

# Event-situational aspect of the subjective experience of mental states

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**Abstract.** The article reveals the content of the subjective experience of mental states – in particular, the event-situational aspect. Mental states that people experience are determined by certain situations in their lives. The subjective experience of mental states contains a wide range of indicators that reflect various manifestations of person's experience, internal and external determinants of mental states. We studied the subjective experience of mental states of the following groups of subjects: adolescents with deviant behavior staying at a juvenile correctional facility, adolescents brought up in family deprivation conditions, adolescents with disabilities, normotypical adolescents living in a family. The selected mental states differ in the level of mental activity (high, medium, low) and modality (positive, negative). Subjects retrospectively described their mental states. To identify the components of the subjective experience of mental states, was used the method of content analysis. It was found that the subjective experience of mental states of each group of subjects has both common and specific components. The specificity of the content of the subjective experience of mental states of children is associated with physical and social conditions of their life, as well as with situations that caused the experiences. The subjective experience of mental states of individuals with different living conditions has common features which, in our opinion, allow individuals to identify and recognize the mental states of other people.

**Keywords:** subjective experience, mental states, events, situations, adolescents.

## 1 Introduction

In psychology, the term “subjective experience” is considered comprehensively and in a different context. Foreign scientists study subjective experience as a mental experience (E.J. Vanman, M.E. Dawson, P.A. Brennan, 1998), and as a set of settled interactions of an individual with the world – individual experience or life experience (T. Klonowicz, 1979). The experience of mental states is indirectly studied as a memory of a person of one's own experiences (Artischeva, 2020). Russian psychological science studies the structure of experience, its connection with other mental phenomena and processes such as memory, perception, activity, consciousness (Artischeva,

2020). There are a number of research conducted by domestic and foreign scientists aimed at studying the specifics of emotional experience, recognition and identification of mental states, emotional intelligence (Barret, Mesquita, Ochsner, Gross, 2007; Wellman, Lagattuta, 2000; Artischeva, 2020).

The category “subjective experience” plays important role and acts as a repository of images of mental states in the concept developed by A.O. Prokhorov, (Prokhorov, 2011, 2016). Recent studies have shown that the subjective experience of mental states has a different structure and content depending on the age, social and biological conditions of life (Kirilov P.S., Artischeva, 2019; Artischeva, 2019). Mental states experienced by a person are determined by certain situations in one’s life (Prokhorov, 2011, 2016). The same situations can cause different experiences in different people; however, the same mental state can also be determined by different events. In order to identify the specifics of the structure, content and event-situational aspect of the subjective experience of mental states, mental states of various modality and mental activity were studied in individuals who live in different life, social and physical conditions.

## **2 Research methods and techniques**

### **2.1 Please note Sample description**

The research involved: adolescents brought up in residential institutions (20 individuals), adolescents with disabilities (severe speech disorders (SSD) and cerebral palsy (CP)) (24 individuals), adolescents with deviant behaviors staying at juvenile correctional facility (33 individuals), as well as adolescents with normotypical development brought up in families and studying in a comprehensive school (44 individuals).

### **2.2 Research techniques**

In order to determine the specifics of the experience and the course of the flow of mental states of adolescents and situations associated with this state, we used the method of self-reporting. We studied mental states of different level of mental activity and modality: joy (a state of a positive modality of a high level of mental activity), anger (a state of a negative modality of a high level of mental activity), calmness (a state of a positive modality of an average level of mental activity), indifference (the state of negative modality of an average level of mental activity), fatigue and sadness (the state of a negative modality of a low level of mental activity).

Self-report data were analyzed by a group of experts (KFU staff) who identified empirical indicators.

### **2.3 Organization of the research**

Subjects retrospectively described their mental states. The instruction said: “Remember how you experienced the mental state in the past and the events that this state was associated with. Describe your experiences in a free form. ”

The answers of the subjects were processed using the method of the content analysis and the semantic units were singled out (in the description of the results of the research for each group of subjects, the obtained values of indicators will be shown). After the analysis of self-reports of respondents about their experiences in the past, it was revealed that in one self-report one indicator had several empirical indicators, i.e. was used several times in the form of various words or phrases carrying a single meaning. As a result, we determined the frequency of the occurrence of the selected components in the respondents' texts.

To identify the event-situational aspect of the subjective experience of mental states, we separately analyzed the semantic unit reflecting the events associated with a mental state. The frequency of occurrence of this semantic unit in self-reports is highlighted and its content is revealed.

### 3 Analysis of the research results

#### 3.1 Adolescents brought up in family deprivation conditions (in residential institutions)

Adolescents brought up in family deprivation conditions gave a description of all the mental states indicated in the study (joy, anger, calmness, indifference, fatigue, sadness). Using the method of content analysis of their self-reports, the following indicators were identified (semantic units of texts reflected in Table 1.

**Table 1.** Empirical indicators of the subjective experience of mental states of adolescents brought up in family deprivation conditions

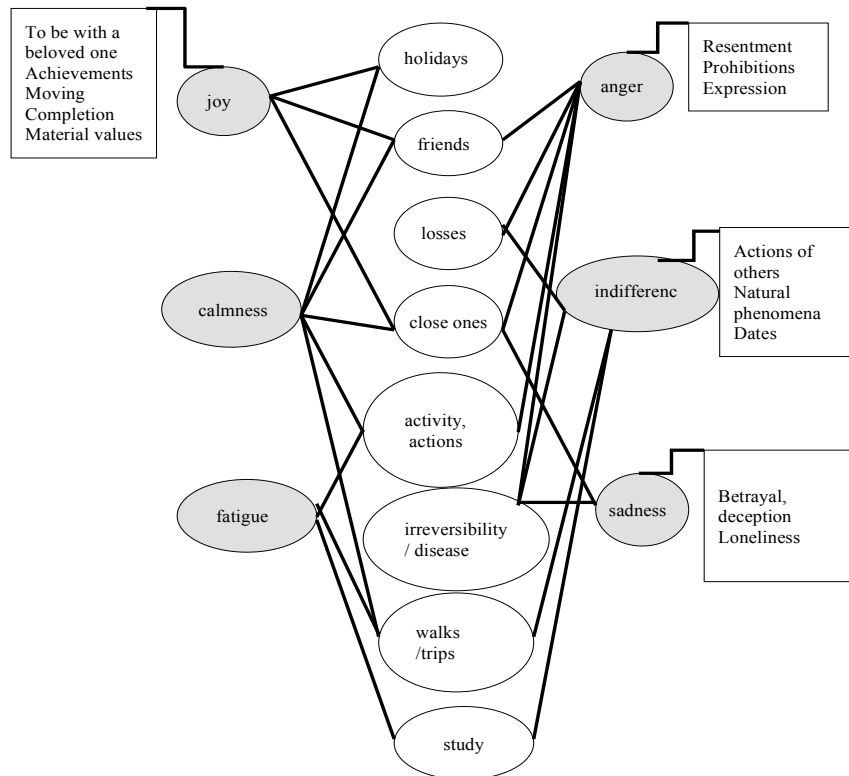
№	Indicators	Empirical indicators
1	Emotions / mood / feelings	"I felt sorry", "sadness attacked me", "when I miss", "anger", "I get depressed", "fun", "joy", "happiness", "pleasant feeling", etc.
2	Expression	"Tears", "I cried then", "very sad", "I cry", "laugh", etc.
3	Events / situations / circumstances	"They hit a cat", "when something bad happens", "grandmother died", "when parents leave", "became an aunt", "a nephew was born", "I will cure my sister", "so that she can take me", "I will become an economist", "Holidays", "New Year", "when he is close to me", etc.
4	Activity / behavior	"I'm lying on the bed", "to kill this", "I want to be alone", "I want to sleep", "to walk", "to play", "I will give some of the money ...", "I'm learning", "I like to embroider", "I jumped" and etc.
5	Expectations / Assessment	"You hope", "it turns out not done", "everything will be fine", etc.

6	Feelings and behavior of others / significant people	“My grandmother died”, “when my parents leave”, “they refuse to do something,” “they hurt with their words,” “grandma wrote an application to the orphanage,” “nephew was born,” “live with my grandmother,” “so that she can take me away”, “beloved and closest person”, “friends who support me”, “so that my mother and family can take me away”, etc.
7	Values	“To give part of the money to sick children”, “... to orphanages”, “there will be a home”, “... sports”, “... work”, “many friends”, “to have my own baby”, “family”, etc.
8	Desires / needs / dreams	"I want the same ...", "I hope ...", "... I do not want ...", etc.
9	Conditions / place / time	"In the fall ...", "in a month", "in the summer ...", "... for 20 days", "it is raining", "... in silence", "... on Saturday", "in the evening", etc.
10	Mnemonic / mental processes	“I don’t remember”, “I don’t know...”, “I don’t want to think...”, “I remember...”, “... I don’t want to remember it”, “I think...”, etc.
11	Physiological / somatic processes	“If he gets sick...”, “... I was tired”, “... broke my arm”, “... died...”, “... tired”, “my throat hurt”, “... I will sleep...”, etc.

The highlighted characteristics in the descriptions of the subjects refer to various manifestations of the mental (expression, emotional processes, behavioral manifestations, value-semantic sphere), as well as to external factors (events, situations, actions of significant adults). That is, the experience of mental states of orphans contains not only internal indicators of a person's states, but also events that cause this state.

In general, self-reports of adolescents living in family deprivation conditions are characterized by poverty and a small coverage of the used characteristics of mental states, and a scarcity of descriptions.

Adolescents brought up in residential institutions place great emphasis on describing the events that determine mental states. That is, the leading component in their subjective experience of mental states is represented by the event-situational aspect. To analyze the situation, we combined indicators into semantic groups. Let us consider it in more detail (see Fig. 1).



**Fig. 1.** The event-situational aspect of the subjective experience of mental states of adolescents brought up in family deprivation conditions

According to the figure, we can state that there are a number of situations that cause a different spectrum of experiences, sometimes even opposite in modality and level of mental activity: holidays (joy and calmness), friends (joy, calmness, anger), losses (anger, indifference), loved ones (joy, calmness, anger, sadness), activity and actions (calmness, fatigue, anger), irreversibility, illness (anger, indifference, sadness), trips (calmness, fatigue, indifference), study (fatigue, indifference). We also identified situations that seem specific, that is, one specific mental state was determined in all subjects.

The biggest number of variations of situations and events relates to states of a high level of mental activity – joy and anger. Most situations and events are associated with the experience of separation from parents, as well as with the experience of sadness, grief about admission to residential institutions. The subjective experience of a mental state of sadness arises due to such circumstances and events as betrayal ("parents leave", "grandma wrote an application to the orphanage and did not tell me", etc.), irreversibility ("the cat died", "grandfather died" and etc.), loneliness ("I have no one"). That is, sadness is caused by events that can be classified as traumatic, which determine deeper experiences (grief, despair, hopelessness, etc.). Adolescents living

in a situation of family deprivation have a more difficult experience of the state of sadness associated with psychological trauma.

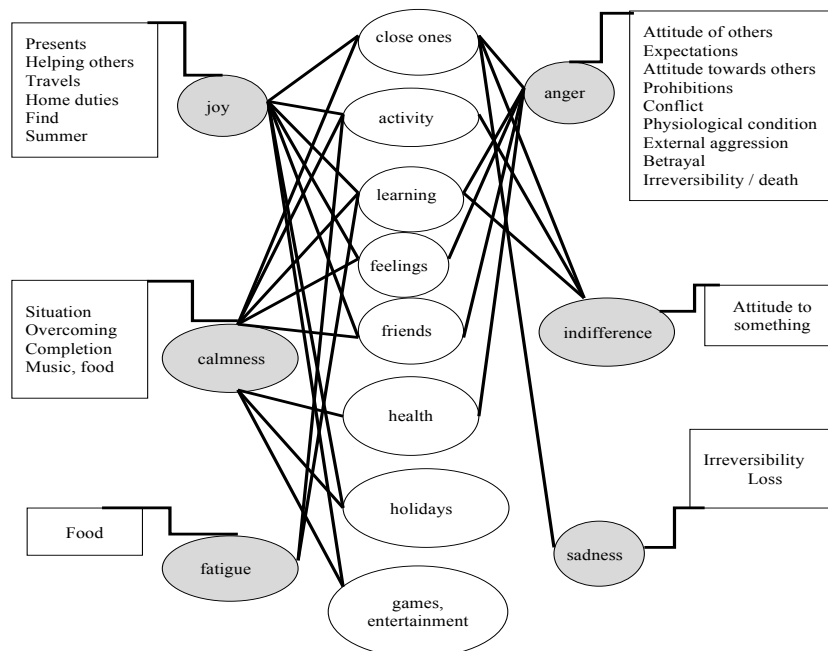
### 3.2 Adolescents with disabilities

Adolescents with developmental disorders described their past experiences not for all of the mental states reported in the study. Some did not quite understand what mental states were stated in questions, which was most likely explained by a poor level of identification of the states (more research is required). Some of the states experienced in the past were described very poorly or not by all subjects, so we could not include them in the data analysis. Thus, adolescents with developmental deficits fully described their experiences in the past in only three states: joy, anger, calmness. Content analysis of self-reports of adolescents with disabilities allowed us to single out the indicators shown in Table 2, with their empirical indicators.

**Table 2.** Empirical indicators of semantic units of the subjective experience of mental states of adolescents with disabilities

№	Indicators	Empirical indicators
1	Assessment / Quantity / Comparison	"everything is fine", "very rarely", "mostly", "the subject I don't like", "very much", etc.
2	Relatives / close relationships	"with loved ones", "with mom", "with grandmother", etc.
3	Unity/ acceptance	"discuss it with parents", "being with loved ones", "started to speak", etc.
4	Feelings / emotions / experiences	"when I'm happy," "make me very angry," "resentment," "I don't feel anything," etc.
5	Causes / situations	"because of something", "birth of the sister", "when I eat sweets", "when I'm satisfied", etc.
6	Regulation	"it passes", "to calm down", "they cope with them", etc.
7	Actions / activities	"read books", "participate in various competitions", "play the guitar", etc.
8	Mental, mnemonic, reflexive processes	"think about that ...", "there are all sorts of good thoughts", "I think about something", "if I stop thinking", etc.
9	Conditions / location of events	"it ends", "on the weekend", etc.
10	Desires / dreams / expectations	"well, this is my dream," "when I really wanted to," etc.
11	Reactions / behavior	"I can quarrel", "do nothing", "sit quietly", "react calmly", etc.
12	Physiological processes	"my heart bleeds", "I'm tired", etc.
13	Communication	"I discuss", "I do not talk at all", "I'm sitting talking", etc.
14	Abstraction / metaphors	"like I'm falling", "how nature speaks", "when I give up," etc.

The highlighted indicators relate to various realities and phenomena of life. Adolescents with developmental disorders describe mental states experienced in the past by indicating the causes of the states and through external markers – for example, communication and unity with someone. They reveal the states through their behavior, reactions, actions and activities. But the experience also contains internal markers related to the world of their feelings and experiences, value judgments and reflections. It is worth to pay special attention to the elements of regulation and overcoming problems. When describing negative states, some children resort to regulatory techniques, that is, the subjective experience of negative mental states may contain a way of overcoming them.



**Fig. 2.** Event-situational aspect of the subjective experience of mental states of adolescents with disabilities

In comparison with other indicators, the situational component is not strongly expressed in the subjective experience of these states but the range of the situations is quite large. In order to analyze the situation, we combined indicators into semantic groups. Let us consider it in more detail (see Fig. 2).

When revealing the subjective experience of their mental states, adolescents with disabilities rarely describe the situations that caused these experiences, and the situations themselves are very heterogeneous. The biggest number of variations of

situations and events refers to the states of high and medium levels of mental activity—joy, anger and calmness.

We revealed situations that determine various mental states, sometimes opposite in modality or in level of mental activity: close people (joy, calmness, anger, indifference, sadness), activity (joy, calmness, fatigue, indifference), study (joy, calmness, fatigue, anger, indifference), feelings and friends (joy, calmness, anger), holidays and entertainment (joy, calmness), health (calmness, anger). Mental states of low and medium levels of mental activity, fatigue and sadness, indifference develop in adolescents with disabilities due to a small number of events. We also revealed specific situations that cause only one certain condition in adolescents with disabilities (see Fig. 2).

### 3.3 Adolescents with deviant forms of behavior

Adolescents with deviant forms of behavior staying in juvenile correctional facilities gave a description of their past experiences on all the declared mental states. Table 3 shows the indicators of the subjective experience of mental states and their empirical indicators identified with the help of a content analysis.

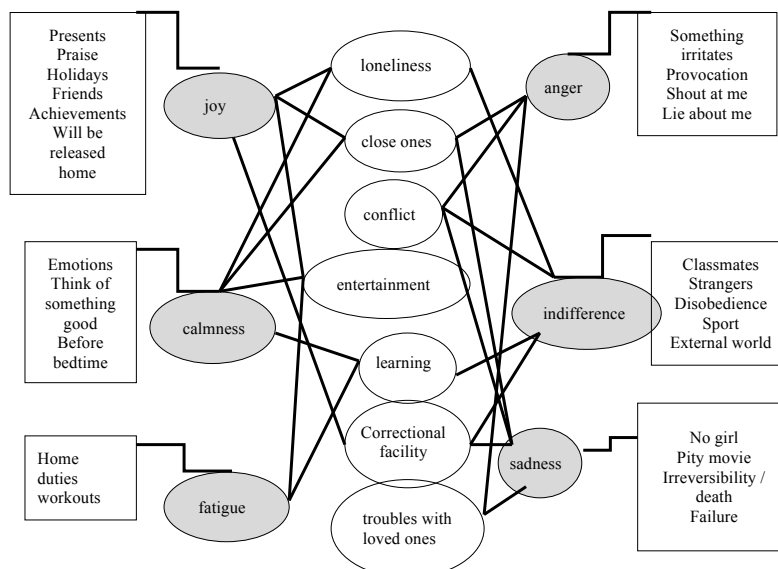
**Table 3.** Characteristics of the subjective experience of mental states and their empirical indicators in adolescents with deviant forms of behavior

№	Indicators	Empirical indicators
1	Relatives / close people	“you’re doing something with your mother”, “a friend came”, “next to beloved ones”, “quarreled with beloved ones”, “grandmother came here”, etc.
2	Unity	"with the family", "next to beloved ones", "with me", "mom with me", "to be alone", etc.
3	Assessment / Quantity / Comparison	“it hit me hard”, “they insult me”, “always”, “eternal state”, “very strong”, “I was recently”, “everything is fine”, “I don’t care”, etc.
4	Feelings / emotions / experiences	"feeling of peace", "feeling tired", "rage", "fury", "sadness appears", "fear", "I was joyful", etc.
5	Actions / activities	“I did sports”, “walk down the street”, “it hit me hard”, “when I sit at the computer”, “did my homework”, etc.
6	Events / situations	“when they gave a kitten”, “when the team lost in football”, “when they won”, “when there will be a wedding”, etc.
7	Reactions / Expression	“anger turned into a fight”, “shouting”, “tears welling up”, “when the voice was raised,” etc.
8	Physiological processes	"sleepiness", "go to bed", "grandmother died", "I will be ill", "wake up", "relaxation", "my head ached", etc.
9	Desires / dreams	«получил долгожданный результат», «надеюсь», «не хочу», «желательно», «я хочу, чтобы» и др. “I got the long-awaited result”, “I hope”, “I don’t want”, “Desirable”, “I want to”, etc.
10	Regulatory processes	“I try not to express it (anger)”, “when I’m sad, I know it will pass,” “to control all situations,” etc.



11	Time / conditions / place	“punished for a month”, “got into such places”, “go to a cafe”, “walk down the street”, “I got here”, “a year and a half ago”, “when being at school”, etc.
12	Mnemonic / mental / reflexive processes	“I can't even imagine”, “I thought I was doing well”, “I think about home”, etc.
13	Symbols / abstraction	"like cats, many lives", "there will be a second life", "she will fly on the wings of the wind herself", "let happiness fly into my window", "well, let the sadness bury me", etc.

Indicators of the subjective experience of mental states of adolescents with deviant behavior refer to various manifestations of the mental (emotional-sensory sphere, physiological and mental processes, behavioral manifestations, value-semantic sphere), as well as to external factors (events, situations, relationships with beloved ones, time and place of events). The subjective experience contains indicators that act as symbols or abstractions, as well as describe regulatory functions.



**Fig. 3.** Event-situational aspect of the subjective experience of mental states of adolescents with deviant behavior in a correctional facility

The analysis of self-reports showed that the events that determine a particular state are multidimensional and different. We combined them into semantic groups and showed a connection with mental states (see Fig. 3).

As in the groups of subjects analyzed above, a number of events cause mental states of different modality and level of mental activity. But there are some situations that determine one specific state. Lonely situations can cause the state of joy, calmness, indifference; events related to beloved ones – joy, calmness and at the same time, anger and sadness; entertainment determines joy, calmness, fatigue; conflict situations cause negative mental states – anger, indifference, sadness; learning leads

to the states of calm, fatigue and indifference; sadness and anger are determined by troubles with beloved ones; the situation of being in a correctional center causes joy, anger and sadness in adolescents with deviant behavior.

The figure shows that only the state of fatigue is caused by a limited number of situations. The rest of the states have a large number of causes.

### 3.4 Adolescents with normotypical development

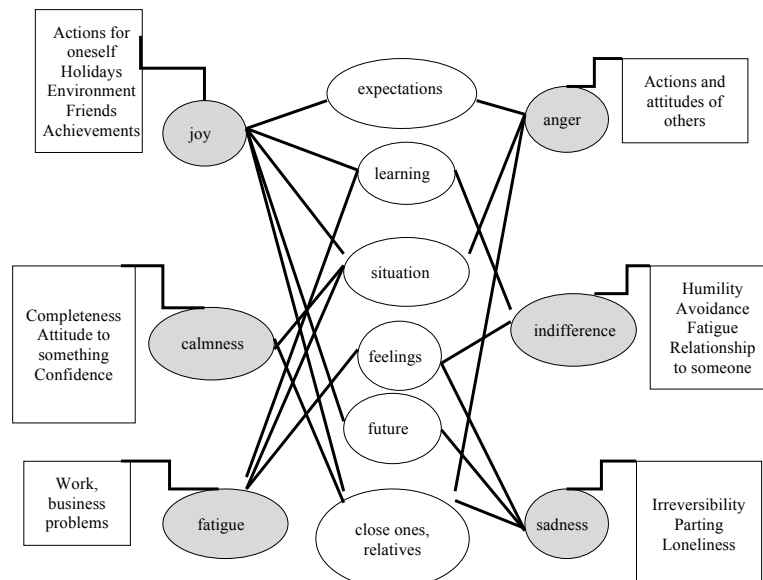
Adolescents with normotypical development gave a description of their past experiences on all the declared mental states. Table 4 shows the indicators of the subjective experience of mental states and their empirical indicators identified with the help of a content analysis.

**Table 4.** Empirical indicators of the semantic units of the subjective experience of mental states

	Indicators	Empirical indicators
1	Assessment/ attitude/ comparison	"Usually", "rare", "much worse", "nice words", "I like", etc.
2	Events / situations	"When quarreling", "when meeting with someone", "when I am alone", "when life is stable", etc.
3	Time / perspective / duration	"At that moment", "during the period of long and tense days", "tomorrow", "one day", "in the end", "already three days", etc.
4	Actions / activities / deeds	"They congratulated her," "I listened," "we had fun," "I talk a lot," "I want to jump," "I hug my cat," etc.
5	Feelings / emotions / experiences	"Happy", "I get angry", "lack of feelings", "I feel lightness and optimism", "from overwhelming happiness", etc.
6	Relatives / close relationship / unity	"My beloved one", "either friends", "my sister", "all together", "people dear to me", "with a person with whom I have spent a long time", etc.
7	Conditions / location	"On some street", "sitting at work", "silence", "after some sad news", "that evening", etc.
8	Desires / dreams / beliefs / expectations	"Unexpected news", "they want to hear", "I want to jump", "in unwillingness to think", "I counted on", etc.
9	Physiological processes	"I yawned", "I could sleep well", "my eyes were reddened", "they are healthy", "tears", "my head ached", etc.
10	Abstractions / metaphors / associations	"My heart is getting warm", "as if I unloaded a truck", "I give up", "like a squeezed lemon", "I discovered my Zen", etc.
11	Mental, mnemonic, reflexive processes / awareness / understanding	"I don't think", "it's always forgotten", "I cannot forget", "it seemed to me", "I understand how", "it follows from this", "my thoughts are directed", "why do I feel indifference?" and etc.

12	Regulation	"But then it lets me go", "maintaining neutrality warns me against mistakes", "I tried not to be rude to anyone", etc.
13	Perception / feeling	"This feeling of abandonment", "sensations were dulled", etc.
14	Attention	"Pay attention to this", "focus drops sharply", "I am distracted", etc.

The subjective experience of mental states of normotypical children is represented by a wide range of indicators that can be attributed to various manifestations of the mental (mental and physiological processes, desires and expectations, emotional sphere, evaluative aspect), as well as to external circumstances (events and situations, time aspect, actions, etc. their own actions and actions of beloved ones). We have revealed indicators of the subjective experience of mental states, which reflect regulation and management of behavior and state.



**Fig. 4.** Event-situational aspect of the subjective experience of mental states of adolescents with normotypical development

Description of events and causes of mental states in the subjective experience of normotypical adolescents is less common in compare to leading indicators. Let us consider in detail the event-situational aspect of the subjective experience of mental states of normotypical adolescents (see Fig. 4).

As in all other samples, we see that the same events determine mental states that differ in the level of mental activity and modality. For example, a situation of expectation produces both joy and anger; learning is the cause of the states of joy, fatigue and indifference; outdoor environment can cause anger, joy and calm; the feelings experienced determine the state of fatigue, indifference, sadness; an aspect of

the future awakens both joy and sadness; relationships with relatives and close ones determine joy, calmness, anger and sadness.

Situations determining only one mental state have also been identified. The mental state of joy can be caused by the biggest number of situations.

## **5. Discussion**

The content of the subjective experience of mental states differs in each group of subjects, but common features have also been identified. The subjective experience of mental states of all subjects contains components that reveal the emotional-sensory sphere, value judgments, events that determined these states, activities and actions that accompanied the experiences, it reflects dreams, desires, expectations, descriptions of places and conditions of the course of mental states or events, associated with these states. Adolescents often associate their experiences with relationships with relatives, with significant other people. It is important to note that their experience also contains description of mental processes, ruminations, reflection. Earlier studies (Artischeva, 2014) also revealed that mental states in people are represented in consciousness by the description of thought processes, but subjects' self-reports often featured descriptions of other mental processes (memory, perception, sensations, speech, imagination). In our research, such content of the subjective experience was revealed only in normotypical adolescents living in families.

An interesting fact to mention is that values are contained only in the subjective experience of mental states of adolescents who are brought up under family deprivation conditions. The results of the research, which were not included in this article, covered not only retrospective descriptions of mental states, thereby representing past experiences, but also perspective descriptions (how I will experience this state in the future). They showed that the orphans placed special emphasis on family values, transferring them to the future (I will buy a house for the whole family, I will help orphans, etc.).

The event-situational component in the subjective experience of mental states of adolescents is represented widely. We revealed the specificity associated with the conditions of life, and with the level of mental activity and modality of mental states. In each group of subjects showed situations that can cause various mental states. Events related to the loved ones, relatives and learning in each group determine different experiences. Most likely, this might be explained by the fact that learning activity at this age is still ongoing and occupies a large segment of children's lives, while relatives represent the closest environment and interaction with them is relevant and significant throughout entire person's life.

We should note that holidays, gifts, achievements, relationships with relatives in all groups cause the state of joy, but there are events that are specific only for one specific group of subjects. The situation is different with the state of anger. Only family relationships can cause the state of anger equally in each group, the rest of the situations are quite specific. Adolescents with deviant behavior call provocation and lies about them the cause of their anger. Adolescents living in family deprivation conditions say that their anger is caused by offenses, prohibitions, and losses. In other

words, the spectrum of situations that determine anger is quite saturated.

In each group, fatigue is equally caused by learning and some kind of activity (walks, household duties, etc.). The state of sadness is determined by family relationships, but other situations are specific. In adolescents with deviant behavior, sadness is caused by being in a correctional facility, quarrels, watching sad films and irreversible events (death of beloved ones). When it comes to adolescents from orphanages, the main cause of their sadness are associated with situations of betrayal, deception, loneliness become. Irreversible events (death or serious illness of beloved ones) in each group of subjects represent the cause of the state of sadness.

The state of indifference is experienced quite individually in each group of subjects. An interesting fact to mention is that indifference is caused mainly by those situations that determine positive states (joy, calmness). Adolescents often disclosed indifference as an attitude toward something or someone. The state of calmness is achieved by adolescents mainly in situations that can be called regulatory – for example, before bedtime, positive thinking, environment, completing something. Another reason for calmness is well-established relationships with relatives or their presence nearby.

#### **Conclusions:**

1. The subjective experience of mental states of individuals with different living conditions has common features, which, in our opinion, allows us to identify and recognize mental states of other people. The revealed specificity of the content of the experience of the states reveals to us the influence of social and physical conditions on the characteristics of the experience of states, which is reflected in the subjective experience;
2. The event-situational component of the subjective experience of mental states is determined by the living conditions (residential institutions, juvenile correctional facilities, family, correctional institutions), as well as by the modality and level of mental activity of mental states;
3. In each group of subjects, situations associated with educational process and interaction with relatives, significant close people cause a wide range of experiences. But we also identified situations that were specific not only for a certain state, but also for a group of subjects.

**The study was carried out with the support of the Russian Foundation for Basic Research in the framework of the research project No. 18-013-01012 "Subjective experience of mental states in the situation of life prediction»**

#### **References**

1. Artischeva, L.V.: Age and gender characteristics of the content of the subjective experience of mental states of children with developmental disorders. Russian psychological journal 16 (4), 5–21 (2019). doi: 10.21702 / rpj.2019.4.1
2. Artischeva, L.V.: Subjective experience of mental state: theoretical overview. In: Collection of materials of the XIV international scientific and practical conference for students, undergraduates, graduate students, young scientists and univer-

- sity teachers "Psychology of mental states" 2020, 14, pp. 35-38. Kazan University Publishing House, Kazan (2020).
3. Barret, L.F., Mesquita, B., Ochsner, K., Gross, J.J.: The Experience of Emotion. *Annu Rev Psychol* 58, 373–403 (2007). doi: 10.1146/annurev.psych.58.110405.085709
  4. Kirilov, P.S., Artishcheva, L.V.: The Subjective Experience of Mental States in Individuals with Deviant Behavior at a Forecasting Situation. In: V International Forum on Teacher Education, 2019, pp.1299-1311. ARPHA Proceedings doi:10.3897/ap.1.e1233, Issue DOI: 10.3897/ap.proceeding.e2782
  5. Klonowicz T. Transformation ability, temperament traits and individual experience. *Polish Psychological Bulletin*. 1979. V. 10 № 3. P. 215 223.
  6. Prokhorov, A.O.: The image of a mental state: phenomenological features and personality correlates [Electronic resource]. *Psychological research: electron. Scientific journal* 3(17), (2011).
  7. Prokhorov, A.O.: The image of a mental state. Publishing house "Institute of Psychology RAS", Moscow (2016).
  8. Vanman, E. J., Dawson, M. E., & Brennan, P. A.: Affective reactions in the blink of an eye: Individual differences in subjective experience and physiological responses to emotional stimuli. *Personality and Social Psychology Bulletin* 24(9), 994–1005 (1998). <https://doi.org/10.1177/0146167298249007>
  9. Wellman, H.M., Lagattuta, K.H.: Developing understandings of mind. Understanding other Minds. Perspectives from developmental cognitive neuroscience. Second edition. Oxford University Press. (2000).