

Development of the Creative Self-Concept*

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ABSTRACT

Although the creative self-concept is more and more intensively studied in the creativity literature, little is known about its developmental characteristics. In three studies presented in this paper, several hypotheses concerning the development of the creative self-concept are tested. Specifically examined are hypotheses regarding the growing specificity and clarity of the creative self-concept during development (Studies 1 and 2) and changes in it during the lifespan (Study 3). The results show that although the creative self-concept is formed at about 10 years of age, by 12 years old it remains somewhat poorly clarified. Changes in the creative self-concept are observed mainly in the transition period between late adolescence and early adulthood (when it grows) and medium and late adulthood (when it diminishes).

Creativity – a specific interplay between imagination, improvisation, and innovation (Beghetto, 2014; Sawyer, 2006) – is among the most valuable human qualities achieved during the process of learning and teaching. Thus, it should be no surprise that educators, educational psychologists, policy makers, parents and journalists are deeply engaged in both the practical sides of creative education and teaching for creativity and developing aspects of creativity theories, which are of special importance for education (see Beghetto & Plucker, 2006). Since the beginning of creativity theory, the educational side of creativity has been at the heart of scholars' thinking and research. Torrance's classical findings (Torrance, 1968), such as those of the fourth-grade slump (see also Krampen, 2012), or applications of motivation theory for education (Amabile, 1996; Hennessey, 2015) may serve as key examples. Although questions about how to teach creatively and how to teach creativity, are crucial; almost everyone worldwide agrees that school is all too rarely a place where original thinkers are supported and creative thinking flourishes (Cropley, 2010; Nickerson, 2010). Plenty of studies show that teachers are poorly aware

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of their students' creative potential (i.e., Gralewski & Karwowski, 2013; *in press*; Karwowski, 2007) and too often almost automatically associate improper behaviour with creative behaviour (Scott, 1999, Westby & Dawson, 1995). Usually, creative students are, at most, moderate students in terms of their marks, or standardized achievement test results (Gralewski & Karwowski, 2012). Previous studies have shown that the correlation between creativity and school achievement varies between schools (Gralewski & Karwowski, 2012). As recent work shows, there is a strong will to help teachers enhance creativity without the need for special programmes or training, encouraging it during teachers' regular work (Beghetto, 2013) or their work associated with the common core (Beghetto, Baer & Kaufman, 2015). However, to help teachers stimulate creativity effectively, a better understanding of mechanisms underlying creativity is necessary.

In this article, I focus on a very special aspect of creativity that has been developed extensively in the last decade, namely, the creative self-concept (see Karwowski & Barbot, 2016; Karwowski & Lebuda, 2015, *in press*). I define creative self-concept as a multifaceted construct, covering such characteristics as creative self-efficacy (i.e., an individual's conviction that she or he is able to deal with problems requiring creative thinking: see Bandura, 1997; Beghetto, 2006; Karwowski, 2011, 2012), creative personal identity (the role creativity takes in the identity and self-description: see Tierney & Farmer, 2002; Karwowski, Lebuda, Wisniewska & Gralewski, 2013), self-rated creativity (Karwowski, 2009) and creative metacognition (Kaufman & Beghetto, 2013).

The crucial question that drives and holds this article together is one about developmental factors related to creative self-concept. More specifically, in the three studies presented below, I try to capture to what extent different aspects of self-concept theories developed within developmental psychology are applicable to the creativity literature and whether they are generalizable when creative self-concept is taken into consideration. (Similar studies most often consider academic self-concept or general self-efficacy.) In the following sections of this paper, I briefly sketch several theoretical assertions developed within developmental psychology that have not been empirically applied to creative self-concept to date. These assertions are then tested to examine to what extent they could (or could not) be generalized over and above mainstream developmental and educational psychology and be effectively applied to the creativity literature.

Development of Clarity in the Creative Self-Concept

Developmental approaches to the shaping of self-beliefs indicate that this process is complex and multiphasic (Flammer, 1995). Initially, during infancy and early childhood, children learn by means of habituation as well as classical and instrumental conditioning and are not yet able to understand the consequences of their actions. Instead, they learn

to continue activities that bring about pleasure and reduce distress. In this stage, called *event schema*, children are only aware that certain events do take place but are not aware that they actually influence them. During the second stage, the so-called *causal schema*, children acquire awareness of cause-and-effect relationships, which means they can understand that certain actions bring about certain effects. According to Piaget, the first signs of searching for such relations appear within approximately the first 6 months of a child's life. In turn, at approximately age 2 a mechanism appears, identified by Piaget (1936, p. 270) as *playing with causal schemata*, when children begin to more consciously integrate the cause-and-effect relationship with functioning. Stage 3 (Flammer, 1995, p. 72) is a distinction between external and internal causes, which takes place when the child acquires awareness that her or his own activity brings about certain effects. Signs of differentiation between the effects of one's own vs. other children's actions begin to appear as early as age 2 and directly precede the next stage, appearance of self-awareness, which represents the true beginning of self-concept. At this point, a child actually fully realizes that her or his actions bring about particular effects and so she or he begins to undertake them consciously. This awareness appears between age 2.5 and 3.5, the period associated also with the intensive development of the theory of mind (Wellman, Cross & Watson, 2001). This time – thanks to a growing number of social interactions – a child begins to slowly understand the meaning of comments given by parents or teachers, such as, *polite* or *able*. First, however, these terms are constructed in interactions with adults and are strongly situation-based. According to Flammer (1995), proper control belief, namely, a child's awareness that she or he is actually able to behave in a particular way to achieve anticipated effects, is a natural consequence of the previous stage. These competences usually appear at school age and earlier in case of those domains of a child's functioning that the child deals with more and has more experience with, especially the academic self-concept. With time, these convictions undergo differentiation, because the initial concept of the child's own ability is of a global and unstructured character, and the child is not able to fully differentiate ability from effort. Such differentiation occurs sometime midway through elementary school between the ages of 10 to 12; however, even among children at this age, we can see significant instabilities in understanding and in ascribing creativity to oneself. Developmental psychologists claim, however, that along with transferring to the stage of formal operations sometime around age 10, a child begins to understand the compensational mechanisms that operate between ability and effort, which are key to the child's self-regulation.

Independent of various theoretical traditions, it is quite consistently agreed that self-competence (White, 1959), self-concept (Harter, 1985), and self-efficacy (Bandura, 1986)

are fully visible at approximately age 10. A serious difference between various theories refers not so much to the age when self-beliefs appear but where their source is. Effectance theory (Harter, 1985) perceives competence as an innate drive; socio-cognitive theory is sourced in external factors, for instance, the influence of parents, teachers, action itself and its effects. The expectancy-value (EV) theory (Wigfield & Eccles, 2000) assumes reciprocal relations between achievement, self-concept and interest. These characteristics tend to diversify and influence each other during development. More specifically, it is the influence of self-concept on interests, which consequently leads to increased motivation.

However, are these findings generalizable to creative self-concept? When do children begin to understand what creativity is and whether they are (or can be) creative? At what point is it possible to expect appearance of such representations (and self-representations) of creativity, and when and how to study them? Ligeza (2005) conducted a unique study of the way children understand creativity. He concludes (see also Karwowski & Barbot, *in press*), that in early childhood perceived creativity is mainly associated with activity and behaviour. Hence it is difficult to talk about creative self-beliefs (CSB) in cases of children under 10; their knowledge about creativity is still too limited and creativity itself is only slightly associated with a person's traits. However, this does not mean that creative self-concept (or its early origins) is completely invisible among younger children, because individual differences are obvious in this respect. Arguably, among some younger children – especially gifted ones or those who are focused on creative activity – such signs may appear earlier.

To illustrate the above, two studies were conducted. In the pilot study, I examined self-definitions presented by two boys: a five-year-old and an eight-year-old. In Study 2 conducted on a sample of 10-12 years olds, I examined creative self-concept clarity using a standardized instrument, the Short Scale of Creative Self (SSCS: Karwowski, 2012; 2014; Karwowski, Lebuda, Wisniewska & Gralewski, 2013), originally developed to measure creative self-efficacy and creative personal identity among adults. Comparing the fit for several factor analytic models enables conclusions to be drawn about the clarity of the creative self-concept among children. The hypothesis derived from this part of the research assumes that among children younger than 10, the creative self-concept is poorly developed and unclarified, although a year or two later, it has become more clear. Study 3 was devoted to the study of changes in the self-concept over the life span. As creative activity, and especially creative achievement is clearly associated with age (Simonton, 1988), and the relationship between creative achievement and creative self-

concept is well established, there are good reasons to expect changes in the creative self-concept with age. More specifically, if the creative self-concept reproduces, to some extent, the changes in creative achievement, it would be expected to grow from adolescence to early adulthood and drop from medium to late adulthood.

Overview of the Present Studies

The aforementioned effects – all related to the creative self-concept – were tested in three studies. Study 1, treated as a pilot study, was devoted to a qualitative analysis of differences in self-concept clarity among two children, the younger 5.5 years old and the older 8 years old. In Study 2, conducted on a sample of more than one hundred 10, 11 and 12 year olds, the factor structure of the Short Scale of Creative Self, an established measure of creative self-efficacy and creative personal identity, was examined. Study 3 aimed to provide a cross-sectional comparison of results obtained from the creative self-efficacy and creative personal identity scales among people of different ages.

STUDY 1

Method

Participants and Procedure. In Study 1, two brothers, one 5.5 years old and the other 8 years old were interviewed. Both boys are gifted (IQ above the norm, well-developed verbal abilities). Additionally, the 5-year-old is characterized by spatial and constructional abilities and the 8-year-old by music and sports abilities. (He is both a gifted and already successful pianist and a keen football player). Four questions were posed to both boys: (1) Who am I? (2) What am I like? (3) What do I do well? (4) What do I like? Each of them was also asked to determine whether he is: inventive, fast, well-behaved, gifted, talented, little-and-big-c creative, bright, naughty, quarrelsome, independent, and brave. In each case, the boys first defined these terms by themselves, and then they stated whether the given term fits them or not. There was an expectation of limited knowledge about creativity and generalization of self-description (Table 1).

Results and Discussion. The results of this simple study brought about a series of interesting findings. First, self-awareness clearly increases with age; spontaneous self-definitions become increasingly complex, and in the case of provided traits, the 8-year-old made choices in a less mechanical and more diversified way. He was able to use categories based on nuance, psychological traits and social comparisons; that is, comparing himself to adults. Second, in the case of the 5-year-old boy – and also mainly in the case of the 8-year-old – the pattern fits the expectations of EV theory; both boys stated that they liked what they are good at. This is important because, in the case of the 8-year-old boy, the beginning of piano playing was not at all easy. However, the success

and the sense of aptitude in this regard made the boy spontaneously indicate this as his strong point and that it was enjoyable. Third and finally, the boys' representations and initial attempts to define creativity are intriguing. In the Polish language (similar to a few other European languages) there are two words that describe the little-mini-c and pro-big-c creativity (Karwowski, 2009). As can be seen, in the case of the 8-year-old, these words are spontaneously separated. Importantly and symptomatically, the boy ascribes both of these characteristics to activities he engages in and in which he is successful and likes. He claims, therefore, that "footballers are creative," (in the sense of "little-c creativity"), a phrase he almost surely overheard while listening to sports commentators, and (in the sense of pro-or-big-c creativity) that musicians are creative. The 5-year-old did not understand the meaning of the word "creativity" (little or mini-c): in Polish, it is semantically complex (*kreatywnosc*), yet when asked about pro-big-c-creativity, he not only clearly stated that creating is, for example, building with blocks (an activity he enjoys and which he is good at), but also that it has to reveal signs of newness.

Table 1
5-and-8-Year-Olds' Self-Definitions with Regard to Creativity

Question	5-year-old (KK)	8-year-old (FK)
Who am I?	A Pole, a child, a big boy	A human being, a boy, a child, non-adult, not old, a student, a footballer, a pianist
What am I like?	Nice, big, cool, loveable	Nice, smiling, a good student, well-behaved, good football player
What do I do well?	I build Lego structures well, I swim, I do somersaults, I jump from heights, I play, I race	I play the piano, I play football, I learn, I am a good human being, I cheer
What do I like?	To play, splash around in water, do somersaults, play tag, play hide-and-seek	To play football, play the piano, watch matches, learn, take a bath, cuddle with my parents, play with my brother, meet with my friends
Am I...?	inventive (-), fast (+), well-behaved (+), gifted (+), talented (+), creative (pro-c) (+), creative (+), bright (+), naughty (-), quarrelsome (-), independent (-), brave (+)	inventive (+), fast (+), well-behaved (+-), gifted (+), talented (+), creative (pro-c) (+), creative (+), bright (+), naughty (-+), quarrelsome (+-), independent (+), brave (+-)
What does it mean?	Creativity (mini-c/little-c): <i>I don't know...</i> Creativity (pro-c-big-c): <i>Creativity is when you build from Lego blocks and other tools. For example I made something from a whistle and a pencil sharpener</i>	Creativity (mini-c/little-c): <i>you can be creative in football. Footballers are creative.</i> Creativity (pro-c-big-c): <i>A musician can be creative</i>

Note. + means "yes", - means "not", +- means "it depends, sometimes"

Obviously, multiple-case studies are always of more illustrative than definitive character. However, previous research by Ligeza (2005) and data obtained during the interview with the boys indicate that in a non-selected population of children one can initially expect more or less stable definitions of CSB at approximately age 10. We can find confirmations of this conclusion in Rostan (1998) regarding identity development in young artists (8-11 year-olds). Along with advancing age, the definitions of what it means to be an artist not only became more rich but also multithreaded, just like definitions of “being creative.”

STUDY 2

Method

Participants, Measures, and Procedure. One hundred and thirty nine children aged 10-12 (94 girls) participated in this study. Children were students in one of the primary schools in Warsaw, Poland. All children were asked to fill in the Short Scale of Creative Self (SSCS: Karwowski et al., 2013). The study was realized individually for the younger children and in groups of 3 to 4 for older children. All participants' parents granted permission for their children to take part in the study; the children were also asked for their consent and informed that they could withdraw at any time. Researchers did not explain the meaning of the statements to the children, but asked participants whether they understood each of them.

Results and Discussion. The structure of the SSCS was tested in the sample by fitting three confirmatory factor analyses (CFA), and two exploratory factor analyses in the form of exploratory structural equation modelling (ESEM; see Figure 1). According to previous findings (Karwowski, 2012, 2014; Karwowski et al., 2013) the SSCS consists of two scales: creative self-efficacy and creative personal identity. These factors are usually highly correlated (up to .80), but still distinguishable. The first CFA model tested in the present study was a one-factor model with all items loading on one common creative self-concept factor. Although inconsistent with the hypothetical structure of the scale, it was treated as a baseline model. The second, a two-factor CFA model was confirmed valid for SSCS, while the third CFA provided bi-factor methodology: despite the creative self-efficacy and creative personal identity scales, there was also a general factor of creative self-concept, which could also be associated with a common method variance (self-report). Similar two-factor and bi-factor models were also tested using ESEM. Unlike the CFA, ESEM allows items to load different factors simultaneously, which could play a role in cases of less clear creative self-concept among children.

All models were fitted in Mplus (Muthen & Muthen, 1998-2013), version 7.1., using a WLSMV estimator. All SSCS items were modelled as measured on an ordinal scale. Table 2 presents model fit indices.

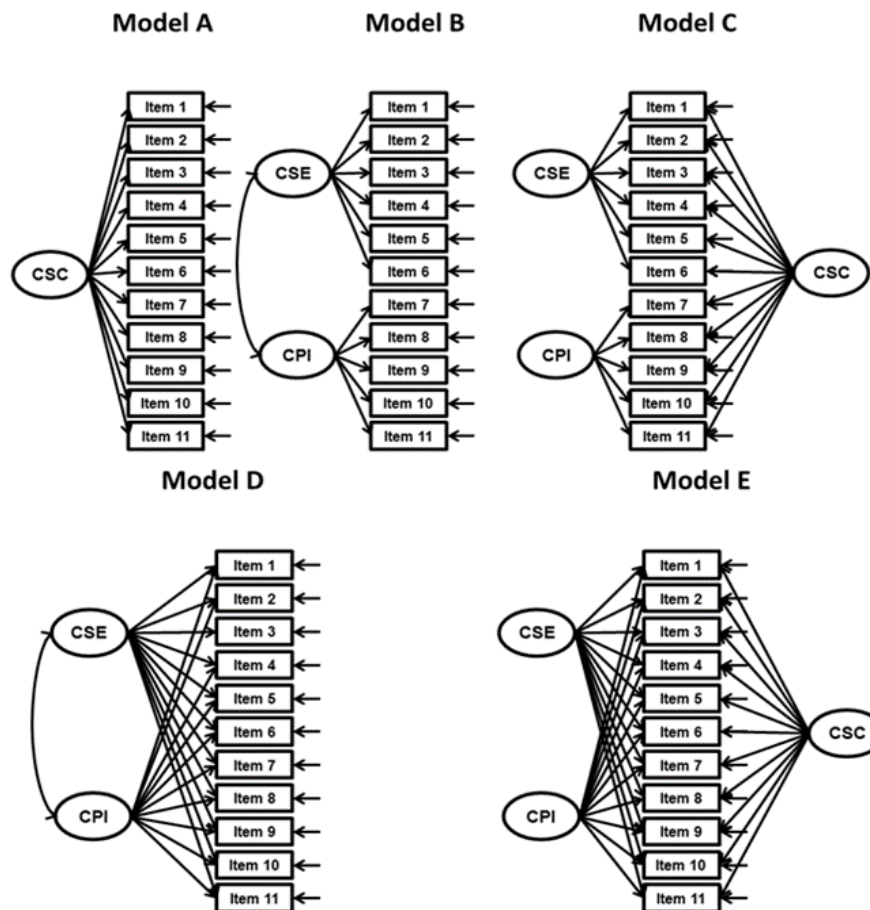


Figure 1. Factor analysis models tested in Study 2

Table 2

Fit Indices of Tested Factor Analysis Models

Model	χ^2 (df)	χ^2/df	CFI	TLI	RMSEA (90% CI)	WRMR
1-factor CFA (a)	207.88 (44)***	4.72	.976	.970	.164 (.142,.186)	1.24
2-factors CFA (b)	185.26 (43)***	4.31	.979	.973	.154 (.132,.177)	1.10
Bi-factor CFA (c)	115.44 (33)***	3.50	.988	.980	.134 (.108, .161)	0.736
2-factor ESEM (d)	79.71(34)***	2.34	.993	.989	.098 (.070, .127)	0.561
Bi-factor ESEM (e)	46.96 (25)**	1.88	.997	.993	.079 (.043,.114)	0.398

Although in all cases CFI and TLI values are satisfactory according to usually applied criteria (i.e. are higher than a recommended cut-off of .95, see Hu & Bentler, 1999; Kline, 2010), the one factor CFA seems to be characterized by a misfit. The high value of RMSEA and WRMR, a relatively new fit index, are against this model. According to typical recommendations, a value of RMSEA below .05 (a more conservative cut-off) or .08 (a more liberal cut-off) is expected, although sometimes (Kline, 2010) RMSEA be-

low or equal .10 is considered acceptable. Simulation studies using a WLSMV estimator have demonstrated that, especially when using small samples, RMSEA may be biased (Yu, 2002). According to recommended cut-off criteria, a value of WRMR below 1 is considered acceptable with lower values indicating better fit. Allowing items to load on both creative self-efficacy and creative personal identity factors results in a visibly better fit. The two-factor ESEM model is characterized by a generally acceptable fit. (Despite the rather high RMSEA, all other indices show almost perfect fit). Adding an additional general factor in the bi-factor model improves its fit only slightly. Thus, consistent with expectations, among children aged 10-12, both aspects of creative self-concept measured by the SSCS are observed, although the meaning of the items for 10-12 year old children is less clear and distinct than among older samples when the SSCS was used. Although tentative and obtained in a small-sample study, this finding may be potentially relevant for both empirical and theoretical purposes. Empirically, it shows that the SSCS may be used with children, but there may be a problem with the assumed two correlated factors CFA model. Theoretically, this finding shows that although 10 year olds already generally know what creativity is and are able to describe themselves as more or less creative, there are still some underdeveloped aspects of their creative self-concept, which result in cross-loadings.

STUDY 3

Method

Participants and Procedure. Data from almost 12,000 Poles ($N = 11,803$, 49% females) were aggregated across different studies where the SSCS was used. Participants were between 10 and 75 years old.

Results and Discussion. A comparison of results obtained within different age groups is presented in Figure 2.

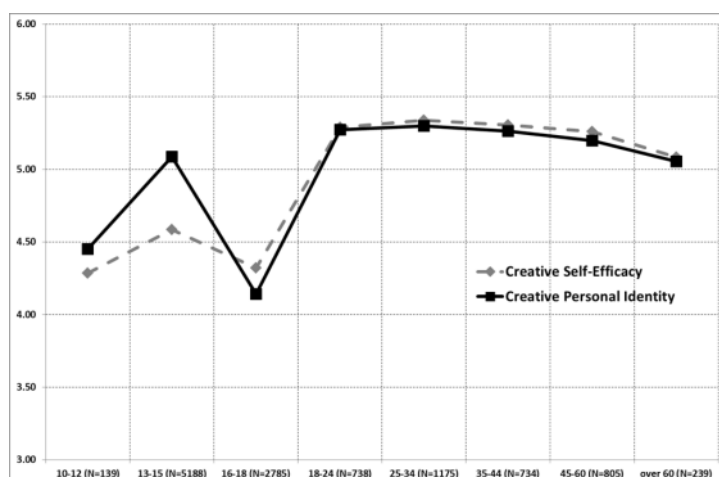


Figure 2. Cross-sectional changes in creative self-efficacy and creative personal identity (Polish samples). Note: 1-7 Likert scale was used.

Probably the most visible pattern is the stability of creative self-efficacy and creative personal identity across different age cohorts from late adolescence. Starting from early adulthood to late adulthood, there is virtually no change in the level of creative self-efficacy and creative personal identity.

A more interesting picture is observed among people in childhood and late adolescence, as well as those in late adulthood. The differences are especially vivid in cases of creative personal identity, which increases in age groups from 10-12 to 13-15 years and then drops between those aged 13-15 to 16-18 years. The most noticeable growth in creative personal identity is observed between the age group 16-18 and that of 18-24 years; then with increasing age the level of creative personal identity remains stable. Creative self-efficacy follows a similar trend, although changes between the 10-12, 13-15 and 16-18 year old cohorts are far less spectacular. Due to very large sample sizes, even very small differences between cohorts are statistically significant, thus I have focused on the observed trends rather than statistical significance. In the case of creative self-efficacy, the most spectacular change is observed between people in late adolescence and early adulthood, similar to the pattern for creative personal identity.

A sample-weighted regression analysis on aggregated data demonstrated that models with inverse-U shaped relations explained more of the variance of the creative self-concept variables, than linear models. In the case of creative self-efficacy, a model with the linear effect of age was statistically significant ($F[1,11802] = 11824.16$, $p < .001$) and explained 50% of this construct's variance. The effect of age was at $\beta = .707$, $p < .001$. The curvilinear model ($F[2,11802] = 12928.62$, $p < .001$) explained 68.7% of the creative self-efficacy variance with a positive effect ($\beta = 2.905$, $p < .001$) and a decrease of creative self-efficacy with age ($\beta = -2.239$, $p < .001$). A very similar pattern was observed in the case of creative personal identity. A linear model was statistically significant ($F[1,11802] = 1185.71$; $p < .001$) with an effect of $\beta = .302$, $p < .001$ but explained only 9.1% of the for creative personal identity variance, while a curvilinear model explained 9.9% of the variance ($F[2,11802] = 647.59$, $p < .001$), showing first a positive effect ($\beta = .746$; $p < .001$) and then a drop ($\beta = -.453$, $p < .001$).

The observed patterns, although generally similar, also show some potentially interesting differences. In the case of creative self-efficacy, a curvilinear trend is observed (in fact, the relationship with age takes a trapezoid shape). Creative self-efficacy is lower in adolescence, then increases in early adulthood and drops in late adulthood. In the case of creative personal identity, more visible changes are observed in adolescence, suggesting that school and development may have an important influence on this aspect

of the creative self-concept. Social influences of both creative self-efficacy and creative personal identity are well justified theoretically in cases of vicarious experiences in role models and in cases of social persuasion by teachers, parents or peers; for instance, in Bandura's (1997) model of self-efficacy, at least two sources of these characteristics are located in the social sphere (see Karwowski, Gralewski & Szumski, 2015). Thus, exploring the sources of the creative self-concept in adolescence seems theoretically fruitful and practically important.

General Discussion

Coherent with the findings obtained within developmental (Wigfield, Eccless et al., 1997) and educational (Marsh et al., 1998) psychology showing growing specificity of the self-concept and age-related changes, quite a similar pattern was observed in the case of the creative self-concept. Previous research (Ligeza, 2005) has shown that knowledge (representations) about creativity develops with age and is fully available to children at about 10 years of age. In the pilot study presented above, there were clear differences in the overall self-concept and the place of creativity in this self-concept for a 5.5- and an 8-year old boy. Similarly, among children aged 10-12, the best model fit was observed in the less-restricted factor analysis models, that is, exploratory structural equation models in standard and bi-factor forms, allowing different items to load on both creative self-efficacy and creative personal identity constructs. Hence, although the reliable and valid measurement of creative self-concept variables is probably possible among children, it is not easy, because of the immature character of creative self-concept.

Cross-sectional Study 3 demonstrated that although creative self-efficacy and creative personal identity are generally stable across different age groups, this stability does not mean a complete lack of change (see Karwowski, in press, for the longitudinal results). The period of the most interesting changes seems to take place from late adolescence to early adulthood, when a clear increase in creative self-concept is observed. The opposite pattern, a decrease in creative self-concept, was demonstrated among people in late adulthood. None of the studies presented above analyzed changes in the creative self-concept specifically during school-especially elementary and middle-school years -although the academic self-concept literature shows a clear decline over this period (Wigfield, Eccless et al., 1997). This gap should be filled by future studies. Probably the most important question concerns the mechanisms behind, and the moderators of, the observed change. Are changes a sign of general maturity or are they associated with creative output: activity, achievement or recognition? Having in mind a reciprocal relationship between creative self-efficacy and creative achievement (Barron & Harrington, 1981), it may be safely hypothesized that this early creative success influences the increase

of creative self-efficacy in late adolescence-early adulthood, and it is lack of continued creative activity that leads to the drop in the creative personal identity and creative self-efficacy among older adults. These predictions, however, are yet to be tested.

Limitations and Future Studies

Future studies further exploring the issues raised in this paper should probably focus specifically on the transition period between adolescence, adulthood and medium-to-late adulthood in terms of changes in self-concept, as well as on the role of creative activity and creative achievement, as possible moderators of these changes. Such studies require strong designs, for example, longitudinal or cross-sequential and analytical solutions (i.e. latent growth curve modelling).

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