МОДЕЛЬ ПСИХИЧЕСКОГО И СПОСОБНОСТЬ ПРИДЕРЖИВАТЬСЯ КОЛЛЕКТИВНОЙ ИНТЕНЦИОНАЛЬНОСТИ У ДОШКОЛЬНИКОВ

MENTAL MODEL AND ABILITY TO ATTEND COLLECTIVE INTENTIONALITY
IN PRESCHOOL CHILDREN

СМИРНОВА Я.К.

Алтайский государственный университет

Аннотация:

В статье проанализирована связь понимания ребёнком состояний, желаний, намерений другого человека («модели психического») и способности придерживаться коллективной интенциональности в ситуации морального выбора. Для достижения цели на выборке детей дошкольного возраста были применены классические методики для оценки уровня модели психического: «Тест на ошибочное мнение»; «Салли-Энн»; задача «Что хочет Чарли?», методики для оценки понимания детьми намерений, желаний, интересов других по поведенческим проявлениям. Были созданы экспериментальные условия для исследования навыков общения ребёнка в ситуации морального выбора. Были предложены ряд диагностических серий на исследование соблюдения норм справедливости, изучения действенности общественного и личного мотива. В созданных экспериментальных ситуациях подтвердилось, что уровень развития модели психического у дошкольников опосредует стратегию взаимодействия с партнёрами в ситуации морального выбора. Показано, что модель психического помогает ребёнку гибко применять нормативные суждения о рациональности коммуникативных актов в ситуации морального выбора. Данные исследования отображают роль

SMIRNOVA YA.K.

Altai State University

Abstract:

The article analyzes the relationship of the child's understanding of states, desires, intentions of the other ("mental model") and the ability to adhere to collective intentionality in a situation of moral choice. To achieve the goal on a sample of children of preschool age, classical methods were applied to assess the level of the mental model and experimental conditions were created to study the child's communication skills in a moral choice situation. A number of diagnostic series were proposed to study the observance of norms of justice, the study of the effectiveness of public and personal motive. In the created experimental situations it was confirmed that the level of development of the mental model in preschoolers mediates the strategy of interaction with partners in a situation of moral choice. It is shown that the mental model helps the child to flexibly apply normative judgments about the rationality of communicative acts in a situation of moral choice. These studies reflect the role of the development of the "model of mental" in a child in the ability to build collective intentionality, choose the priority of a joint goal, joint intentions, as well as the existence of specific motives for helping and sharing with other people. At the same time, the formed

уровня развития «модели психического» у ребёнка в умении выстроить коллективную интенциональность, выбрать приоритет совместной цели, совместных намерений, а также наличия особых мотивов для оказания помощи и обмена с другими людьми. Вместе с тем сформированные представления о ментальном мире других не предполагают совпадения намерений и отсутствие предпочтение своей выгоды в ситуации морального выбора. Приведенные результаты данного исследования показывают возможности модели психического для интерпретации социальных взаимодействий. Особенно важно рассматривать этот вопрос в онтогенезе для понимания развития социальных навыков ребёнка, социально значимых норм и ценностей, с которыми соотносится стратегия взаимодействия дошкольников со сверстниками в процессе совместной деятельности.

Ключевые слова:

интенциональность, коллективные намерения, модель психического, Theory of Mind, социальное познание, дошкольный возраст.

ideas about the mental world of others do not imply a coincidence of intentions and the absence of a preference for one's own advantage in a situation of moral choice. The results of this study show the capabilities of the mental model for the interpretation of social interactions. It is especially important to consider this issue in ontogeny in order to understand the development of a child's social skills, socially significant norms and values with which the strategy of interaction between preschool children and peers in the process of joint activity correlates.

Keywords:

intentionality, collective intentions, mental model, Theory of Mind, social cognition, preschool age

Relevance

Intentionality as intentional behavior is the central property of human consciousness: to be directed to a certain object. Intentionality should be understood in the mode of selectivity, interests of a person. At the same time, in the intentional activity of consciousness, the source of the emergence of interpersonal relations is manifested. Simultaneously, the intersubjective construction of the intentional experience of the communication partner occurs.

Deliberate cooperation means not only participating in joint activities, but also sharing common intentional states such as beliefs, desires and intentions with a communication partner. Therefore, in addition to individual intentionality, “collective intentionality”, “collective intentions and actions” [1], and “common intentions” [2] are singled out, which makes possible to take interpersonal relations that characterize joint actions into account [1,3,4].

The concept of joint intention includes “common knowledge” aimed at achieving the same goal, which is the most important requirement of joint action [5]. In

this case, the dyad or group of people not only has the same goal, but they also know that the partner shares it. That is why M. Tomasello believes that an understanding of the intentions of others and building joint intentions represent the basic structure of social actions and communication. Possession of this basic structure allows its participants to create joint semantic spaces or shared knowledge (shared conceptual spaces) with other people [6,7], and also helps to build new forms of communication and cooperation that require socially recursive inferences that embedded intentional states of one from partners to those of another [6,7].

Therefore, the distribution (sum, aggregate) of individual intentions does not make them collective intentions, even if they are combined with common knowledge or mutual convictions. Collective intentional states are not simply sets of individual, intentional installations combined with common knowledge or mutual convictions. Collective intentionality is irreducible to individual intentionality. A. Fiebich, S. Gallagher note that "joint intention" implies not only the existence of a common goal, but also the inclusion of individual intentions in the common goal [8].

Individual intentionality is what a person manifests when cognitively represents other people's experiences for himself, mimics or draws conclusions with the participation of these ideas, applies self-control and assesses how these simulated experiences can lead to concrete results in order to make a rational decision about what to do to satisfy your own desires. In cooperative communication, the subjects "externalize" calculations regarding the perspective and thinking of each other (P. Johnson-Laird, M. Pickering, S. Garrod) [6].

R. Tuomela, M. Bratman emphasize the cognitive aspect of collective intentionality and emphasize the importance of common knowledge [2]. H. Schmid argues that the phenomenon in question is a special combination of cognitive expectation and affective trust [4].

In any case, according to M. Bratman, joint activities require that individuals involved in this activity be mutually responsive, that is, each should strive to be sensitive to the intentions and actions of others, that each should plan their behavior with regard to other [2].

The strategy of interaction will depend on intentionality, including the choice of cooperation with the moral dilemma. The group members reason with the goal of achieving not what is the best for me, but what is the best for us [9].

The question remains: how children build the collective intentionality on the basis of norms and principles, whether a child's ability to understand the states, desires, intentions of another is connected with the ability to adhere to collective intentionality in a situation of moral choice [9]. H. Rakoczy, D. Kelemen note that the problem area also remains to consider the normative judgments of the other as an aspect of general intentionality, including the example of children's groups.

Thus, the purpose of the study was to map the connection between the

understanding of intentions and collective intentionality among preschoolers in a situation of moral choice.

Coordinated behaviors play a crucial role in shaping the ability to divide intentions as the foundation of social skills in development processes. Individual or collective actions necessarily begin with intentions. At the same time, according to R.S. Downie, the moral motive has its source and requires the existence of intentions at the individual level [9].

Therefore, intentional intentions are mental states that play a fundamental role in the perspective of building a joint intention, and therefore include the need to separate common mental states: shared minds (D. Sadler), "mental models" or the "Theory of Mind" phenomenon (J. Fodor), that is, the ability to attribute mental states (what we know, think, want, feel) of ourselves and others. A special role is played by the model of the psychic as the basis for the development of understanding of oneself and another in ontogenesis [10].

The importance of studying this problem in childhood is justified by the fact that the skills of general intentionality, for example, the ability to participate in joint attention and form joint goals, are not innate, but biological adaptations that arise during ontogenesis, because a person uses them for collaboration and communication with others.

Thus, it is relevant to reflect the role of the development of basic ideas about the mental world of other people among preschoolers in coordinating cooperation.

The most important skill that is formed in children is the ability to socially recursive and self-reflective conclusions about their own intentional states and intentional states of others [6]. Explicit and implicit socio-recursive thinking requires explicit ideas about mental states. That is, the child does not need to present, explicitly or implicitly, any mental states, let alone use social-recursive thinking, to share a common goal with someone.

Intentionality is also necessary when it comes to social games. The children clearly showed the skills of joint intentionality, being jointly committed to a common goal with common intentions [7].

In this regard, modern science emphasizes the importance of the processes of the general intentionality of early cognitive development of children.

Children can use cognitive ideas about their physical environment for causal conclusions, represent the intentional states of another person and use ideas to draw conclusions about the individual actions, taking into account his mental state. Children also control their own knowledge: based on their confidence that they know, they assess their chances of success in the task and make the appropriate decisions. Such thinking is focused not only on satisfying one's own individual needs, when he competes with his comrades in a group for valuable resources [6,7].

At the age of 4, children already begin to compare their mental states and

mental states of other people, which allows them to understand the reasons for their behavior and predict their actions in the simplest situations, this understanding is still unstable and does not reflect a complete understanding of the mental world of other people [10]. At the age of 5-6, the further development of the ability to form models of the mental world occurs, understanding of difficult aspects of the mental world as a cause of other people's emotions, intentions in situations of deception, predicting and explaining the actions of other people based on their desires and ideas about reality [10].

At the same time, socially recursive conclusions are often associated with egocentric prejudices. A number of studies show that "egocentric bias" is usually manifested in communication interactions: they have a tendency to ensure that their own perspective is automatically divided by another person (R. Nickerson, D. Royzman, N. Epley, B. Keysar, S. Birch, P. Bloom, S. Lin, I. Apperly) [5]. And this effect is especially pronounced in childhood.

Since the attribution of mental states allows us to interpret everyday events, an understanding of the intentions of others and the construction of joint intentions represent the basic structure of social actions and communication of preschool children.

The child makes a moral choice, comparing his ideas with social norms and rules, comprehending the meanings of the situation, comprehending the meaning and responsibility for the choice made. These assumptions allow us to hypothesize that when solving moral dilemmas a child relies on the ability to understand and interpret the world.

Materials and methods

Empirical sample. The study involved 36 typically developing children of preschool age (5-6 years, average age 5.4), 14 girls and 22 boys.

Methods:

1. To analyze the development of basic ideas about the mental world of other people among preschoolers, classical techniques were used to evaluate the understanding of the intentions and desires of children, namely:

1) The task of exploring the possibility of using the direction of gaze as an indicator of desire "What does Charlie want?" (S. Baron Cohen, P. Cross, 1992).

2) The challenge of understanding the principle of "seeing is to know": "Which girl knows what is in the box?" (S. Baron Cohen, 1989).

3) Test for the erroneous opinion of Sally-Anne (H. Wimmer, J. Perner, 1983).

4) The task of understanding intentions based on external signs (A. Meltzoff, 2002).

Taken together, these tasks revealed the level of the mental world understanding: 1. understanding of the feelings and emotional experiences of another;

2. the ability to take into account what the other knows; 3. the ability to determine intentions; 4. understanding of the relationship between the actions of other people.

2. Tasks for the study of the child's communication skills in a situation of moral choice (S.G. Yakobson, G.I. Moryom). A number of diagnostic series were proposed to study the observance of norms of justice, the study of the effectiveness of public and personal motive.

Initially, sets of toys and stimulus material from a drawn ladder of 11 steps were selected to diagnose self-esteem.

The first stage consisted of 3 episodes.

First episode. The preschooler was asked to distribute the game among the boxes between himself/herself and two other friends whom he/she does not see, 5 toys (the number is not initially divided equally, which creates an experimental dilemma for the child).

The second series. The child had to choose two of his 3 boxed sets for two imaginary partners and himself/herself, in 2 of them the toys were previously divided into equal parts, and in the other toys there were significantly more than 2 others (6, 3 and 3 toys).

Third series. The child had to choose 1 of 3 sets of toys not equal in number (9, 6 and 3 toys), and in the third – much more than others.

We fixed how many toys the child would keep for the game, and also how many he/she would give to his friends (he/she would take less for himself/herself, equally with someone or more than other children).

If a child divides toys in his favor, leaving himself/herself more (3 for himself/herself, others for one), it is considered that he/she makes a moral choice incorrectly, a low level of communication.

If he/she keeps two toys for himself/herself, and shares the rest among the other participants, the average level of communication skills.

If he/she keeps only one toy for himself/herself, and shares the rest among other participants, it is considered that he/she has made a moral choice correctly, a high level of communication skills.

Second phase. After sending toys to partners, we asked the child to evaluate themselves. To determine self-esteem, they offered to put themselves on 1 of 11 steps of a ladder drawn on a sheet of paper. On the 5 lower steps were children who did not share toys well (the lower, the worse); on the sixth step - those children who are not bad, and not well distributed toys; on the top 5 steps are the children who divided the toys in the best way.

Data processing was carried out using the SPSS V.23.0 statistical information processing program. To find the differences between the groups, analysis of variance (ANOVA) was used.

Results

Analysis of the children behavior in the course of experimental diagnostics made it possible to identify characteristic strategies of children's behavior. There were groups of children who:

1) Followed in all 3 series of uniform division of toys between themselves and the prospective partners (who comply with the norm) – 25% of the sample.

2) Preferred those options when they got more toys than their intended partners (violating the library) – 19% of the sample.

3) We used both distribution options – both equally and unequally (unstable) – 56% of the sample.

The data shows the priority of an unsustainable regulatory choice strategy. This becomes especially noticeable if we compare the series of the experiment. If in the first series 31% of children chose options when they got more toys, then in the second series 56% already, in the third – 44%.

In addition, data show that children were more likely to have undifferentiated self-esteem. 93% of preschool children were given the same high marks (9-10 points) both in compliance and in violation of the norm. This fact can be interpreted as the fact that for preschoolers any choice is considered equally valid.

In order to find differences in the ability to understand the intentions of others in children with different behavioral strategies, a variance analysis was used in a situation of moral choice.

Compared 3 groups of preschoolers:

1 - Children who shared toys, leaving a smaller amount.

2 - Children who shared toys, keeping two toys for themselves, and sharing the rest among other participants.

3 - Children who shared toys in their favor, leaving themselves more.

To find the differences between the groups, analysis of variance (ANOVA) was used using the Scheffe criterion for a posteriori multiple comparisons ($p < 0.05$).

The study made it possible to identify statistically significant differences between 3 groups of children (Shower statistics, testing dispersion homogeneity meets the criterion $p > 0.05$).

Interestingly, the differences were found precisely in the first series of tasks, where the child needed to distribute the toys himself, and not choose from the pre-distributed set offered. It is this situation that is the moral dilemma of choice, where the child imitates or draws conclusions with the participation of these ideas, applies self-control and assesses how these simulated experiences can lead to concrete results in order to make a rational decision about what to do: satisfy your own desires or make regulatory choice in the direction of the partner. It is these experimental conditions, when the child made a choice without real interaction, allowed to evaluate how children in choice rely only on their own socially recursive conclusions, and not

feedback from partners.

The results show that groups of children who keep less toys for themselves or divide toys in their favor possess higher skills of understanding the intentions of others ($F=4,2$, $p=0,024$, $2=0,226$) (Fig. 1).

Figure 1.

The choice of toys separation by preschoolers with different levels of understanding of the mental world

It can be assumed that a child with higher skills of other people intentions understanding will more often use the strategy of a socially desirable position based on the notions of the right and good deed ("I will give more to a friend", "You can't take more toys", "It is wrong"). This fact speaks about the priority of collective intentionality. This group of children has an understanding of the joint action in the form of "we" – this is the main characteristic of cooperation.

The second strategy of children with higher skills in understanding the intentions of other people is competing: distributing toys in their favor. In this case, the

child attempts to reduce the collective intentions to individual intentions.

Children with low levels of understanding the intentions of other people are more likely to share equally, in fairness. Such children enter into joint actions, since each of their partners gets the opportunity to satisfy their intentions or participation from their collective intentions, believing that the respective other will fulfill their contribution on the basis of mutual obligations. Such children interact with other members of the group “superficially” on the basis of formal norms. Each participant is supposed to have at least some knowledge of all plans and subplans regarding the measures taken by the group, but they do not rely on this information.

In these strategies, we see several intentional motives: an impulsive desire, a motive for observing a positive image of self or a motive for observing norms and rules. Note that among the answers about the choice of separating toys, different motivations were observed: “so right”, “I like the toys in this set”, “you need to share with friends”, “now we have to give it to Pete, I took”, etc. This fact confirms not so much the instability of the strategy of the regulatory choice, but rather its flexibility, the possibility of restructuring the motivational hierarchy and locus of intentionality.

Conclusions

Assuming that the mental model is the mental mechanism of social interactions, setting a collective intentionality, we obtained experimental arguments in favor of this hypothesis.

The results of the study confirm that the forms of communication and cooperation are flexibly built on the basis of socially recursive reasoning.

The understanding of the mental world is used as a means of analyzing and choosing ways to solve social problems, including moral dilemmas already in preschool age. Intentionality as an adaptation to solving problems of social coordination, in particular, the problems presented, the attempts of individual children to cooperate and communicate with others is built on the assumption and prediction of the behavior of a communication partner.

The communicative function is realized in the establishment of mutual understanding between the participants of communication, the psychological mechanism of which is the development of the mental model in preschool age. The ability of a subject relationship to another, endowing it with mentality allows you to effectively choose communication strategies of behavior.

Our study carried out with the participation of children of preschool age, made it possible, along with other data, to show that the mental model mediates interaction in a situation of moral choice.

Representing other people's experiences for oneself allows the child to evaluate the regulatory perspectives, standards and reasons for their own behavior, the behavior of other people or a group.

The development of basic ideas about the mental world of other people helps preschoolers:

To choose the strategy of individual or collective intentionality flexibly.

To understand and implement the choice of joint obligations in a situation of moral choice.

To build normative judgments about the intelligibility and rationality of communicative acts and reasons in order to bring them in line with the group's norms in a situation of moral choice.

Collective intentionality implies a strategy of mutual responsiveness, so that each strives are sensitive to the intentions and actions of others, so that each one plans his/her own behavior taking into account the behavior of the other. When the beliefs and motives of the individual are in the "we-mode", he/she is fully involved in the group's activities, in all he shares the group beliefs and ideas, subordinates his interests to the interests of the group.

However, highly developed basic ideas about the mental world help to build a common knowledge and a common plan of action, but do not imply any coincidence of intentions at all. Even if knowledge of the general plan of action is mutual and open, the intentions of individuals can still remain purely individual. In this connection, these studies allowed us to identify two strategies for children with higher skills in understanding the intentions of other people: socially normative and competing. In our opinion, this reflects the fact that collective intentionality is not just a "common point of view", but implies identification with a group and the less collective intentions and beliefs an individual shares, the more difficult it becomes to see him as a member of the group.

There is no conflict of interests.

The study was carried out with the support of the grant of the President MK-3052.2018.6 "The formation of mechanisms for the arbitrary regulation of the orienting part of joint activities in the early stages of ontogenesis".

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СВЕДЕНИЯ ОБ АВТОРАХ:

Смирнова Яна Константиновна – кандидат психологических наук, доцент кафедры общей и прикладной психологии Алтайского государственного университета; 656049, Барнаул, пр. Ленина, д. 61. email: yana.smirnova@mail.ru.

ДАТА ПОСТУПЛЕНИЯ: 25.03.2019

ДАТА ПРИНЯТИЯ В ПЕЧАТЬ: 07.06.2019

ССЫЛКА ДЛЯ ЦИТИРОВАНИЯ:

Смирнова Я.К. Модель психического и способность придерживаться коллективной интенциональности у дошкольников // *Личность в меняющемся мире: здоровье, адаптация, развитие: сетевой журн.* 2019. Т.7, № 2 (25). Доступно по ссылке: <http://humjournal.rzgmu.ru/art&id=381> Ссылка активна на чч.мм.гггг. doi: 10.23888/humJ20192402-413

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INFORMATION ABOUT AUTHORS:

Smirnova Yana Konstantinovna – PhD (Psychology), Associate Professor of the Department of General and Applied Psychology of the Altai State University; 656049, Barnaul, Lenin Ave. 61. email: yana.smirnova@mail.ru.

PAPER RECEIVED: 25.03.2019

PAPER ACCEPTED: 07.06.2019

REFERENCE FOR CITING:

Smirnova YaK. Mental model and ability to attend collective intentionality in preschool children. *Personality in a changing world: health, adaptation, development: a network journ.* 2019; 7 (2). Available at: <http://humjournal.rzgmu.ru/art&id=381> Accessed: dd Month yyyy. doi: 10.23888/humJ20192402-413