings suggest that adolescents and emerging adults have rather positive attitudes toward their future adult life, which aligns with other observations on this topic (Inhelder & Piaget, 1970; Weinstein, 1980). As having a very optimistic view of the personal future may sometimes be adaptive but may also result in various adverse consequences (Jefferson et al., 2017; Oettingen, 2012), future longitudinal studies should investigate how the level of idyllicness of the youths' VOAL and emotional response for this vision influence adolescents' and emerging adults' behaviors. In some cases, it may motivate to start or maintain adaptive actions, increasing chances for life success, but it also may outcome in

omitting potential difficulties or challenges and not reacting earlier to cope with them (Jefferson et al., 2017; Oettingen, 2012).

Changes in the vision of one's adult life in adolescents and emerging adults

Results on changes in the youths' vision of their adult life during the last year of education in secondary schools and universities are inconsistent. On the one hand, in this study, no significant changes were observed at the level of the whole group. On the other hand, at the individual level, most participants have experienced smaller or bigger changes. This suggests that the way adolescents and emerging adults envision their future adult life is unstable, which corresponds with Arnett's (2014, p. 15) observation that emerging adulthood is the "age of possibilities, when [...] little about a person's direction in life has been decided for certain". Further research could investigate factors influencing the (in)stability of the youths' VOAL. For example, it may be hypothesized that adolescents and emerging adults with achieved identity should have a more stable vision of their future adult life, as they are more committed to their decisions about the future (Luyckx et al., 2006).

Comparison of the vision of one's adult life between secondary school almost-graduates and university almost-graduates

While previous studies focused on comparing prospective thinking in early versus late adolescence (e.g., Czerwińska-Jasiewicz, 2005; Liberska, 2004), our study extended the literature in comparing the vision of one's adult life of people around 18 years of age with those closer to 25. Many differences between these two groups were observed. In line with expectations and previous studies on age-related differences in prospective thinking (e.g., Czerwińska-Jasiewicz, 2005; Liberska, 2004; Salmela-Aro et al., 2007) in this study, university almost-graduates reported a more extended and detailed vision of one's adult life than did secondary school almost-graduates. Older participants also less frequently mentioned doubts around the possibility of making predictions about their future adult life and perceived VOAL as easier to envision and providing a stronger feeling of continuity than younger participants. These differences may be explained in various ways. First, the level of cognitive development may have played a role here as older participants should leverage more developed formal (Inhelder & Piaget, 1970) and post-formal (Gurba, 2000) cognitive structures. This explanation is in line with Liberska's (2004) findings indicating that a higher level of cognitive development was related to having a more distant future time perspective. Second, the differences between the younger and older participants in this study may have been caused by the different life experiences of both groups. University almost-graduates were more frequently coupled, working and living apart from their parents. Experiences gained across various activities may influence the development of more extended and detailed

predictions about one's personal, future adult life (Inhelder & Piaget, 1970). Another possible explanation of this result refers back to the social context. Pressure to set life goals and think about the future should be stronger in people finishing university than those graduating from secondary school (Erikson, 2004).

Comparison of the vision of one's adult life between women and men

Gender-related differences in the vision of one's adult life in youths observed in this study mostly align with previous research (e.g., Czerwińska-Jasiewicz, 2005; Greene & DeBacker, 2004; Janowicz, 2018) indicating that life goals, plans, and expectations of youths are partially rooted in traditional gender role patterns. This was observed predominantly in issues related to family life. Women in this study tended to mention issues referring to intimate relationships and parenthood more frequently than men. Additionally, women provided more details when describing issues referring to parenthood in their VOAL. These findings are consistent with studies indicating that young women value family-related life goals and expectations as more important (Czerwińska-Jasiewicz, 2005; Keshavarzi et al., 2022; Liberska, 2004) and communicate more extended visions of themselves as parents in the future (Janowicz, 2018) than men. As future-thinking plays an important motivational and evaluative role in a decision-making process (Arnett, 2014; Hallford & D'Argembeau, 2020; Schacter et al., 2017), the way adolescents and emerging adults perceive their *most possible self* may significantly influence their actions and choices. According to our data, it may be hypothesized that women in adolescence and emerging adulthood will be more involved in actions referring to intimate relationship and parenting (e.g., in gaining knowledge and experience in these fields) than their male peers. Fewer differences were observed regarding issues related to a job, work, and career. This contrasts with gender-role stereotypes prescribing these aspects of life mainly to men, but the finding is in line with some studies (Czerwińska-Jasiewicz, 2005; Liberska, 2005) that showed no difference between young men and women in terms of the number and valuing of life goals and plans related to a job. Interestingly, for teenage girls in Iran occupational aspirations were even more important than for their male peers (Keshavarzi et al., 2022). The observed lack of difference between women and men in this aspect of VOAL in our study may be due to changing patterns of femininity that pertain to an increase in women's focus on the role of an occupational career and personal growth (Jacques & Radtke, 2012). It is also observed in an increasing percentage of working women in Poland: from 61 to 68% between 2011 and 2018 (Główny Urząd Statystyczny, 2018).

PRACTICAL IMPLICATIONS

As our research focused on aspects significant for adolescents' and emerging adults' development, we would like to propose a few practical implications of our findings.

First, results indicating that many adolescents and emerging adults struggle with developing an extended and detailed vision of their future adult life call for incorporating some activities encouraging exploring the future adult life in both secondary and academic education. Adolescents and emerging adults should be encouraged and supported in setting life goals and plans and then making predictions referring to their future education, job, romantic relationships and family life (Meca et al., 2014). That could be realized i.e., by workshops, mentoring, or tutoring. Second, as knowledge about the world and self-knowledge are important for making predictions about the future (Schacter et al., 2017; Szpunar et al., 2014), our findings may suggest that many youths have very limited orientation in 'how the world looks and works', so they may benefit from classes, or workshops enhancing their knowledge on political, economical, societal and occupational issues (e.g., what they need to do, to get a desired job). Finally, our results suggest that during psychotherapy or counselling for adolescents and emerging adults, the topic of exploring the future adult life may be an important part of work, as for many young people, developing the extended, stable and meaningful vision of one own's future seems to be challenging.

LIMITATIONS OF THE STUDY

Even though this study provided a deep insight into the content and the structure of the VOAL in emerging adults, some limitations need to be addressed. First, as most of the participants lived in big cities and declared at least average socioeconomic status, these results cannot be generalized to all youths. Second, many participants resigned from the study between the first and second measurements, which may have influenced results pertaining to longitudinal changes in the vision of one's adult life. Also, unfortunately, with the qualitative data, it was impossible to estimate and fill in the missing data. Future studies could put more effort into decreasing the drop-out rate. Third, the context of the pandemic may have influenced our emerging adults' answers referring to the envisioned future (Singh et al., 2022). Instability, ambiguity, and fears related to the pandemic may have resulted in difficulties in making predictions about the future. Thus, it would be useful to repeat this study post-pandemic to examine the potential role of the cohort and specific historical time for observed results (Schaie, 1986). Finally, our research consisted of only two measurements separated by about 9-10 months, which limited the possibility of analyzing the changes in the VOAL in the longer perspective of time. Further research could aimed at observing the process of VOAL development in emerging adults through a few years.

SUMMARY

This longitudinal study offers insight into the content and structure of the vision of one's adult life in adolescence and emerging adulthood. Additionally,

changes in this vision over time were investigated. Our analyses revealed that for many adolescents and emerging adults, developing an extended and detailed mental simulation of the predicted state of their future adult life was a challenging task. In line with ideas on the instability of emerging adulthood (Arnett, 2014), the vision of one's adult life of many participants significantly changed during a few months. According to our results, it might be claimed that the content of the youths' VOAL seems to be partially rooted in stereotypical gender-role patterns. Additionally, many age-related differences were observed concerning the structure of the VOAL, which calls for additional longitudinal studies exploring the dynamics of VOAL development in adolescence and emerging adulthood. Finally, in line with other researchers (Zarrett & Eccles, 2006), our findings highlight the necessity of supporting youths to explore their future adult lives and gain knowledge about adulthood in advance. It should be done both in secondary school and at university.

CONFLICTS OF INTEREST.

All authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

First Author: Conceptualization (lead), Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology (lead), Project Administration (equal), Resources, Visualization, Writing – Original Draft Preparation (lead), Writing – Review & Editing.

Second Author: Writing – Original Draft Preparation (supporting), Supervision (support).

Third Author: Conceptualization (supporting), Methodology (supporting), Project Administration (equal), Supervision (lead), Validation, Writing – Original Draft Preparation (supporting).

DATA AVAILABILITY STATEMENT:

The raw data related to this project, the guidelines for coders, and a detailed description of the coders' training are available on the OSF: https://osf.io/bua3n/?view_only=f32b80b565214fdb5da4c2c7a944e81

COMPLIANCE WITH ETHICAL STANDARDS

All procedures of the study were previously accepted by the Ethical Committee at the [INSTITUTION BLINDED FOR THE REVIEW] (decision number 3/20/03/2020). An informed consent was gathered from all participants.

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