

Positive and negative life experiences and changes in internal working models of attachment – a comparative study

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Summary

Aim. One of the most important questions in personality psychology and psychopathology is whether working models of attachment change during lifetime. It is assumed that early childhood experiences influence the formation of secure or insecure internal working models of attachment. The belief that attachment representations formed in childhood are relatively stable is no longer so obvious: new reports have appeared, according to which important life experiences may lead to a change in attachment style from insecure to secure or the other way around. The main aim of the present project was to investigate whether and in what manner positive and negative life experiences lead to changes in internal working models of attachment.

Method. The specific style of attachment to mother, father, partner, and friend was measured with the ECR-RS, while global attachment was assessed based on the SAAM and ECR-RS G. The number and intensity of positive and negative life experiences was assessed by means of the LES-M. We analyzed the results for a sample of 156 adults.

Results. The study revealed significant relations between the level of positive life experiences and global and specific styles of attachment to a friend and partner. However, no significant relationships were observed between the intensity of negative life events and attachment style. Between-group comparisons showed that in the group in which a change of attachment style from insecure to secure had taken place the experience of positive events was significantly stronger than in the group in which there had been no such change. The compared groups did not differ in the level of negative life experiences.

Conclusions. The study supports the hypothesis about a change of global attachment style and selected specific aspects of insecure attachment to a secure style as a result of experiencing positive life events.

Key words: changes in attachment style, positive and negative life experiences

Introduction

The author of attachment theory, John Bowlby [1], assumed that a child's early experiences in the relationship with mother and father are internalized, giving rise to secure or insecure attachment representations, which determine the ways of adapting to the surrounding reality. Internal working models of attachment stabilize in the early years of life and become a source of beliefs, expectations and feelings about oneself and about other people [2–4]. In the case of secure attachment style, characterized by a low level of attachment-related anxiety (ANX) and a low level of attachment-related avoidance (AVO), those beliefs and feelings are positive, and when the insecure style dominates (high levels of ANX, AVO or both, ANX and AVO), they are negative [5, 6]. To a considerable extent, attachment style determines the ability to regulate emotions and to mentalize (i.e., to engage in reflection); it also largely determines the patterns of social relations, especially with the family members [7–13]. Despite the adaptivity of insecure attachment styles in childhood, in subsequent stages of the individual's life they may turn out to be a source of pathomechanisms, underlying numerous mental and conduct disorders [14–23], particularly in people displaying disorganized strategies, characterized by high levels of ANX and AVO [8, 9, 12, 24–26]. Significant differences were also found between the attachment style and biological processes related to, among others, the stress response, the functioning of the circulatory system or the immune response [23, 27].

Social situations often activate the global or specific attachment style, which unconsciously and automatically triggers the corresponding emotional and motivational mechanisms and the corresponding pattern of interpersonal functioning (seeking or avoiding a relationship) [28–31]. In the literature, there are two ways of conceptualizing global attachment style, defined as the generalized reflection of numerous bonds with significant others, formed as a result of both past and more current interactions. These are the hierarchical model and the integrative model of the attachment representation network. In both models, it is assumed that this representation is a relatively stable element (trait) of personality and that the experience of a current relationship with a significant other can be described both from the perspective of global attachment style (secure or insecure) and from the perspective of specific attachment style, associated with a particular person (e.g., the partner) or group of people (e.g., friends) and with a specific relationship context. In the first model, it is assumed that the global attachment style develops and consolidates in childhood and that in the subsequent stages of life, as a result of significant relations with other people, it undergoes internal differentiation, taking the form of an increasingly hierarchical structure of a network of object relations [15, 32, 33]. It is also assumed that the early attachment representations (e.g., representations of child–parent attachment) have a stronger impact on

behavior than those which develop later in life [11]. In the integrative model, global attachment is the product of all specific attachments formed by the individual in his or her life cycle [34, 35].

Previous studies reported a relatively high stability of the global attachment style during life both in children [2] and in adults. It reached 68–75% [36] and increased when the individuals who had experienced a trauma were excluded from the sample [37]. The relative stability of attachment style is explained as stemming from the fact that internal working models are formed early in human development and are subsequently enhanced by repeated experiences with attachment figures. Moreover, in adulthood a person has a tendency to repeat relationships that resemble those from early childhood, and in these relationships he or she expects sequences of events corresponding to the sequences experienced in the past [38–40]. However, the largest study of the last decade showed that the stability of the attachment style is lower than previously thought – in a group of 857 people, only weak correlations were found in the attachment style over the course of several years [3]. Also, the meta-analyses of 127 studies performed by Piquart et al. [41] showed that the stability of attachment to mother, father and other people between childhood and early adulthood decreased at intervals longer than five years, becoming non-significant after a period of 15 years or more.

Other studies demonstrate that even in groups in which relatively stable attachment patterns were observed, fluctuations of those patterns occurred as a result of difficult life events (e.g., parent's death, divorce, caregiver's or child's illness) that were accompanied by negative emotions and a sense of failure to cope with them [42]. Such experiences caused the secure attachment style to weaken in favor of the insecure style. The reverse change, as it turned out, could result from relations with significant others: the romantic partner, friends, or therapists [43, 44]. The study by Fonagy et al. [45] showed that the self-reflection and mentalizing ability acquired during therapy, understood as the ability to perceive one's own and other people's mental states, could change internal working models to more secure ones. These results support the hypothesis that a change in internal working models of attachment can take various paths, and that they stem not only from corrective emotional experiences but also from changes in cognitive and emotional reflection abilities.

To conclude, the currently available research results show that attachment style determines our physical and mental health as well as behavioral patterns. Fluctuations and changes in global and specific attachment styles should be regarded as a phenomenon that occurs as a result of social relations, the passage of time, and life experiences. On this basis, in the current research project we hypothesized that important positive and negative life experiences could contribute to a change in both secure and insecure internal working models of attachment.

Material and methods

The participants in the study were 156 individuals, including 136 psychology students and 20 students attending various schools of psychotherapy. Women constituted 81% of the sample and men accounted for 19%. Approximately 63% of the

participants were aged 18–25 years, 23% – 26–35 years, 11% – 36–45 years, and 3% – 46–55 years. The majority of the participants were in a romantic relationship (62%) and showed moderate (55%) or high (42%) general satisfaction with interpersonal relations. Approximately half of the participants (49%) had experienced a difficult life situation in the past six months.

To measure positive and negative life events, we used *the Life Experiences Survey* (LES) [46] with modifications (LES-M) [47, 48]. In the modified survey, the list included 47 events from the original version, and 10 items – only for American students – had been replaced with nine events reported by Polish students in the pilot study. These events were: starting or giving up school, a training course, or education; changes in relations between parents; infidelity/betrayal of a significant other; meeting a master or spiritual guide; falling victim to aggression or theft; involvement in an accident or catastrophe; change of religious beliefs; starting a new close personal relationship; problems at school, during training courses, or in learning. The participants rated the occurrence of important life events in three periods of life: childhood, adolescence and adulthood. A particular event could be rated positively (0–3 points) and/or negatively (0–3 points) or in both positive and negative terms. Each respondent's results included: (1) the level of positive life events experienced in all periods of life (Positive Life Experiences – PLE); (2) the level of negative life events experienced in all periods of life (Negative Life Experiences – NLE); (3) the balance of the experienced events – the difference between the levels of positive and negative life events in all periods of life (PLE/NLE); (4) the number of experienced events (No. of Life Experiences – NoLE), computed for each period of life: childhood (NoLE-C), adolescence (NoLE-T) and adulthood (NoLE-A); (5) the number of positively experienced events (No. of Positive Life Experiences – NoPLE), computed for each period of life: childhood (NoPLE-C), adolescence (NoPLE-T) and adulthood (NoPLE-A). The values of Cronbach's α for the level of PLE and NLE in the study group were 0.78 and 0.75, respectively.

To assess specific attachment style, we used the inventory called *Experiences in Close-Relationship Structures* (ECS-RS) [43]. The ECR-RS is based on a 7-point Likert scale, consists of 36 items, and measures two dimensions of attachment: attachment-related anxiety (ANX) and avoidance (AVO). This test is the most popular tool for measuring ANX and AVO, used both in clinical trials and among non-clinical populations [6]. In the case of an individual respondent, ECR-RS scores are: (1) the levels of ANX associated with significant others from the past – mother (ANX-M) and father (ANX-F), and the sum of these scores (ANX-MF), and ANX levels associated with significant others in the present – friend (ANX-R) and romantic partner (ANX-P), and the sum of these scores (ANX-RP); (2) the levels of AVO associated with significant others from the past – mother (AVO-M) and father (AVO-F), and the sum of these scores (AVO-MF), and AVO levels associated with significant others in the present – friend (AVO-R) and romantic partner (AVO-P), and the sum of these scores (AVO-RP); (3) the level of insecure dimensions of attachment from the past – expressed as the sum of ranks of ANX-MF and AVO-MF (ANX/AVO-MF); (4) the levels of change in attachment style over time for each dimension – expressed as ANX change, being the difference between ANX-MF and ANX-RP (ANX-D), and AVO change, being

the difference between AVO-MF and AVO-RP (AVO-D); (5) the level of change in attachment style over time for both dimensions taken together – expressed as the sum of ranks of ANX-D and AVO-D (ANX/AVO-D). We used the Polish version of the questionnaire, adapted by Monika Marszał [49], for which Cronbach's α values ranged from 0.79 to 0.90, depending on the specific relationship. In the English version, the reliability of the tool ranged between 0.85 and 0.91 (Cronbach's α) [43].

Global attachment style was assessed with *the State Adult Attachment Measure* (SAAM [50]), measuring the level of attachment-related security (SEC), anxiety (ANX), and avoidance (AVO) in responses to 21 items inducing the relevant emotional state in individuals. In the original study, the reliability of the tool ranged from 0.83 to 0.87 (Cronbach's α) depending on the scale. In our study, the values of Cronbach's α for the ANX, AVO and SEC dimensions were 0.83, 0.80 and 0.90 for the SAAM, respectively.

Additionally, we used a supplement to the ECR-RS (namely, ECR-RS G [51]), which consists of nine items concerning the ANX (6 items) and AVO (3 items) dimensions in general relations with other people. Cronbach's α values for this test in our study reached 0.97 and 0.99 for ANX and AVO, respectively. Both the ECR-RS G and SAAM are based on a 7-point Likert scale. Both tests reflect the relationships between many types of attachment formed through interactions with significant others throughout the individual's lifetime.

Criteria for distinguishing the comparison groups

In order to distinguish the participants in whose case there had been a change in attachment style on the attachment-related anxiety (ANX) and avoidance (AVO) dimensions, we identified 66 individuals with the highest (groups with a dominant insecure attachment style (IS): ANX-MF-IS, AVO-MF-IS) and the lowest (groups with a dominant secure attachment style (S): ANX-MF-S, AVO-MF-S) ANX-MF and AVO-MF scores. The results of the group of participants ($n = 19$) with medium scores were not included in further comparisons. We then sorted the results according to the values of ANX-D and AVO-D, dividing each group into two subgroups of 30 participants with the highest and the lowest scores, excluding six participants with medium scores. Additionally, among the 30 participants with the highest scores, we distinguished groups of individuals who scored below 3 points on ANX-R and ANX-P for the ANX dimension and on AVO-R and AVO-P for the AVO dimension, thus eventually identifying the groups of participants in whose case there had been a change of attachment style from insecure to secure: ANX-IS/S, $n = 18$ and AVO-IS/S, $n = 27$, and the groups of participants whose originally secure attachment style was not observed to have changed: ANX-S/S, $n = 30$ and AVO-S/S, $n = 29$. Among the 30 participants with the lowest scores, we selected those individuals in whose case at least one score on a particular dimension for present-time attachment figures was equal to or higher than 3; we thus obtained two groups in which there had been a change of attachment style from secure to insecure: ANX-S/IS, $n = 22$, and AVO-S/IS, $n = 13$, and groups of participants whose originally insecure attachment style was

not observed to have changed: ANX-IS/IS, $n = 30$, and AVO-IS/IS, $n = 21$. In total, 100 and 90 people participated in the between-group analyses for the ANX and AVO dimensions, respectively.

We also divided the participants according to change in both dimensions of attachment. We applied a two-step procedure of distinguishing groups, based on sorting ranks: (1) for currently experienced attachments ANX/AVO-MF – we distinguished the ANX/AVO-MF-IS group ($n = 66$) and the ANX/AVO-MF-S group ($n = 66$), after excluding the participants with medium scores ($n = 19$); (2) for ANX/AVO-D – after excluding the medium values ($n = 6$) from the ANX/AVO-MF-IS group, we distinguished the group of participants in whose case there had been a change of attachment style from insecure to secure, consisting of individuals whose scores were lower than 3 for ANX-R, ANX-P, AVO-R, and AVO-P (ANX/AVO-IS/S, $n = 14$), and the group in which insecure attachment had been maintained, consisting of individuals in whose case at least two out of four values (ANX-R, ANX-P, AVO-R, AVO-P) were equal to or higher than 3 (ANX/AVO-IS/IS, $n = 26$). After excluding the medium values ($n = 6$) from the ANX/AVO-MF-S group, we distinguished the group of participants in whose case no change in the secure attachment style had been observed, consisting of individuals whose scores on ANX-R, ANX-P, AVO-R, and AVO-P were lower than 3 (ANX/AVO-S/S, $n = 25$), and the group of participants whose secure attachment style had changed to insecure and in whose case at least two out of four values (ANX-R, ANX-P, AVO-R, AVO-P) were equal to or higher than 3 (ANX/AVO-S/IS, $n = 12$). In total, 77 people participated in the between-group analyses for the ANX/AVO dimension.

Results

The LES-M scores of the whole sample show that the number of life experiences was 155 for childhood (NoLE-C), 583 for adolescence (NoLE-T) and 1817 for adulthood (NoLE-A). The most positively evaluated event was “beginning or giving up school, a training course, or education” ($\bar{x} = 1.73$; $s = 1.30$), and the most negatively evaluated one was “the death of a close family member” ($\bar{x} = 1.05$; $s = 1.30$). Descriptive statistics for the positive (PLE) and negative (NLE) life events, as well as the balance of the experienced events (PLE/NLE) are included in Table 1. Overall, the results ranged from 0 to 66 for PLE ($\bar{x} = 21.41$; $s = 12.81$) and from 0 to 68 for NLE ($\bar{x} = 16.77$; $s = 11.65$). The values of PLE/NLE for the study group ranged from – 25 to 49 ($\bar{x} = 4.64$; $s = 13.94$).

Table 1. Descriptive statistics for the LES-M

		n	Minimum	Maximum	\bar{x}	s	Skewness/s	Kurtosis/s	K-S test
LES-M	PLE	155	0.00	66.00	21.41	12.81	0.78/0.19	0.25/0.39	0.125***
	NLE	155	0.00	68.00	16.77	11.65	1.27/0.19	2.63/0.39	0.101***
	PLE/NLE	155	-25.00	49.00	4.64	13.94	0.39/0.19	0.42/0.39	0.066

*** $p < .001$; K-S test – Kolmogorov–Smirnov test

Descriptive statistics for ECR-RS scores are presented in Table 2. Comparing the means for specific attachment figures, the values were the lowest for father and mother on the attachment-related anxiety (ANX) dimension: 1.94 in both cases, while for attachment-related avoidance (AVO) these values were the highest: 3.05 (AVO-M) and 4.10 (AVO-F). Reflecting the differences between the scores for mother and father (MF) and the scores for friend and romantic partner (RP), we obtained negative (-1.36) and positive values (2.90) for ANX-D and AVO-D, respectively. Further analysis revealed an increase in ANX-RP values in relation to ANX-MF for 91 participants, a decrease for 30, and no change for 30 participants. The trend was different for the AVO dimension, where 128 participants scored lower on AVO-RP, as against 21 participants in whose case we found an increase, and two individuals with no change between AVO-MF and AVO-RP scores. Spearman's rho coefficient revealed a moderately weak positive correlation between ANX-MF and AVO-MF ($r_s = 0.47$; $p < 0.001$) and between ANX-RP and AVO-RP ($r_s = 0.37$; $p < 0.001$). Past attachment style also explained the nature of present-time attachment to a moderately weak extent in the case of the ANX dimension ($r_s = 0.41$; $p < 0.001$), and to a weak extent for the AVO dimension ($r_s = 0.22$; $p < 0.01$) and for the relationship between AVO-MF and ANX-RP ($r_s = 0.28$; $p < 0.01$). We did not observe statistically significant correlations between the values of ANX-MF and AVO-RP.

Table 2. Descriptive statistics for specific attachment style

	n	Minimum	Maximum	\bar{x}	s	Skewness/s	Kurtosis/s	K-S test	
ECR-RS	ANX-M	156	1.00	6.33	1.94	1.33	1.59/0.19	1.88/0.39	0.253***
	ANX-F	153	1.00	7.00	1.94	1.40	1.790/0.20	2.91/0.39	0.272***
	ANX-R	155	1.00	7.00	2.34	1.51	1.15/0.19	0.67/0.39	0.189***
	ANX-P	156	1.00	7.00	2.90	1.72	0.58/0.19	-0.69/0.39	0.147***
	ANX-MF	153	2.00	12.67	3.84	2.30	1.66/0.20	2.94/0.39	0.212***
	ANX-RP	155	2.00	12.00	5.23	2.73	0.67/0.19	-0.45/0.39	0.118***
	ANX-D	152	-9.33	8.00	-1.36	2.96	0.37/0.20	1.31/0.39	0.133***
	AVO-M	156	1.00	7.00	3.05	1.56	0.63/0.19	-0.50/0.39	0.105***
	AVO-F	153	1.00	7.00	4.10	1.74	0.10/0.20	-1.01/0.39	0.072
	AVO-R	155	1.00	6.17	2.22	1.03	1.15/0.19	1.41/0.39	0.146***
	AVO-P	156	1.00	6.17	2.08	1.16	1.56/0.19	2.18/0.39	0.201***
	AVO-MF	153	2.00	14.00	7.16	2.79	0.29/0.20	-0.54/0.39	0.73*
	AVO-RP	155	2.00	10.17	4.28	1.74	1.01/0.19	0.50/0.39	0.141***
	AVO-D	152	-2.00	11.33	2.90	2.88	0.70/0.20	0.10/0.39	0.089**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; K-S test – Kolmogorov–Smirnov test

Descriptive statistics for scores on the global attachment style (SAAM and ECR-RS G) are presented in Table 3. For the SAAM, the mean scores were the highest on the

SEC dimension (5.47), followed by ANX (4.35) and AVO (2.36). ANX and AVO mean scores for the ECR-RS G were similar: 3.03 and 3.01, respectively. The comparison of the SAAM and ECR-RS G revealed inverse, moderate or moderately weak relations between SEC-SAAM and the following dimensions: AVO-SAAM ($r_s = -0.50$; $p < 0.01$), ANX-ECR-RS G ($r_s = -0.42$; $p < 0.01$), and AVO-ECR-RS G ($r_s = -0.49$; $p < 0.01$). ANX-SAAM scores were related only to the ANX-ECR-RS G dimension ($r_s = 0.39$; $p < 0.01$), whereas AVO-SAAM scores correlated significantly positively with the dimensions of the ECR-RS G: AVO ($r_s = 0.41$; $p < 0.01$) and ANX ($r_s = 0.36$; $p < 0.01$). AVO and ANX scores for the ECR-RS G were positively and weakly correlated ($r_s = 0.31$; $p < 0.01$), as opposed to SAAM scores, for which we found no significant correlations.

Table 3. Descriptive statistics for global attachment style

	n	Minimum	Maximum	\bar{x}	s	Skewness/s	Kurtosis/s	K-S test
SEC-SAAM	156	1.57	7.00	5.47	1.16	-0.77/0.19	0.23/0.39	0.105***
ANX-SAAM	156	1.14	7.00	4.35	1.31	-0.11/0.19	-0.55/0.39	0.050
AVO-SAAM	156	1.00	5.43	2.36	1.06	0.91/0.19	0.20/0.39	0.144***
ANX-ECR-RS G	136	1.00	7.00	3.03	1.75	0.52/0.21	-0.83/0.41	0.142***
AVO-ECR-RS G	136	1.00	6.67	3.01	1.24	0.49/0.21	-0.14/0.41	0.085*

* $p < 0.05$; *** $p < 0.001$; K-S test – Kolmogorov–Smirnov test

Positive and negative life experiences as related to specific attachment style

The values of Spearman's rho coefficient showed significant negative correlations between the level of positive life experiences (PLE) and the scores obtained for the friend figure on ANX ($r_s = -0.17$) and AVO ($r_s = -0.23$; Table 4). Negative correlations were also found between PLE and ANX-RP scores ($r_s = -0.18$). For the same dimension, there was also a statistically significant though weak relationship between the balance of positive and negative life experiences (PLE/NLE) and scores on the ANX-R ($r_s = -0.23$), ANX-RP ($r_s = -0.21$) and ANX-D scales ($r_s = 0.16$). These data show that specific attachment to both present-time attachment figures on the ANX dimension and to the friend figure on the AVO dimension are significantly related to positive life experiences but not to negative ones. Additionally, we observed correlations of ANX-P, ANX-RP and ANX-D with PLE/NLE.

Table 4. Spearman's rho coefficient for ECR-RS and LES-M scores

	ECR-RS ANX						
	ANX-M	ANX-F	ANX-R	ANX-P	ANX-MF	ANX-RP	ANX-D
PLE	0.000	-0.060	-0.173*	-0.156	-0.055	-0.181*	0.146
NLE	0.041	-0.078	-0.024	0.146	0.012	0.101	-0.087
PLE/NLE	-0.035	-0.005	-0.119	-0.231**	-0.038	-0.214**	0.163*

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	ECR-RS AVO						
	AVO-M	AVO-F	AVO-R	AVO-P	AVO-MF	AVO-RP	AVO-D
PLE	0.007	-0.015	-0.228**	-0.047	-0.009	-0.148	0.059
NLE	0.051	0.147	-0.017	0.082	0.119	0.052	0.051
PLE/NLE	-0.071	-0.121	-0.143	-0.096	-0.112	-0.139	-0.001

* $p < 0.05$; ** $p < 0.01$; two-tailed significance

Positive and negative life experiences as related to global attachment

PLE and PLE/NLE values were positively correlated with the level of security SEC-SAAM ($r_s = 0.28$ and 0.34) and negatively correlated with ANX-ECR-RS G ($r_s = -0.24$ and -0.29) and AVO-ECR-RS G ($r_s = -0.18$ and -0.19 ; Table 5). Moreover, we found a negative relationship between PLE/NLE and AVO-SAAM ($r_s = -0.21$). These data show significant though weak associations of individuals' global attachment with the sum of positive life experiences and the balance of positive and negative life experiences.

Table 5. Spearman's rho coefficient for the SAAM and ECR-RS G and LES-M scores

	SEC-SAAM	ANX-SAAM	AVO-SAAM	ANX-ECR-RS G	AVO-ECR-RS G
PLE	0.285**	-0.150	-0.157	-0.244**	-0.184*
NLE	-0.111	-0.056	0.100	0.150	0.064
PLE/NLE	0.340**	-0.083	-0.206*	-0.292**	-0.186*

* $p < 0.05$; ** $p < 0.01$; two-tailed significance

Positive and negative life experiences as related to changes in global attachment style

Based on ECR-RS scores, we distinguished groups differing in the change of attachment style for past and present significant others on the dimensions of attachment-related anxiety (ANX) and attachment avoidance (AVO). We checked if these groups differed in terms of change in the global attachment style and if these changes could be determined by the experience of positive or negative life events or by the balance of positive and negative ones. The Mann-Whitney test revealed statistically significant differences for the AVO dimension between the participants whose attachment style had changed from insecure to secure (AVO-IS/S group) and the participants who exhibited insecure attachment to past and present attachment figures (AVO-IS/IS group) in terms of global attachment scores on SEC-SAAM (mean ranks: 28.31 vs. 19.60; $p < 0.05$), AVO-SAAM (mean ranks: 19.24 vs. 31.26; $p < 0.01$) and AVO-ECR-RS G (mean ranks: 17.80 vs. 26.83; $p < 0.05$).

In the case of groups differentiated by the level of ANX, we observed statistically significant differences not only for the ANX-IS/S and ANX-IS/IS groups (SEC-SAAM,

mean ranks: 34.67 vs. 18.40; $p < 0.001$; AVO-SAAM, mean ranks: 17.56 vs. 28.67; $p < 0.01$; AVO-ECR-RS G, mean ranks: 15.75 vs. 26.36; $p < 0.01$; and ANX-ECR-RS G, mean ranks: 11.22 vs. 28.95; $p < 0.001$) but also for groups with secure attachment to mother and father, ANX-S/S and ANX-S/IS (AVO-SAAM, mean ranks: 22.85 vs. 31.48; $p < 0.05$ and ANX-ECR-RS G, mean ranks: 17.09 vs. 28.43; $p < 0.01$). We also found statistically significant differences in LES-M PLE/NLE for the ANX-IS/S and ANX-IS/IS groups (mean ranks: 30.00 vs. 21.20; $p < 0.05$), with a tendency for individuals with a secure style of attachment to currently significant others to score higher on PLE.

In view of the positive correlation between the scores on attachment-related anxiety and attachment-related avoidance (between ANX-MF and AVO-MF and between ANX-RP and AVO-RP), we decided to distinguish four groups: ANX/AVO-IS/S, ANX/AVO-S/S, ANX/AVO-IS/IS, and ANX/AVO-S/IS, differing in scores on both dimensions of attachment. The Kruskal–Wallis test revealed a number of statistically significant differences between the groups (Figure 1). Significant differences were found both for ECR-RS specific attachment variables and for global attachment scales: SEC-SAAM and AVO-SAAM as well as ANX-ECR-RS G and AVO-ECR-RS G. Particularly large differences were observed for ECR-RS G and SAAM scores in the case of participants from the ANX/AVO-IS/IS and ANX/AVO-S/S groups whose specific attachment style had not changed on the past–present dimension. Importantly, changes in the attachment style for the ANX/AVO-IS/S group as compared to the ANX/AVO-IS/IS group were accompanied by significantly higher scores on PLE LES-M, with no differences in the level of negative life experiences (NLE; Figure 2).

Additionally, we compared the groups that had the same past attachment style but different present attachment styles (ANX/AVO-IS/S with ANX/AVO-IS/IS and ANX/AVO-S/S with ANX/AVO-S/IS). Mann–Whitney test results revealed statistically significant differences between the groups with originally insecure attachment style, ANX/AVO-IS/S and ANX/AVO-IS/IS, for the SEC-SAAM (mean ranks: 30.21 vs. 15.27; $p < 0.001$) and AVO-SAAM scales (mean ranks: 13.14 vs. 24.46; $p < 0.01$) and for AVO-ECR-RS G (mean ranks: 13.38 vs. 22.68; $p < 0.05$) and ANX-ECR-RS G (mean ranks: 9.19 vs. 24.86; $p < 0.001$). The ANX/AVO-S/S and ANX/AVO-S/IS groups differed significantly from each other in terms of scores on the AVO-SAAM (mean ranks: 16.32 vs. 24.58; $p < 0.05$) and ANX-ECR-RS G dimensions (mean ranks: 12.63 vs. 21.33; $p < 0.01$). The observed differences also co-occurred with a different level of positive life experiences in the ANX/AVO-IS/S group and in the ANX/AVO-IS/IS group (mean ranks of the PLE scale: 27.36 vs. 16.81; $p < 0.01$). These results suggest a relationship between the change of attachment style from insecure to secure with various positive life experiences.

In the next step, we checked in which period of life individuals from the ANX/AVO-IS/S, ANX/AVO-IS/IS, ANX/AVO-S/S, and ANX/AVO-S/IS groups had experienced positive life events. Kruskal–Wallis test results revealed significant differences in the number of positive experiences in adolescence and adulthood between the tested groups (Figure 3). Moreover, the Mann–Whitney test revealed that individuals whose attachment style was observed to have changed towards secure (ANX/AVO-IS/S) referred

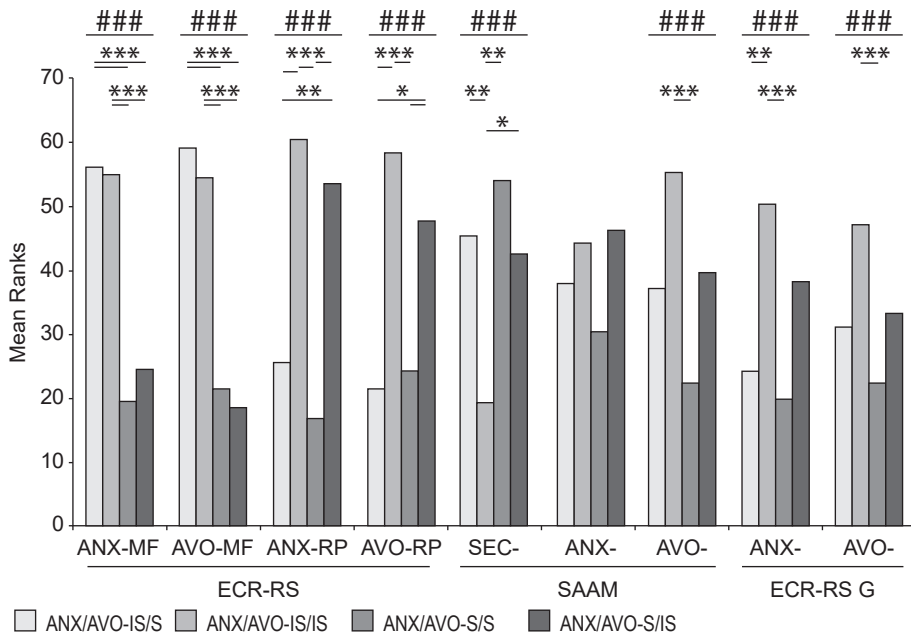


Figure 1. Changes in specific attachment style as related to global attachment style.

Statistics for ECR-RS, SAAM, and ECR-RS G ordinal data were computed by means of the Kruskal–Wallis test. * $p < 0.05$; ## and ** $p < 0.01$; ### and *** $p < 0.001$

to positive experiences in adulthood significantly more often than individuals who showed an insecure attachment style (ANX/AVO-IS/IS; mean ranks: 26.75 vs. 17.13; $p < 0.05$). Interestingly, a similar tendency was observed for the ANX/AVO-S/S group as compared to ANX/AVO-S/IS. The groups with a present-time secure attachment style also less often referred to positive experiences from childhood and adolescence.

Next, we checked which of the positively experienced life events might have changed the insecure working models of attachment into secure ones. The values of Student's t -test revealed statistically significant differences between the ANX/AVO-IS/S and ANX/AVO-IS/IS groups in the levels of four types of events: “change of employment status” ($\bar{x} = 1.57$ vs. 0.88; $F = 0.053$, $p = 0.819$; $t = 2.15$, $df = 38$, $p < 0.05$), “change of place of residence” ($\bar{x} = 2.07$ vs. 1.15; $F = 0.188$, $p = 0.667$; $t = 2.13$, $df = 38$, $p < 0.05$), “change in the number of arguments with the spouse/partner” ($\bar{x} = 1.00$ vs. 0.12; $F = 62.85$, $p < 0.001$; $t = 2.28$, $df = 14.32$, $p < 0.05$), and “moving out of the family home” ($\bar{x} = 1.86$ vs. 0.92; $F = 4.353$, $p > 0.05$; $t = 2.08$, $df = 21.55$, $p < 0.05$).

Groups with different attachment styles and controlled extraneous variables

Cramer's V contingency coefficients revealed statistically significant relations between ANX/AVO-IS/S, ANX/AVO-IS/IS, ANX/AVO-S/S, and ANX/AVO-S/IS

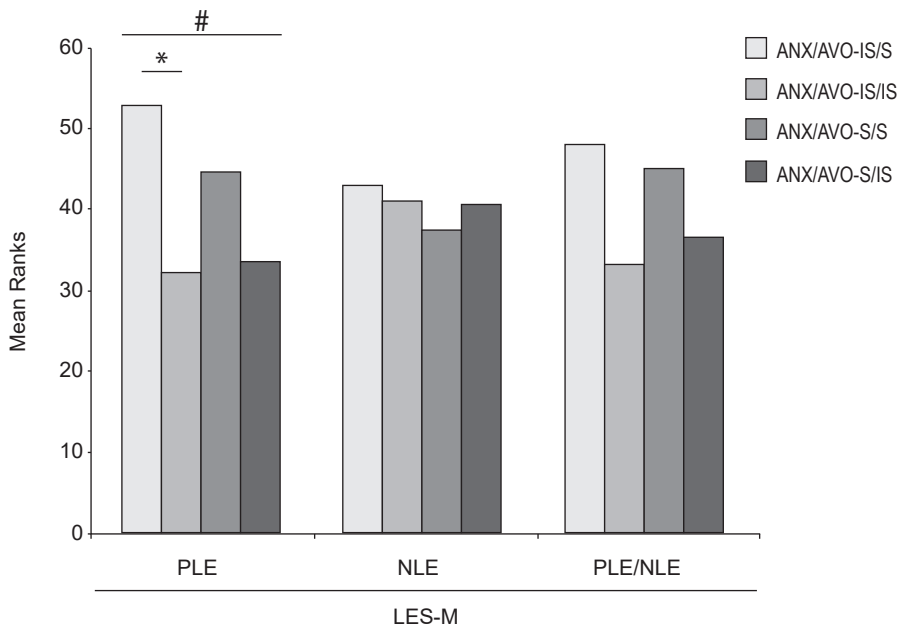


Figure 2. **Positive life experiences determine the change from insecure to secure attachment style**

Statistics were computed by means of the Kruskal–Wallis test. * and # $p < 0.05$

groups and the variables of “sex” ($V = 0.38$; $p < 0.05$), “education level” ($V = 0.33$; $p < 0.05$), “being in a romantic relationship” ($V = 0.32$; $p < 0.05$), “relationship satisfaction” ($V = 0.32$; $p < 0.05$), and “difficult situation in the last six months” ($V = 0.40$; $p < 0.01$). Determination coefficients for the above relations were 15%, 11%, 10%, 10%, and 16%, respectively.

The results showed that among those participants whose attachment style had changed from insecure to secure (ANX/AVO-IS/S) there were more women than in the ANX/AVO-IS/IS group (86% as against 58%). Moreover, these individuals usually had higher education (43% as against 19%), were more often in a relationship or married (64% as against 38%), were more satisfied with interpersonal relations (64% as against 23%), and had not experienced a difficult life situation in the past six months (57% as against 80%). We observed similar results in the case of participants who maintained a secure attachment style in adulthood (ANX/AVO-S/S) and in the case of those whose attachment had changed to insecure (ANX/AVO-S/IS). This was the case mostly for “education level” (52% as against 17%) and “relationship satisfaction” (60% as against 33%).

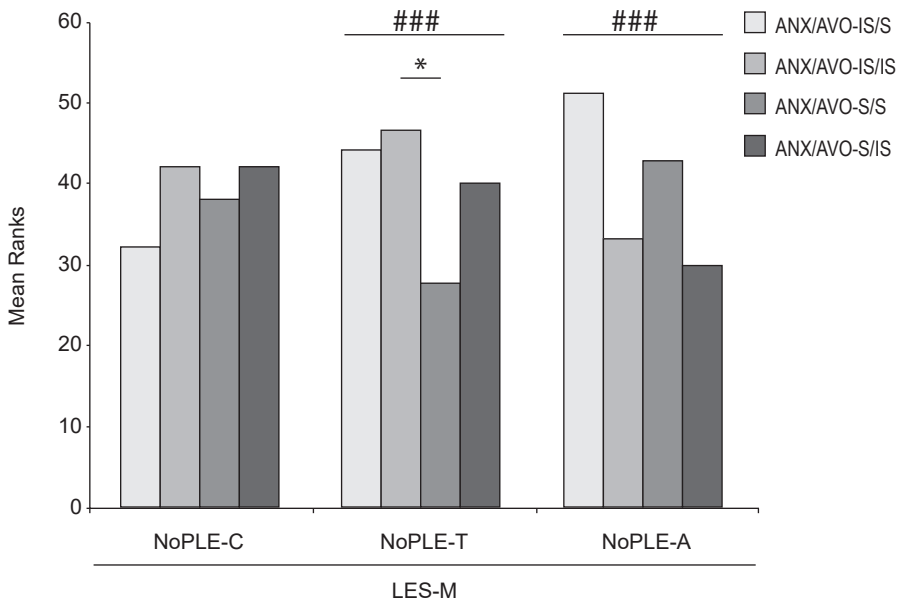


Figure 3. Positive experiences in adolescence and adulthood differentiate individuals with insecure and secure attachment styles

Statistics for LES-M ordinal data were computed by means of the Kruskal–Wallis test. Kruskal–Wallis test results: * $p < 0.05$ and *** $p < 0.001$

Discussion

Internal working models defined as specific (contextual) and global attachment styles play a crucial role in conditioning individual behavioral patterns and mental and physical health [14–27]. Previous studies indicated that despite the relative formation of the attachment style in the early stages of life, it may change under the influence of important life events from insecure to secure or vice versa [15, 29, 44, 45, 52, 53]. It is very difficult to verify the hypothesis about the influence of positive and negative life events, as it requires many years of longitudinal research. In our research, we used an innovative procedure that consists of the analysis of the global and specific attachment styles to parental figures (representation of the past attachment style) and partner and friend (representation of the present attachment style), testing whether a putative change in the attachment style along the past-present dimension could be influenced by certain life events. Change of the specific attachment style over time for the attachment-related anxiety (ANX) and attachment avoidance (AVO) was inferred based on the ECR-RS questionnaire [43]. Global attachment style was measured with the SAAM [50] and by means of the G index in the ECR-RS [43, 51]. The number and level of positive and negative experiences in different periods of life – childhood, adolescence and adulthood – were assessed with a modified version of the LES (LES-M) [46].

The results of our analyses are consistent with the results of some longitudinal studies revealing weak stability of the attachment style over time [3, 41]. We observed significant relations between the specific style of attachment to significant others from the past and from the present on both dimensions: attachment avoidance (AVO; $r_s = 0.22$; weak relationship) and attachment-related anxiety (ANX; $r_s = 0.41$; moderate relationship). The level of insecure attachment to father and mother explained 5% of AVO scores and 17% of ANX scores for the current attachment figures. Interestingly, the level of AVO for mother and father also explained 8% of ANX scores for romantic partner and friend ($r_s = 0.28$; weak relationship). The reverse relationship was not observed. Nevertheless, a significant change in the attachment style on the past-present dimension was demonstrated, both in terms of ANX, AVO, and for both of them (ANX/AVO). In particular, there was a change in the attachment style from insecure to secure for the ANX, AVO, and ANX/AVO dimensions in 18 (11.92%), 27 (17.88%) and 14 (9.27%) individuals, respectively. In turn, a change of the attachment style in the opposite direction was shown for 22 (ANX; 14.57%), 13 (AVO; 8.61%) and 12 (ANX/AVO; 7.95%) individuals.

The change in the specific attachment style was accompanied by modification in the global attachment, which indicates the possibility of increasing the trust in oneself and other people, not only in the process of psychotherapy and therapeutic relationship but also upon natural life events. In consequence, in various interpersonal and task-oriented situations, a greater readiness to activate secure attachment patterns and more adaptive mechanisms of emotional regulation and mentalization ability emerge. Importantly, in individuals displaying a change of a specific insecure towards secure attachment style (ANX/AVO-IS/S), the level of secure global attachment was similar to the level in participants with a secure attachment style throughout the lifetime (ANX/AVO-S/S; Figure 1).

The observed relations between the scores in questionnaires measuring the global attachment style showed that the SAAM [50] could be a useful complement for ECR-RS G scores [51], because apart from measuring insecure attachment it can be used to assess the level of the individuals' trust towards other people and a sense of security. There were high negative correlations between the level of security (SEC-SAAM) and attachment-related anxiety (ANX-ECR-RS G) as well as attachment avoidance (AVO-ECR-RS G). These results confirm clinical observations indicating that on the one hand individuals showing a greater level of self-trust are able to create and maintain close and intimate relationships with important people, and, on the other hand, they are not afraid of breaking out of 'toxic' relationships, often based on abuse.

There were no conclusive results regarding the impact of positive (PLE) and negative life events (NLE) on the change of attachment style in groups distinguished by one dimension, ANX or AVO. In contrast, when the division of the respondents was applied taking into account both dimensions (ANX/AVO), it turned out that a modification of the attachment style towards secure was observed in individuals that had experienced positive life events (PLE), whereas significant changes as a result of negative experiences (NLE) were not observed (Figure 2). What is important, the results of statistical analyses (Glass biserial correlation coefficients for the Mann-Whitney test) for the

group of participants whose attachment style had changed from insecure to secure (ANX/AVO-IS/S) showed a moderate/high effect of positive experiences ($r_g = 0.53$) compared to the participants in whose case there had been no such change (ANX/AVO-IS/IS). It is also worth noting that the level of PLE was positively correlated with the level of security and inversely proportional to the scores on AVO and ANX in the ECR-RS G questionnaire (Table 5) and on the AVO and ANX dimensions for attachment figures from the current life, above all for the friend figure (5% and 3%, respectively; Table 4).

It turned out that the level of NLE was not significantly related to change in global attachment style, which indicates that the experience of such events has a significantly weaker effect on changes in specific attachment than PLE. Two hypotheses can be put forward – either the experienced events did not evoke such extremely negative feelings, or the strength of the secure attachment in the respondents allowed for their adequate mentalization. While in childhood, as transactionists often emphasize, “the moment of unconditional hatred (in a relationship) means more than an hour of love”, in adulthood it does not have such power [54, p. 31]. The results indicate that the experience of positive events in adulthood favors a change in the global attachment style. This has important implications for the therapeutic interactions, attributing great importance to the corrective influence of a sufficiently good therapeutic relationship on the attachment representation. It should be stressed that in groups distinguished according to ANX/AVO, the least numerous consisted of participants whose attachment style had changed from secure to insecure despite negative experiences. This supports the hypothesis about the protective role of the secure attachment style in the process of integrating difficult life experiences into the existing mental structure [15].

It turned out that, of all the investigated life experiences, four types of events significantly differentiated the groups in which the original attachment style had been insecure (ANX/AVO-IS/S and ANX/AVO-IS/IS), namely: “change of occupational status”, “change of place of residence”, “a lot more or a lot less arguments with the spouse/partner”, and “moving out of the family home”. The values of Cohen’s d were as follows, respectively: $d = 0.11, 0.11, 0.32, 0.19$, which shows the low effect of each of the above events. We have found that a decrease in the level of experiences such as “argument with the spouse/partner” can have a positive effect on the activation of a more secure attachment representation in the individual and that it leads to the consolidation and enhancement of the sense of “having a secure base” (with the partner as a secure base) [4, 55–58]. Moving out of the family home and a change of the place of residence in which one has experienced many difficult and dangerous events are actions that enhance the sense of agency with regard to protecting oneself against the negative influence of the family home (with parent figures as the insecure base). This enhances self-efficacy and the sense of control over negative life experiences, which probably contributes to changes in the way of perceiving oneself and the social environment [49, 59]. Higher self-efficacy [60] is of great significance for the way in which one perceives the surrounding reality. The results show that individuals whose attachment style has changed towards more secure evaluate their current situation more positively than those in whom no such change has been observed (Figure 3). In the

latter group, we observed an increased tendency to refer to positive events from other periods of life despite the dominance of the insecure attachment style. This tendency is probably related to the fact that the sample includes a group of students, who mostly strive to improve their life situation to more positive and developing.

Interesting results were also provided by the analysis of controlled extraneous variables in the groups distinguished on the basis of change in both dimensions of attachment (ANX/AVO). The participants whose attachment was observed to have evolved from insecure to more secure were mostly women, with higher education, living in a romantic relationship, and generally satisfied with interpersonal relations. Moreover, these participants had not experienced difficult life events in the past six months. In accordance with Fraley et al. [43], our results show that these women simultaneously experienced a higher level of attachment-related anxiety and a lower level of attachment avoidance, which may favor the maintenance of more dependency-based social relations in which all kinds of conflicts and misunderstandings are prevented. Avoiding confrontation with others may be conducive to the experience of more positive life events (Table 4). A stable relationship or marriage and positively experienced interpersonal relations are probably significant for the change in attachment style from insecure to secure in this group.

The presented research project has several limitations. First of all, past secure and insecure working models and important life experiences were assessed with the ECR-RS and LES-M questionnaires *post factum*. Ideally, internal working models and their change as a result of important life events should be assessed in longitudinal studies over a period of several years. Moreover, the participants in the study were psychology and psychotherapy students, which influenced the characteristics of the sample and, probably, the assessment of positive and negative life experiences. The sample also differed in terms of age and the number of men and women.

Despite its limitations, this study is an introduction to more detailed analyses of the impact of important life events on the attachment style, and thus to counteracting the negative health effects of insecure internal working models, especially in people displaying disorganized attachment strategies, characterized by high levels of both ANX and AVO [8, 9, 12, 24–26].

Conclusions

In conclusion, the results indicate that positive life events may increase the level of secure attachment style in the context of the insecure style. This results in its greater and more frequent activation in social relations and a greater sense of self-trust. Importantly, the most significant changes were observed in the group of people with primarily disorganized functioning strategies, which significantly affect emotional deregulation and the ability to mentalize. The change of attachment style takes place as a result of more positive experiences in relations with significant others and as a result of decisions made for protection against negative events. The observed changes from secure to insecure attachment style were not significantly related to the experience of negative events. This suggests the protective significance of the secure attachment style for integrating negative experiences (mentalization) with other experiences in the individual's mind.

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