Analysis of Game Structures in Children

Antonio Ascione, Pompilio Cusano, Davide Nocerino, & Davide Di Palma
Department of Movement and Wellbeing Sciences,
University of Naples Parthenope,
Italy
davide.dipalma@uniparthenope.it

Abstract
Game is the main tool through which the child expresses his identity and develops his knowledge, even the most complex one. Many scholars have shown how free and socialized game has an important and fundamental function in the development of cognitive, creative and relational skills. For a child, game is an activity in which he feels able to express his own personality. The analysis of the game structures allows us conveying didactic-educational principles in the training phase, which can be observed almost naturally during growth, and that affect the psycho-physical development of people. These structures concern the exercise, the symbol and the rule. Elements of connection develop from the first exploration activities up to the correct use of the symbolic game in the first phase of the intellectual growth. Learning about the knowledge to be transmitted through the game is decisive.

Keywords*: Game, Socialization, Exercise, Symbol, Exploration, Rule, Growth.*

Introduction

From the methodological-didactic point of view, we can divide the three great types of structures that characterize the games of children into three types of structures encompassing exercise, symbol and rule, while the construction games are those that allow for the transition between these three types of games and the adaptive behaviors. Some games do not suppose any particular technique: simple exercises implement a set of different behaviors that have no other end than the pure pleasure of their functioning. The child performs such actions only for fun and, not for necessity or for learning new behaviors. The simple exercise game, without the intervention of symbols, fictions or rules, is what particularly characterizes animal behavior. In the child, the exercise game is the first to appear and is what characterizes the stages of preverbal development, in opposition to the stage during which the symbolic game begins, so the game activity goes far beyond the reflected patterns and continues in almost all the actions. Although it is essentially of sensorye-motor type, the exercise game can also affect higher functions: for example, asking questions for the pleasure of questioning, without having any interest in the answer. A second category of games for children is what is called symbolic game. Contrary to the exercise game, which does not presuppose thought or any specifically playable representational structure, the symbol implies the representation of an absent object, since it is a comparison between a given element and an imagined one; a fictitious representation, since this comparison consists of a deforming assimilation. For example, the child who moves a box by imagining a car symbolically represents the latter through the former and is satisfied with a fiction, since the link between the signified and the signifier remains entirely subjective. Because it implies representation, the symbolic game appears only during the second year of a child's development.

However, between the symbol itself and the exercise game there is an intermediate term that is the symbol in acts or movements, without any representation: for example, the ritual of

movements performed by a child to fall asleep is first only derived from its context and reproduced in the presence of the pillow (in the form of a game), and then is imitated in the presence of other objects (in the sixth stage), which marks the beginning of the representation. This continuity does not prove that the symbol is already contained in the sense-motor playful assimilation, but it shows instead that when the symbol is included in the sensory-motor exercise it does not suppress the latter at all, but it simply subordinates it. The majority of symbolic games, except for the constructions of pure imagination, implement complex movements and actions. They are combined, being them sensory-motor and symbolic, but are defined as to the extent that the symbolism integrates the other elements to itself. Furthermore, their functions increasingly differ from simple exercise: compensation, fulfillment of desires, suppression of conflicts (and so on) are continually added to the mere pleasure of dominating reality. Finally, during the development phase, a third great category (that of the rules) is superimposed on the symbolic games. Contrary to the symbol, the rule necessarily presupposes social or inter-individual relationships. A simple sense-motor ritual, such as walking along a balcony touching all the bars with one's own finger, is not a rule. The rule is an order imposed by the group, in such a way that its violation is perceived as a fault. Like the symbolic game, which frequently includes a set of sensory-motor elements, even the rules game can have the same content as the previous games. However, it also presents a new element, the rule, which differs from the symbol as much as the latter does from a mere exercise, and which necessarily results from the collective organization of game activities.

Exercise games

Exercise, symbol and rule seem to be the three consecutive orders that characterize the great classes of games, from the point of view of mental structures. However, there is also a fourth type of games, those of proper games construction or creation, which mark an internal transformation of the notion of symbol in the sense of an adapted representation. However, in fact, the construction game implies a whole activity of actions sorting and tools classification, and involves designing the transformation of materials, thus representing a sort of further step. All this while remaining in the playful dimension that continues to motivate the child first, and the young guy then, to search for the construction of mental images that, from the static position of the copy in the presence of the "original" or in recalling his memory in its absence, must switch to that dynamic involving the intentional anticipation of the product: to make a construction, in fact, one must have a project in mind; in this sense they are of great interest for the educational and didactic dimension, and gain great recognition in the training of the disabled.

In the phenomenology of the game for the child, then, the construction game has a more clear evidence coinciding with symbolic games and rules, but it should not be denied that it widely subsists in the functional game phase too, even if, for simple actions on which it is applied (for example, when putting two objects on top of or underneath, near or far from each other, in the implementation of the manipulation functional game, but in the perspective of building the tower, etc.) it does not get that attention which is only realized by who, instead, takes care of favoring school integration with the realization of a cognitive action in subjects with strong understanding difficulty. The child's first game activities can be considered of exploration and manipulation type, and their development is encouraged by interactions with the environment and with the people who are in it. Initially, the game coincides with global activity; it remains for a long period a typical moment of the child's action and behavior and, as we have seen, depending on the different phases of psychophysical development, it takes different forms and characteristics from time to time. It is to satisfy this need for activity and exploration of things that the adult sometimes also introduces toys into the child's field of action; elements that help

steer an existential reality that is still too big and complex to be globally and directly explored. The games therefore have a double meaning: on the one hand they respond to the physiological needs for movement and tactile, sonorous, olfactory and visual exploration; on the other hand, by adapting reality to the child, they allow him enriching his faculties and knowledge in order to gradually recognize the objectivity of the external world, developing control, intervention, transformation, exercise and creativity skills. Thus the child likes observing the movements of his own hands, bang on a surface to cause noise, take and leave the objects, bring them to his mouth, pass them from one hand to the other, hit overhanging objects and observe their swinging. The child's world, initially centered on the discovery of himself and the other, progressively becomes enriched by the presence of objects, things to watch, to take and explore.

The child's first responses to non-familiar objects are cautious, almost suspicious: as he becomes familiar with things, his action turns from exploration into manipulation, and finally into a game. The exploration and game times, therefore, do not coincide, and generally it can be said that the game begins only when the effect of the novelty has come to an end and the child has become familiar with the new objects. At a behavioral and functional level, there are many differences and similarities between exploration and game. Both exploration and game serve to acquire information about objects; however, while the exploration provides information on the properties of objects (shape, size, weight, color, consistency, rigidity, temperature), the game serves to give information about what can be done with them. Exploration and game, though different in functions, are two sides of the same coin, the relationship between the child and the physical world. Children are more concentrated and can withstand more interruptions when they are exploring something; their heart rate is more regular, behaviors are more stereotypical and less flexible, unlike what happens, however, during the game. Exploration depends on the novelty and complexity of the object, and also under this aspect, it differs from the game, which, as we said, becomes possible only when the object has become familiar. As the child grows up, the time spent exploring decreases, and the time for playing increases. In the child's exploratory activity during infancy we can recognize some directions of development, which have been broadly documented. First of all exploration, at first undifferentiated, becomes systematic and purpose-oriented; it means that the first forms of exploration are generic, not determined by the nature of the object, whereas, as time goes by, actions become objective-oriented and consistent with the specific characteristics of things.The second line of development, however, concerns the methods of manipulation of the objects. The latter are first manipulated one at a time to be subsequently combined with each other in a planned manner, over time, in order to find the relationships that connect them. In the first months of life, the child seems to be guided in the interest towards objects by discovering his ability to act effectively. Between the second and third month of life, the object's grip by the child becomes bi-manual, the hands have greater mobility, the exploration appears more systematic and concerns no longer only one particular feature, but the various characteristics of the object. A very important progress in the relationship with the physical world is made possible by the oculus-manual coordination and the ability to take things and bring them to the mouth. The evolution of this skill involves both the movement of the arm towards the object, and the gesture of the prehension itself: at the beginning, as for the arm, the child's movement is casual, disordered, it almost seems to "sweep off" the object rather than approaching it; subsequently, with the increase of the motor control, the "target" at the object becomes more accurate and precise. Even the gesture of taking something undergoes an evolution, and it turns from the palmar pressure, without the use of the thumb, to a more efficient grip that employs the thumb with the other fingers of the hand. Once discovered the possibility to take and hold the object in order to look at it or to

inspect it with the fingers, an intense activity focused on the objects begins: this activity includes, in the first months, the extension of the same action to everything that a child picks (for example, everything is brought to the mouth, passed from one hand to another, or thrown on the ground), and in the second semester of life, it is followed by the exploration of differences, i.e. the selective manipulation according to specific properties of objects.

At the beginning, as Piaget observed, the child's motivation does not come from the object itself, but from the action. Subsequently, from 8-9 months onwards, the focus shifts to the object and to what can be done with it. In this period we can observe what Bruner definedthe "mastery game", while revisiting Piaget's concept of exercise, which is the desire to go beyond the boundaries of newly acquired skills.So it is possible to noticea child who is now able to control the object without it falling from his hands and, is able to carry out an intense program for changing the "what to do with that object"; therefore he will shake it, he will bang it on the chair or on the highchair's table top; he will look at it, and will finally let it fall. In other words, the same object will become part of different action schemes, and the child will systematically explore the various possibilities offered by different actions. During the first two years, the child develops multiple manipulation patterns ranging from simple oral-mouth exploration to visual exploration, from generic to functional manipulation, to finally get to the spatial-temporal and causal combination of several objects put together appropriately. The activity of explorating and manipulating objects is influenced by numerous factors: the novelty and complexity of the stimulus, the quality and quantity of materials, the characteristics of the environments in which the children are, and the individual differences. The new materials influence the type of response by the children, who try to reduce the elements of uncertainty by exploring the characteristics of the object. Once become familiar with the objects, another aspect that influences the children's activity concerns the diversity among the various materials they are made of: for example, clay, sand, wood, plastic and then colored blocks, colors with fingers, liquid colors and so on; all substrates that, on the one hand, favor manipulation aimed at constructing something, especially in older children, on the other hand they discourage social interaction, by rather encouraging individual activity. The physical place is another determining factor for the exploratory and recreational behavior of children: being outdoors, in the school playground or in a public park, for example, is very different from being in a classroom or at home with friends. A further element investigated by the study on the child's exploration concerns the relationship between children's individual differences and their exploratory behavior. This is linked to the ability to solve problems assessed in subsequent periods. In particular, this indicates a promising direction of investigation, because it could be assumed that the ability to explore is an important requirement for those activities that need active research, production and integration of information (as in the construction game).

From exercise games to sensory-motor patterns in a symbolic projection

In order to give a fair interpretation of the game in general, it is necessary to reflect on the limits that determine the transition from exercise games to symbolic games. It could be said, in fact, that the symbolic game is still an excersise game too, but it is such as to exercise that particular form of thought that is imagination. There is an obvious difference between intellectual exercise games and symbolic games. When the child likes asking questions for the pleasure of questioning, or inventing a story (be it fake too) for the pleasure of telling it, the question or the imagination constitutes the game contents, and the exercise constitutes its form: so we can affirm that questioning or imagination are exercised through game. On the other hand, when the child transforms an object into another one or makes his doll perform the same actions he does, symbolic imagination represents the game form or instrument, and

it is no longer its content: this content, then, is the object of the child's own activities, and in particular of his affective life, which are evoked and thought of thanks to the symbol (the "maternage", the adventure, the war and so on). Like in non-symbolic games, the exercise consists of a functional assimilation that allows the subject consolidating his sensory-motor powers (use of the body or things with the body) or those intellectual (questions, imagination, etc.), thus the symbol provides him with the means to assimilate the real to his desires or interests: therefore, the symbol extends the exercise for it is a playful structure, and does not constitute a content in itself.

In the intellectual exercise game, on the other hand, the child has no interest in what he asks or affirms, because only the fact of asking questions or imagining is what amuses him, while in the symbolic game he is interested in the symbolized realities, in those realities evoked by symbolic activity. In this sense it may be appropriate to classify symbolic games according to the structure of symbols as such: symbols conceived as instruments of playful assimilation. In this regard, the most primitive form of the playful symbol is one of the most interesting, since it precisely marks the transition and continuity between the sensory-motor exercise and the symbolism: the initial symbolic "pattern" consists in the reproduction of a sensory-motor pattern outside of its context and in the absence of its usual objective. These symbolic "patterns" mark the transition between the exercise game and the real symbolic game: as for the former, in fact, they preserve the characteristic of applying a behavior outside of its context of original adaptation or of its specific purpose, for the simple pleasure of putting it into practice (so the child who has functionally learned the patterns of the non-alternating jumped half step by going up and down the stairs, while uniting the two feet on each step and keeping alwaysthe same foot as the first to move; he replicates this movement without going up or down the stairs for the mere pleasure of dominating it and repeating it more just because he likes it, perhaps under the stimulus of a suitable rhythm); as for the second, they already show the ability to implement that behavior by modifying its usual meaning, albeit in a fictional context created specifically, both in the presence of new objects conceived as simple substitutes, and in the absence of any material support.But the symbolic sensory-motor pattern already belongs to the symbolic games, even if it does not represent a primitive form centered on the subject: the child limits himself to pretending to put into practice one of his usual actions, without attributing them to others and avoiding assimilating objects between them. This is how the child pretends to sleep, to wash himself, to swing on a table, to eat, and to bring something; so many patterns that he implements not only without current adaptation, but still symbolically, because he acts in the absence of the usual objectives of these actions and of any real object. Subsequently, the subject will make fictitiously objects or other subjects sleep, eat or walk and will thus begin to symbolically transform the objects in use. Certainly the playful assimilation of the image of one object to another still remains internal to the reproduction of one's own behavior (pretending to sleep) and does not separate from it, as it happens in the following period, because it remains in the form of an assimilation linked to the actions attributed to things (laying the head on the pillow) .The symbol is therefore not yet freed as an instrument of thought itself: it is only behavior, or the sensory-motor pattern, which takes the place of the symbol, and not the object or its image in particular. Being detached from its context, however, the sensory-motor pattern in symbolic projection begins to grant the primacy of representation on the action itself, and allows the game assimilating the world outside the Self, with means that are infinitely more powerful than those of the simple exercise. Starting from the symbolic sensory-motor pattern, we can thus see the function of the symbolic game taken as a whole. While making the most of the playful dimension, the game allows us developing the spirit of cooperation, socialization and self-control. The compliance with the rules is an essential sign of cohesion and collaboration. The

game stimulates the child's various types of intelligences. It is an approach to learning, essential for it to be achieved, and is an inexhaustible source of learning.

Rules Games

The rules game appears during the second stage of a child's development (from four to seven years) and reaches its apogee during the third stage (from seven to eleven years). Unlike the other stages, if in the adult there is only some residue of simple exercise games and symbolic games (for example, the telling of a story), the rules game persists and indeed evolves throughout the whole life (in sport, cards and chess games, etc. up to economy, government and war contexts). The reason for this double situation, i.e. the belated appearance and survival beyond childhood, is very simple: the rules game is the playful activity of being socialized. In the same way, in fact, with the arising of the thought, the symbol replaces the simple exercise, and the rule replaces the symbol and frames the exercise only when certain social relationships are set up. First of all, it should be outlined that the individual alone does not provide himself rules, if not by analogy with those he was given; in fact, it is impossible to observe spontaneous rules in an isolated child: for example, a child with marbles makes some symbolism or plays to throw them etc. (simple exercise) by gaining habits, up to getting to at spontaneous regularities (launching marbles from the same place, at the same distance, etc.). Yet in the rule, in addition to regularity, there is an idea of obligation that supposes at least two individuals. The situation closest to the rules, observed in the child as an individual alone, is that of ritualized sensory-motor games, but it should not be confused with the rules game, since there is neither obligation nor prohibition. As for the proper rules, we must distinguish two cases: the conveyed rules and the spontaneous rules, i.e. the rules games that have become "institutional", in the sense of the social realities imposed by the influence that one generation has on the other, and rules games of contractual and temporary nature. The institutional rules games, such as the marbles game, suppose the action of older subjects on younger ones: the imitation of the older because of his prestige. The spontaneous rules games, on the other hand, are more interesting: they arise from the socialization of both simple exercise games and also, at times, of symbolic games, and from socialization between peers. Ultimately, rules games are games of sensory-motor combinations (racing, marbles, balls and skittles games, etc.) or intellectual combinations (cards, chess, dice, etc.), with the competition of individuals (without whom the rule would be useless) and regulated both by a code conveyed from generation to generation, and by momentary agreements.The rules can result both from adult practices that have fallen into disuse (of magical-religious origin, etc.), from sensory-motor exercise games that have become collective and, finally, from symbolic games that have become equally collective, but that are fully or partly emptied of their imaginative content, i.e. of their symbolism. Unlike the exercise game (which after a culminating phase in the early years of life decreases in importance over time) and the symbolic game (that finds its climax between two and four years, and is destined to a decline too), the rules games seem to escape this law of involution and to develop with age. They are almost the only ones to persist in adults. Being such games socialized and disciplined thanks to the rule, it is their causes that explain together both the decline of the child's game, under its specific forms of the exercise and then mainly of the fictitious symbol, and the development of rules games in essentially social rules. The rule is a source of socialization, and its spontaneous recognition, as well as the participation in creating it or modifying it, make up the individual moral personality, but from the child's social perspective. Rules games strengthen the sense of self-esteem, educate to sociability and to the respect for the rights of others.

Conclusions

The educational practices concerning the game in childhood promote cooperative, active, constructive and well-organized learning, with teachers able to be in line with their students' needs (in this case children); in addition, they must build an educational path made of a right sequentiality in harmony with the development of playful activity. Learning about and knowing how to determine the elements concerning the exercise with a correct curricular programming, I addition to symbolic and rule game, is a correct identification of the objectives to be achieved in the students' psychomotor development.

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