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## Changes in Subjective Picture of Life Path after Biographic Training

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*Biographic training is aimed at formation of creative attitude to life, as well as skills for analysis and life path design. Biographic training is based on causometric psychobiographic approach in life path psychology. The key method of the aforementioned approach is computerized version of causometry – LifeLine program that includes “Assessment of Five-year Periods” methods. After the biographic training adolescent participants: 1) have increased life expectancy and consolidated attitude for long life; 2) have straightened attitude for productive life; 3) accept their past; 4) perceive and experience the future as promising and attractive; 5) in general, start perceiving and experiencing life path space and time as understandable and difficulties as overcomable; passive and indifferent attitude towards life disappears; reality and attractiveness of self-realization life programs increase. Such permanent new formations in subjective picture of life path as increased life expectancy, increase in experiencing productivity in the future and whole life in general, as well as increase in adequate evaluation of events' significance (reality) are formed after biographic training. Biographic training for adolescence successfully fulfills tasks for positive biographic thinking formation and skills for analysis and life path design. We understand positive biographic thinking as attitude for creative life, self-efficacy and consideration for others, significant in life projects.*

*Keywords: causometry, subjective picture of life path, biographic training.*

*Research area: pedagogy, psychology.*

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### 1. Problem Statement

Active training methods for different personality qualities formation and getting experience of effective behaviour and performance are one of the forms of development practices. However, these changes and new qualities are not always evident and they can be measured by quantitative methods.

To optimize life projects implementation, biographic training with three behavior options: individual, pair (for married couples and business partners) and group was offered (Kronik, Akhmerov, 2008). The purpose of biographic training was oriented towards formation of creative attitude to life, as well as skills for analysis and life path design.

Based on the results of work with children who overcame the Chernobyl disaster, we developed the form of biographic training for teenagers and adolescents entitled “**Lessons of Life’s Creativity**” (Kronik, Akhmerov, 1993; Kronik, Akhmerov, 2008; Kronik, Akhmerov, Speckhard, 1999).

The key methods of the biographic training are “Assessment of Five-year periods” techniques (AFP) and causometry. Special biographic games, exercises and specific forming techniques are used in the biographic training (Kronik, Akhmerov, 2008). Using aforementioned methods, diagnostics and other kinds of psychological work such as correctional, psychotherapeutic and developmental are carried out. As a result, feedbacks are received not only from verbal report of the training participant, but in numerical value of the techniques.

In the last decades causometry is actively used in empiric studies. Various elements of biographic training are used in different types of psychological support. Causometry was developed for diagnostics of subjective picture of life path and psychological time of personality (Golovakha, Kronik, 2008). The concept of “subjective picture of life path” is inner world phenomenon and it refers to one of the structural components of self-consciousness (Akhmerov, 2013). Subjective picture of life path reflects person’s ideas about significant events in life, casual and goal-oriented relationships between events, sphere and styles of person’s self-realization, productivity experience, discretization, life attractiveness, etc. (Kronik, Akhmerov, 2008; Akhmerov, 2013). Structure of subjective picture of life path consists of life plans and life circumstances. Life plans are represented by goal-oriented relationship between events. Life circumstances are represented by cause-and-effect relations between events.

Consideration of life circumstances in life plans represents person’s life program. Life program, as a product of person’s understanding of his/her tendencies and potencies also reflects person’s life organization abilities. Thus, subjective picture of life path characteristics also reflect person’s characteristics as a subject of life (Akhmerov, 2008).

Our experience of biographic group training use in adults sampling, according to the data of AFP methods, demonstrated its effectiveness (Akhmerov, 1993). A.A. Kronik demonstrated changes in subjective picture of life path characteristics under individual psychotherapy (Kronik, 2008). The purpose of this study is to define changes and new formations in subjective picture of life path after the biographic training “**Lessons of Life’s Creativity**” with the use of computerized version of causometry LifeLine with adolescents sampling.

As far as we know, analysis of changes and new formations in subjective picture of life path in LifeLine program after biographic training is conducted for the first time.

## 2. Methodology

Research *sampling* is represented by 29 adolescent students aged from 16 to 18. There were 12 female and 17 male students.

*Theoretico-methodological basis* of the research is represented by causometric psychobiographical approach in life path psychology (Golovakha, Kronik, 2008; Kronik, Akhmerov, 2008).

*Methods:* software version of causometry, LifeLine program (Kronik, Pajitnov, Levin, 2013), biographical games and exercises (Kronik, Akhmerov, 2008). LifeLine program also includes “Assessment of Five-year Periods” methods (AFP). To compare average index number of subjective picture of life path before and after biographic training, Wilcoxon matched

pairs signed rank test was applied. Statistical data analysis was conducted in computer statistical analysis programs Bios [Kondrashev, Kronik, 1991] and SPSS (version 19).

*“Lessons of Life’s Creativity” short scenario.*

The first day: formation of work motivation; introduction to theoretical foundations of causometry. The second day: diagnostics of subjective picture of life path in LifeLine program. The third day: introduction to the characteristics of subjective picture of life path; individual counselling. The fourth day: biographic games and exercises (Kronik, Akhmerov, 2008, pp. 218-221). The fifth day: new biography design in LifeLine program. The training was conducted for 3-4 hours every day, 16-18 hours of work in total.

Depending on different problems solution, the biographic training can be of various duration. We recommend to conduct biographic training “**Lessons of Life’s Creativity**” for adolescents within one month. Short duration of our training variant is determined by the fact that we spend it simultaneously as a training seminar for school psychologists.

For the participants of biographic training we were aimed to form positive biographic thinking, acquisition of causometric technology analysis and life path (life programs) design. We understand positive biographic thinking as attitude for life creativity, confidence in one’s own

abilities and consideration of interests, significant in other life projects.

In this paper, in subjective picture of life path, attention is concentrated on the analysis of the dynamics of not events themselves, but connections between events.

### 3. Discussion

Results of indexes comparison of the first and second operation in software program LifeLine indicate changes and new formations in subjective picture of life path after biographic training. Only the relevant changes will be discussed in the paper. For this reason, the level of significance shown in Tables 1, 2 and the text will not be duplicated.

#### **Changes in experiencing life productivity according to AFP methods before and after the biographic training**

After the biographic training adolescent students start experiencing their future from 26-30 years, 46-75 years and 81-86 years (6<sup>th</sup>, 9 – 15<sup>th</sup> and 17-18<sup>th</sup> five-year periods in Fig. 1) more productive than before the training (Fig. 1, Table 1). Average rating of lifetime productivity has also increased after the training from 7.3 to 7.7 points (Table 1).

Experience of importance of the last five-year period of life – the period of life path summarizing

Table 1. Characteristics of experience of life productivity according to AFP methods before and after biographic training

№	Life productivity	Before training	After training	Level of significance
1	Average estimation of the future (points)	7.4	7.8	p< 0.005
2	Average estimation of entire life (points)	7.3	7.7	p< 0.004
3	Average change in estimation (index)	1.2	0.7	p< 0.05
4	Estimation of the last five-year period (points)	6.1	7.1	p< 0.004
5	Life expectancy (years)	83.4	86.8	p< 0.01

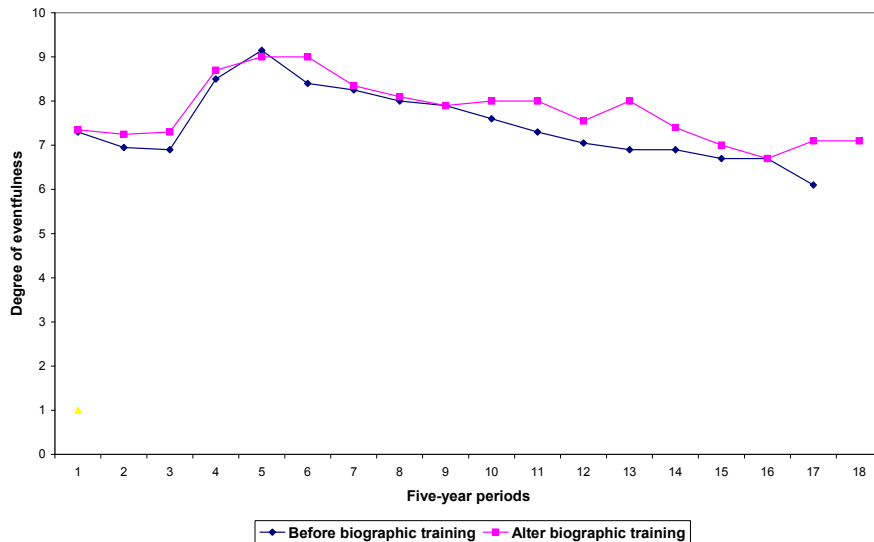


Fig.1. Dynamics of subjective productivity of life before and after biographic training

(Table 1) also increases. This indicates to deep anxiety about the irrational plan and to the raise of importance of death with dignity.

Reduction in the index of “average change in estimation” after the training indicates that adolescent boys start experiencing less fluctuation in life productivity (Table 1). Life is perceived as consistently productive.

After the biographic training, life expectancy also increases from 83.4 to 86.8 years (Table 1). In other words, orientation to long life appears.

It is reasonable to draw attention to the differences in indexes within the range of significance level from  $p > 0.05$  to  $p < 0.1$ . They point to the tendencies that were not displayed in the study on the general lowest level of significance ( $p < 0.05$ ) for various reasons. In our study, the average point of the current five-year period after the training also increases from 8.4 to 8.8 points (significant at  $p < 0.09$ ), and the index of actualization decreases from 20.6 to 20.2 (significant at  $p < 0.08$ ). It is possible to talk of the tendencies for increasing the importance of experience and productivity of the current period of life, as well as of reduction in experience of

subjective actualization among many participants of the biographic training.

In general, after the biographic training the participants experience increased productivity of their life path, the desire to live longer also increases. This means that they start seeing subjective incentives and opportunities for productive self-fulfillment.

#### **Changes in subjective picture of life path in causometry framework in LifeLine program before and after biographic**

Causometric indexes give characteristics of subjective picture of life path in a differentiated way, in the three models of psychological time and in general (Kronik, Akhmerov, 2008). Psychological past is represented by realized (implemented) cause-and-effect and goal-oriented relationships between significant life events. Psychological present is represented by relevant relationships and psychological future – by potential relationships.

A.A. Kronik identifies seven consecutive new formations in subjective picture of life path

according to the data of dynamics of subjective picture of life path characteristics in the course of psychotherapy – an individual biographic training (Kronik, 2008, 2013). These are: 1) increase in the common sensation of realism in evaluation of life events significance; 2) change of the dominant from psychological past to psychological present; 3) increase of strategic importance in psychological present; 4) increase of goal-directedness in psychological present; 5) increase of rationality in psychological present; 6) decrease in confidence (categoricity) concerning psychological past; 7) increase in satisfaction of psychological past.

So, what changes in subjective picture of life path after the biographic training in a group of adolescents? Changes in adolescent age primarily concern psychological past – implemented connections, psychological future – potential connections and psychological time in general – all connections (Table 2).

Absence of changes in psychological present can be explained by the fact that adolescent age is characterized by focus on the future. Constructive assessment of the future is impossible without the past. The past acts as a resource for achievements in the future. In the course of life path analysis in the integrity of its past, present and the

future, high school students have reduced index of difficulty in the past, from 11.2 % to 5 %, the index of emotionality in experiencing the past increases from 55 % to 67.9 % and life satisfaction with the past increases from 58.9 % to 72.2 % (Table 2). This indicates that the training participants are beginning to perceive their past as significant. Before the training the past was perceived as difficult, unworthy to experience and, respectively, did not cause satisfaction.

Increase in the strategy index in the future from 1.5 to 1.9 identifies that after the training adolescent boys are beginning to see the distant prospects for self-fulfillment. After the training life satisfaction with the future is increased from 64.6 % to 78.2 % (Table 2). The future is experienced as promising and attractive.

In general, in subjective picture of life path, the training participants have reduced general index of difficulty from 4.9 % to 2.7 % (Table 2). Accordingly, life path becomes clearer, and difficulties – overcomable. General index of emotionality increases from 61 % to 68.1 % (Table 2). Events are experienced emotionally much more dramatic, neutral attitude to life events disappears. Quotient of general sense of reality increases from 0.31 to 0.54 (Table 2). Sense of reality index is

Table 2. Average indexes of subjective picture of life path characteristics in causometry framework before and after psychological training

Characteristic	Before training	After training	Significance level
Difficulty (realized), %	11.2	5.0	p<0.02
Emotionality (realized), %	55.0	67.9	p<0.002
Life satisfaction (realized), %	58.9	72.2	p<0.005
Strategy (potential), index	1.5	1.9	p<0.03
Life satisfaction (potential), %	64.6	78.2	p<0.01
Difficulty (all connections), %	4.9	2.7	p<0.01
Emotionality (all connections), %	61.0	68.1	p<0.005
Sense of reality (all connections), correlation quotient	0.31	0.54	p<0.001
Life satisfaction (all connections), %	68.4	77.7	p<0.01

Spearman's rank correlation coefficient between subjective ranking of life events importance and rank of events' motivational status (Kronik, Akhmerov, 2008, p. 159). The higher motivational status of an event is the more goal-and-casual relationships it has with other events. The higher sense of reality index is, the clearer a person understands importance of various life events. General index of life satisfaction increases from 68.4 % to 77.7 % (Table 2). In other words, life path becomes less difficult and more understandable (difficulty). Indifferent attitude towards events (emotionality) disappears. Sense of reality and adequate attitude to life events, according to their real significance (realism), increases. An adolescent boy accepts his life and is ready to implement the life project attractive for him (life satisfaction).

Let us also consider the changes that are in the range of significance level from  $p > 0.05$  up to  $p < 0.1$ . General index of goal-directedness increases from 45.8 % to 52.7 % (significant at  $p < 0.08$ ), and general index of rationality increases from 73.1 % to 78 % (significant at  $p < 0.06$ ). This means that many participants' life plans (goal-directedness) are updated. Consideration of life circumstances (rationality) in the life plans also increases.

#### **Comparative analysis of new formations in individual and group forms of work with LifeLine program**

Our studies of people of adult period of life after group version of the biographic training according to AFP methods showed increase in life expectancy and experiencing productivity in the future and entire life in general (Akhmerov, 1993). Individual work has identified similar changes in subjective picture of life path (Kronik, 2008). In sampling with adolescents, as a result of group variant of the biographic training, the same changes take place (Fig. 1, tab. 1). Consequently,

increase in experiencing productivity of life and life expectancy can be attributed to long-term effect and new formation in subjective picture of the life path after the biographic training. In fact, after the biographic training positive biographic thinking, attitude to productive life and self-realization appears.

According to causometric indexes in individual work in sampling with adults (Kronik, 2008) and in group work in sampling with adolescents there is an increase in the general index of realism (Table 2).

Based on these results, it is possible to talk about specified characteristics of subjective picture of life path as about sustainable new formations after the biographic training.

In the course of individual work with clients who have psychological problems, acceptance of the past takes place only in the seventh variant of purposeful work with LifeLine (Kronik, 2008). In our case, in group work in sampling with adolescents, acceptance of the past takes place in the second variant of work with LifeLine.

Emergence and stability of other changes from the use of different types of the biographic training also depend on many other factors. For example, they depend on scenario and type of biographic training, age and problems of a client, a student and a patient. This is also indicated by our results. Whereas in sampling with adults who have psychological problems during individual work changes concern psychological past and present, in sampling with adolescents in group work changes relate to psychological past and the future.

#### **4. Resume**

After the biographic training “**Lessons of Life's Creativity**” with the use of computerized version of causometry – LifeLine in sampling with adolescents:

1) life expectancy increases, attitude to long life is consolidated;

2) attitude to productive life is increased;

3) acceptance of the past takes place;

4) the future is perceived and experienced as promising and attractive;

5) in general, space and time of life path is started to be perceived and experienced as clear, and difficulties as overcomable; passive and indifferent attitude to life disappears; realism and appeal of self-realization life programs increases.

The study results show that biographic training for adolescent age successfully performs the task of positive biographic thinking formation,

causometric analysis technology mastering and life path design.

Comparative analysis of changes in subjective picture of life path in individual and group forms of the biographic training identified following general stable new formations in different types of biographic training: 1) increase in life expectancy, 2) increase in experiencing productivity of life in the future and entire life in general (according to AFP methods), 3) increase in the general index of realism (according to causometry).

Thus, biographic training is one of the most effective technologies in practices of human development as a person and a subject of life.

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## **Изменения в субъективной картине жизненного пути после биографического тренинга**

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*Биографический тренинг направлен на формирование творческого отношения к жизни, навыков анализа и проектирования жизненного пути. Биографический тренинг опирается на каузометрический психобиографический подход в психологии жизненного пути. В работе применен основной метод указанного подхода, компьютерный вариант каузометрии – программа LifeLine, включающая в себя методiku «Оценивание пятилетий жизни». После биографического тренинга у участников юношеского возраста: 1) повышается ожидаемая продолжительность жизни, укрепляется установка на долгую жизнь; 2) увеличивается установка на продуктивную жизнь; 3) происходит принятие прошлого; 4) будущее воспринимается и переживается как перспективное и привлекательное; 5) в целом пространство и время жизненного пути начинают восприниматься и переживаться как понятное, а трудности преодолеваемыми; исчезает пассивное и равнодушное отношение к жизни; повышается реалистичность и привлекательность жизненных программ самоосуществления. К устойчивым новообразованиям в субъективной картине жизненного пути после биографического тренинга относятся увеличение ожидаемой продолжительности жизни, повышение переживания продуктивности в будущем и в целом всей жизни, возрастание адекватной оценки значимости событий (реалистичности). Биографический тренинг для юношеского возраста успешно выполняет задачи по формированию позитивного биографического мышления, навыков анализа и проектирования жизненного пути. Под позитивным биографическим мышлением мы понимаем установку на жизнотворчество, веру в собственные силы, учет интересов, значимых в других жизненных проектах.*

*Ключевые слова: каузометрия, субъективная картина жизненного пути, биографический тренинг.*

*Научная специальность: 13.00.00 – педагогические науки, 19.00.00 – психологические науки.*

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