

Bessie Dendrinos

THE RELATIONSHIP OF COGNITIVE AND LINGUISTIC DEVELOPMENT ACCORDING TO PIAGET

Piaget's study of the verbal behaviour in children indicates in a rather decisive manner that progress in logical thinking is in no obvious way linked with the progress in linguistic ability. His study is not extended to the linguistic behaviour of children, whose language knowledge he took for granted thinking that children can adequately express what they are thinking.

Language behaviour is found within the same context as other forms of symbol behaviour, which are inherently dependent on knowing activity, and on the symbolic function in general. In this respect language acquisition is not unlike image formation. The main differences being that language imitates a "symbolic" event, whereas image imitates a "real" one. One should consider that an operative, assimilative contribution is needed for both, and under these conditions the difference is not great, for children do not learn language as an adolescent memorizes foreign language vocabulary items, but in the same way in which they adapt to customs and regulations within the family or society. Once the child has reached a stage where he can make a symbol-oriented response, he is ready to respond meaningfully to the total situation of which spoken language is a part, and as a by-product he learns language.

Early schemes of hearing, voicing, of reciprocal eye, ear, voice and movement coordinations have prepared the child for some of the phonetic phases of the language situation. Another prerequisite for language acquisition is undoubtedly the grasp of time sequences within practical actions. Sequencing is inherent in his own or other people's motor acts or events, e.g. the child's familiarity with the expected sequence of washing, repairing, and filling the bottle. Sequential ordering is of paramount importance for hearing the differences between echolalic similar words i.e. "pot" and "top", and for paying attention to sequential rules of grammar. Most importantly, the basic mechanism of symbol acquisition, which drives from accommodative imitation, is equally at work in the linguistic as in other symbol forming situations.

Accommodation to a global situation in which a child just broke a cup, and spilled the milk on the floor, consists in paying attention to the particular visual and auditory events, part of which is hearing a sentence like "How terrible, you broke a cup and spilled all the milk on the floor". The auditory mechanism accommodates to the sound sequence and the

voice organs begin to shape themselves in convert imitation of the heard speech with reciprocal influence of these two processes. There is also visual and kinaesthetic accomodation to the seen movements. The child also responds to the social and the emotional situations by interior reactions that correspond to the autonomic reactions of the by-standers.

There is a corresponding assimilative activity which confers meaning on the total situation by transforming the sensory input into things and events that are known according to the structures available to the child. At this moment, there is an enumerable variety of active schemes, and these as well as many other structures interrelate in a tight network of the child's particular organization of knowing. When the child suddenly responds to a situation (in this particular one) "cup broke", one cannot infer that the child has learned the words at this moment.

To a number of pertinent questions that would arise "(such as: a) why did the child put the words in this particular order? b) is the word "broke" associated just with the event of breaking? c) is the word linked to an undifferentiated situation of something bad, or something interesting? d) why did the child repeat just the two words, and not others that were more conspicuously stressed) one would answer that on a Piagetian theoretical basis, the child has approached the particular linguistic situation, with a variety of knowing structures. Thus, while the imitative accomodation is far from being a passive copy of an external event, the response is an "appropriate" one. The particular external accomodations of the hearing and speech organs were already prepared, as the child had previously acquired structures of comprehending sound sequences, and grammatical rules of his mother tongue. The child's saying "cup broke" is but a first external manifestation of a process of comprehension that has been at work for a long time, both in the sense of the growth of intelligence in general, and in the quite specific sense of acquiring particular linguistic knowledge.

This analysis of a single speech situation, stresses first the active structure of knowing schemes to which the child assimilates the events, at the same time as it accomodates sensory and motor parts of the organism to the event. The structure includes previously acquired schemes corresponding to the phonological, grammatical, and other levels of specific language, and the child expresses these knowing structures by a sound sequence, just as he might with an outward gesture. As far as symbol formation is concerned, the two actions are functionally ecquivalent. Both can become internalized, and serve as differentiated signs, i.e., as symbols to refer to the event as known by the child.

In distinction from other symbols, which serve primarily the knowing function, speech is biologically oriented, not to the knowing, but to

communication. Its whole system is geared towards social exchange. It is a misunderstanding of its basic nature to look for a completely consistent reflection of logical thinking in the linguistic organization.

At sensorimotor levels, preceding language, as has been stated, one notices the elaboration of a whole system of schemes that prefigure certain aspects of the structure of classes and relations. Each scheme becomes a sort of practical concept, and in the presence of an object that is new to him, the infant will seek to assimilate it by applying to it successively all his available schemes, as if it were a question of "definition by usage."

By generalization, schemes constitute at first quasi-classifications, and one and the same goal can correspond to a number of means capable of reaching the goal and equivalent among themselves from this viewpoint; or again, one and the same means can lead to various goals (i.e., "all ladies are mummies"). The classes involve a "comprehension" from the subjective viewpoint, and also an "extension", but merely from the viewpoint of behaviour observed by the experimenter. The subject is not capable of representing to himself this extension which he will be capable of attaining only after reaching the level of symbolic functioning.

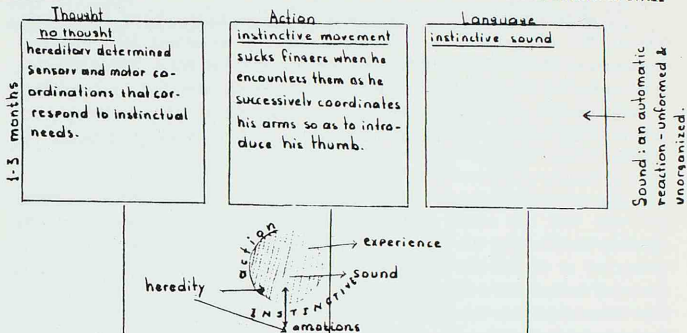
Moreover schemes involve a great variety of active relations that prefigure the logic of relations which will develop eventually on the plane of representation, and lead further to practical inferences. Thus when an infant of 16-18 months looks for an object under a small towel under which one has previously placed a hat, not seeing the object when he removes the towel, the infant will immediately conclude that the object is under the hat. At about the second year there develops the elementary form of conservation which is the scheme of permanent object, and constitutes a kind of "invariant of a group."

Therefore, before the operations formulated by language, there exists a kind of logic of action coordination. This logic is characterized by order relations, and by the hierarchical linking of the part to the whole, and these notions do not depend on language. Assuredly, the formation of thinking as conceptual "representation" goes hand in hand in the child with the acquisition of language; but one should not see in conceptual representation a simple causal result of language, for both processes are linked to a more general process which is the symbolic function. Language appears at the same time as symbolic play, deferred imitation, and a mental image, insofar as it is internalized imitation.

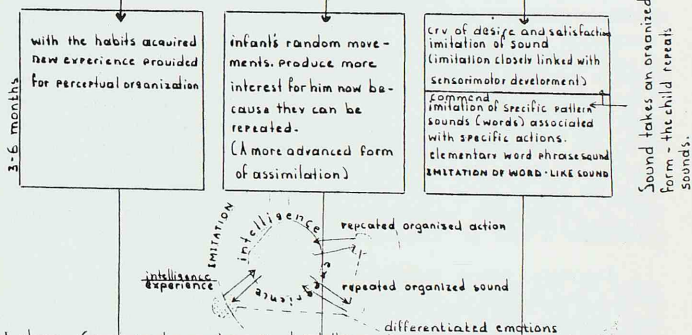
It is noteworthy that language is acquired in a context of imitation, and this imitative factor seems to constitute an essential support. If

DEVELOPMENT OF THE CHILDTHE NEONATE AND THE INFANT

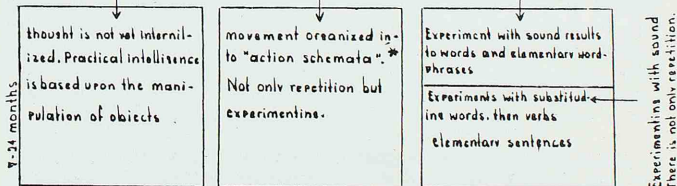
1st stage - "the world is essentially a thing to be sucked". THE REFLEX OR HEREDITARY STAGE



2nd stage - (Sensorimotor schemata) THE STAGE OF FIRST MOTOR HABITS. FIRST ORGANIZED CONCEPTS



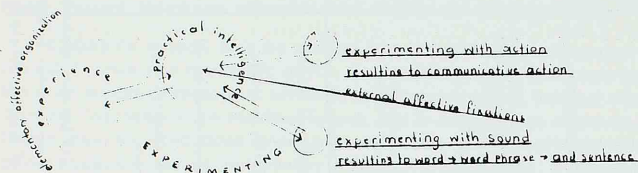
3rd stage - (Sensorimotor and practical intelligence) SENSORIMOTOR PRACTICAL INTELLIGENCE STAGE



* i.e. bringing the objective closer by means of pulling the support on which it is resting.

language acquisition were only due to conditioning, it should take place at a much earlier age. But the development of imitation is itself linked to the development of intelligent behaviour in its totality, and thus it is apparent that one can legitimately consider language as playing a central role in the formation of thinking only insofar as language is one of the manifestations of symbolic function; and the development of the symbolic function in turn is dominated by intelligence in its total functioning.

(The action schemata constructed at the previous stage become capable of coordinating with one another through a process of reciprocal assimilation).



Four fundamental processes characterize the intellectual revolution, during which the child is between the ages of one to eighteen months. The construction of the categories of: a) object b) space c) causality d) time.

Until a definite form of language is acquired, interpersonal relations are limited to the imitation of corporal and other external gestures and to a global affective relationship without differentiated communication.

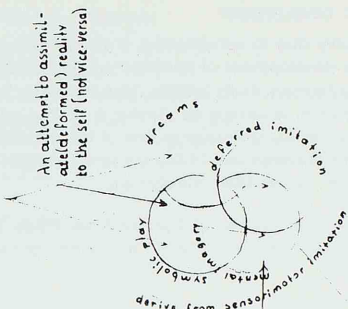
APPEARANCE OF LANGUAGE (2-7 years)

Thought preceds language, the second of which confines itself to profoundly transforming thought helping it to attain its forms of equilibrium by means of a more advanced schematization and a nonmobile abstraction.

With the appearance of language the child will undergo a series of new adjustments and assimilations, adjusting his organism to the organized environment and vice-versa. Parallel to language other means of expression are developed, interdependent or independent of language. An attempt to summarize these and to give a clearer picture is made below.

PARALLEL TO LANGUAGE AND INDEPENDENT OF IT

PERSONAL SYMBOLS



This existing symbolic function is broader than language, & it encompasses both systems of verbal signs and that of symbols in the strict sense.

Link between sensorimotor behaviour & representative behaviour independent of language but aiding its acquisition.

APPEARANCE OF LANGUAGE

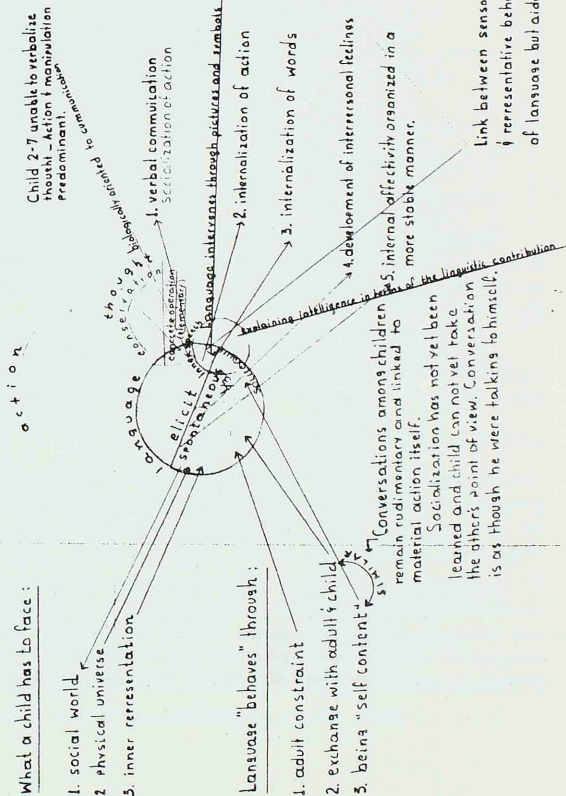
LANGUAGE IS NOT AN INTRINSICALLY NECESSARY ELEMENT OF OPERATIONAL THINKING

What a child has to face:

1. social world
2. physical universe
3. inner representation

Language "behaves" through:

1. adult constraint
2. exchange with adult & child
3. being "self content"



During this age, systems of logical operations bear on the classes and relations or objects themselves, and they are organized apropos of the real or imagined manipulation of these objects. This first set of operations called "concrete operations" involves only the additive and manipulative operations upon classes and relations which result in classifications, seriations, correspondences. They are elementary groupings. Is language the only source of classification, etc., which characterize the form of thought, linked to these operations or is it independent of language? According to Piaget the latter. Language definitely extends the power of these operations and confers on them a mobility, and a universality, but it is not the source of such coordinations. Sensorimotor intelligence exists prior to the acquisition of language. It does not though make thought structures universal and mobile as language does.

Children's speech may be divided into the two large categories of *socialized speech* and *ego-centric speech*. Ego-centric speech continues until the child is able to dissociate himself from his surrounding, and get away from his "narcissism" (in Freudian terms), that is until the age of eleven or twelve when the child stops ignoring the existence of self, and regards his own perspective not as immediately objective and absolute. It continues until the child's anthropocentric illusion stops existing. Before that the child's capacity to form an objective conception of reality is non-existent, and it is indifferent to the life of thought as the originality of individual points of view escapes it. It is for this reason that Piaget labels the child's speech as ego-centric, and not socialized as Vygotsky labels even the monologue. For the above mentioned reasons, the child is rarely interested in really communicating (as we will see, even when he asks questions), and often ignores his audience, whereas the adult, even of a pueril disposition, may think aloud, but is conscious of his audience, and thus even his soliloquy is socialized.

Ego-centric speech may be sub-divided into the following categories:

- 1) *Repetition (Echolalia)* - The child repeats words and syllables for the mere pleasure of talking, using words, with no thought of talking to anyone. It is simply a joy for its own sake. From the point of view of behaviour, imitation is an ideomotor adaptation, by means of which the child reproduces, and then simulates the movements of those around him. From the point of view of personality, it is a confusion of the I, and the "not I". At his most imitative stage the child mimics with his whole being, playing a game as though it were his own creation.
- 2) *Monologue* - The child talks to himself as though he were thinking aloud. Initially there is a close bond between word and action. For this reason, there is a much tighter interconnection between the two for the child than there is for the adult. Thus the child a) speaks to acco-

company his actions when he is alone, but can also b) reverse the process, and bring about what action cannot. (Hence the habit of inventing and romancing, creating reality by words and magical language). This second type of monologue serves not so much to accompany language as to replace it.

Words here have no social function, thus this is a side-tracking of the original function of language, and in a sense is due only to a return shock of words acquired in relation to other people.

3) *Dual or Collective Monologue* - In this type of speech, there is another person involved, but is never taken into account. He serves as a stimulus. The child is just talking to himself in front of others.

Socialized speech may be sub-divided into the following categories:

4) *Adapted Information* - The child really exchanges his thoughts with others here, by saying something that will interest his listener or influence his actions, either by an actual interchange of ideas, by collaboration, or by argument.

In childish argument, statements are never supported with the "because" and "since" of logic, because there is no attempt for logical justification (at about age seven, there is an attempt for the use of "because"). Causal relations remain unexpressed, and are thought about only by the individual, by words. Only the underlying factual element finds expression.

5) *Criticism* - This group includes all remarks specified to a given audience about their work or behaviour. This criticism in children is more affective rather than intellectual. (Depreciating others, asserting the superiority of self) It often raises quarrels and emulation.

6) *Commands, Requests, Threats* - The child does not communicate with his fellow beings to share his thoughts, but in order to play. Thus the part played by intellectual interchange is reduced to the minimum. The rest of language will assist action, consist of commands, etc.

7) *Questions*

I. The child's "whys"

"Whys" appear around the age of three, and there are several types: "whys of explanation", "whys" meaning "for what reason" etc. Because children of the age of three or four are concerned with fact and description, because there is little concern with causality, two ages may be distinguished in the child's "whys": age 3-4, questions of place and name, age 7, questions of cause and time.

The principal types of whys are:

a) "WHYS" OF CAUSAL EXPLANATION - There is a certain category of childish "whys" which seem to demand a causal explanation, but the question may be purely verbal and indicate pure astonishment without calling for an answer, which is often the case with children. Very often if

one does not answer immediately, the child will himself answer. He asks unending questions because for him everything has an aim, but can often invent this aim himself through his realism and animism. We shall not deal with these questions here but with questions that ask for a causal or finalistic explanation.

The child even between six to eight takes very little interest in the *how* of phenomena. His curiosity reaches only the general cause, and the questions bear witness to the child's artificialism, while there are others that raise the problem of chance in the thought of the child. The questions of "whys of causal explanation" on nature, may be subdivided into questions concerning 1) inanimate objects 2) plants 3) animals 4) human beings.

Both in verbal intelligence, and perceptive intelligence, there is a tendency (which lasts longer in the former) to look for a justification at any cost, of what is simply a fortuitous concurrence, or a mere datum. In perceptive intelligence, it is because the child is incapable of conceiving the "given" in experience, and thus thinks in personal, vague, analyzed schemas, this being "syncretism" which is characteristic of confused perception, where objects are being perceived as a lump, not as diffused and discontinuous. This is reflected in the verbal intelligence, and the syncretism of verbal thought implies the child's connecting the most heterogeneous statements, and contriving to justify them. The child does not adapt himself to the details of the sentence, but retains a general image of it, which is more or less adequate.

The child confuses the human necessity with physical necessity, and a great many of the children's "whys" do no more than appeal to this feeling of necessity, and an effort for something more will be negated, for the child denies the "given", despite what others have said contrary to this, because as has been stated the child lacks the experience.

b) "WHYS" OF MOTIVATION" - These are questions connected with motive, with a psychological explanation. Under this classification are questions with the motive of chance action, or of an indifferent phrase, and others relating to psychological explanations, in which cases the term "motive" takes its full meaning, both finalistic and causal, for to consider an action psychologically is to consider its motive both as its cause and as its aim. To this group of "whys", another abundant group may be added; that which includes questions which a child expresses simply in order to contradict a statement or a command which annoys him.

c) "WHYS OF INVENTION" - In these the child tells stories, or personifies in play the objects which surround him, and this is in connection with his romancing. Here he asks questions which do not admit any possible answer.

d) "WHYS OF JUSTIFICATION" - These are a sign of the child's curiosity about the whole set of customs and rules which are imposed from outside, without motive and for which he would like to find a justification. They could be subdivided into three groups: 1) social rules and customs 2) rules appertaining to lessons learned in school 3) definitions.

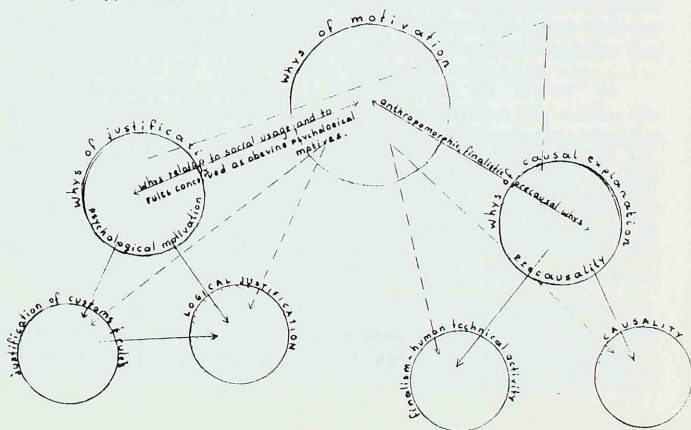
It may be of interest to note, in conclusion of the "why" questions that children occasionally confuse notions. They may for instance take the word "why" for "because", and use the word to express the relation of reason to consequence, and that of consequence to reason. i.e. in *The Language and Thought of the Child*, pg.202, Del (young boy of 7, of the Maison des Petits, de l'Institut Rousseau): "Rain water is good - Is it why (=because) it is a spring?"

The "whys of motivation" outnumber all the others. This indicates that the other types of "why" radiate from this group as from a common centre.

A GENETIC TABLE OF "WHYS"

The only relationship between the two, is that the idea of precausality presupposes a confusion between causal explanation and logical justification, and this owing to the fact that both are insufficiently differentiated from psychological motivation.

This schema is a very general one, but this supposition must serve as a working hypothesis.



II. Questions not expressed under the form "why"

For every "why" there may be a corresponding question of another form having the same meaning. The reverse does not hold.

a) **QUESTIONS OF CAUSAL EXPLANATION** - These are questions of a truly causal nature. They relate to phenomena for which a mechanistic explanation has already been given, but which the child cannot accept as he is searching for the anthropomorphic features he believes the objects endeavored with.

b) **QUESTIONS OF REALITY AND HISTORY** - These are questions relating to facts and events, without relating to their cause or their causal structure. They are purely static or simply temporal questions.

c) **QUESTIONS ABOUT HUMAN ACTIONS AND ABOUT RULES** - These are questions about human actions, sometimes it is the search for the meaning of an unknown word, others search of an etymological analysis.

The outstanding characteristic of children's assumptions is that they contain a definite conclusion. Everything in the world, in nature seems to him constructed, intentional and coherent. The structure of childish assumptions therefore is analogous to that of precausality - confusion of the causal or physical order (the real), with the logical or human order (motivation). i.e. Del: "Jean does not exist because I don't like him". The result of this is that the idea of the possible is far less precise in the child than in the adult.

As the relative frequency of "whys" diminishes, there is an increase of questions of reality and history in comparison to those of explanation, and finally the sense of the "whys" becomes increasingly causal. The reason for this is because between the ages of 3 to 7 "why" is a question which is used for every purpose, because of the confusion of the psychological and the physical order of things. When these two orders come to be differentiated, and when the idea of chance, or of the "given" first makes its appearance, a large number of questions break away from the "why" form, taking on the form of "how", or of simple questions without any interrogative words in them, and they will concern themselves with the consequences, the inner mechanism of phenomena. Thus the decrease of "whys" seems to be an index of a weakening precausality, and the increase of "whys" of causal explanation in comparison to the other "whys" is probably due to the same reason.

Up to the age of three, real for the child is what is desired. After the age of three, the imagined is something distinct from the real, and it is about then that words such as "perhaps", and verbs such as "to think"

H. Sinclair, associate of Piaget, found that linguistically higher order-structural devices were used by children who had reached a higher operative stage of thinking. Children who had not reached the stage of elementary concrete operations, showed an enadequate use of lexical items, and their descriptions of objects was linguistically unstructured, by contrast to the children having already operationally mastered conservation of quantity, whose utterance used structurally complex devices of coordinated structure.

Piaget believes that the basic knowledge of language, i.e., linguistic competence is present in any typical four year old. But linguistic competence refers to a person's ability to comprehend the basic phonological and grammatical structure of a language. It does not refer to its adequate use.

In children given vocabulary tests, one will notice the following stages:

1. They will not speak when they are asked a vocabulary question, but they will simply point or make a gesture.
2. They will respond with a phrase indicating a function (this is in the ego-centered stage of thinking, at which he sees himself in all things, in which case he at least recognizes himself).
3. During this third, operational stage, they will give a logical answer, but in a global fashion, where the decisive logical difference is left out. Thus a five year old does not give a logically adequate verbal definition, but not because of lack of linguistic, but operative knowledge.

Children's knowledge, or lack of knowledge, is expressed in the verbal reply, and this verbal ability is in no way a decisive contributory factor in developing the first operations. In fact operations, insofar as they result from the interiorization of actions and from their coordinations, remain for a long while relatively independent from language. "Once language is acquired" says Piaget, "it is in no way sufficient to assure the transmission of operational structures ready-made. The child does not receive the structures ready-made from the outside through the medium of linguistic constructs. A certain number of facts can be brought to bear this point. 1) In spite of the classification found in language, only at the level of concrete operations does the child master the use of inclusive definitions, and of classifications in general. 2) Verbal expressions that refer to inclusion of a subclass within a class, such as "some of my flowers are yellow" are not mastered until a level when inclusion is established thanks to the interplay of additive and multiplicative operations of classes. 3) The exercise of saying numbers, does not suffice to ensure conservation of numerical wholes, nor conservation of equivalences by bi-univocal correspondence, etc."

In short, a verbal transmission that gives adequate information relative to operational structures is only assimilated at levels where the structures have already been elaborated on the plane of actions or of operations as interiorized actions. If language favors this interiorization, it certainly does not create, nor transmit ready-made structures, in an exclusively linguistic way.

CONCLUSION

It becomes evident from the above that, according to Piaget, logical thinking does not depend on linguistic ability but that linguistic behavior is related to intellectual development. This thesis is open to argument, but it is important to consider it and after a comprehensive understanding to raise questions for ourselves on a number of related issues.

REFERENCES

1. Almy, Miellie; Ghitlenden, Edward and Miller, Paula. *Young Children's Thinking: Studies of some Aspects of Piaget's Theory*. NYC Teachers College Press, 1966.
2. Ausbel, David P. "Neobehaviorism and Piaget's Views on Thought and Symbolic Functioning". *Child Development*, 1965, 36(4), 1023-1032.
3. Benzonsky, Michael D. "Interdependence of Inhelder and Piaget's Model of Logical Thinking." *Developmental Psychology*, 1971, (May), Vol.4 (3) 469-976.
4. Bush, David F. "The Moral Judgement of Children at Two Piagetian Cognitive Stages: Preoperational Thought and Concrete Operational Thought." *Dissertation Abstracts International*, 1973 (Mar.), Vol. 33 (9-B) 4483.
5. De Avilla, Edward A., Randal, David L., and Struthers, Joseph A. "A Group Measure of the Piagetian Concepts of Conservation and Egocentricity", *Canadian Journal of Behavioral Science*, 1969, 1(4), 263-272.
6. Furth, H.G. "On Language and Knowing in Piaget's Developmental Theory". *Human Development*, 1970, Vol. 13(4), 241-257.
7. Gouin Decarie, Therese. *Intelligence and Affectivity in Early Childhood: An Experimental Study of Piaget's Object Concept and Object Relations*. E.P. Brandt and L.W. Brandt NYC: International Universities Press, 1966.
8. Hall, Elizabeth. "A Conversation with Jean Piaget and Barber Inhelder." *Psychology Today*, 1970 (May) Vol 3(12) 25-32, 54-56.
9. Karl, Herbert G. "The Development of Language in Children: An Analysis of Selected Works of Jean Piaget with Implications for the English Program", K-9 *Dissertation Abstracts International*, 1973, (Apr.), Vol.33 (10-A), 5617.
10. Liethke, Werner W. and Nelson, L. Doyal. "Concept Formation and Bilingualism" *Alberta Journal of Educational Research*, 1968, 14(4), 225-232.
11. Mc Ghee, Paul E. "Cognitive Development and the Children's Comprehension of Humor" *Dissertation Abstracts International*, 1969, 30(1-B).
12. Mermelstein, Egon. "A Note on Piaget's Clinical Method of Questioning", *Alberta Journal of Educational Research*, 1967, 13(3), 181-184.
13. Neale, John M. "Egocentricism in Institutionalized and Noninstitutionalized Children". *Child Development*, 1966, 37(1), 97-101.
14. Nepomnyashchaya, N.I. "On the Relationship of Logic and Dialectics in Jean Piaget's System" *Voprosy Filosofii*, 1965, No.4, 135-144.

15. Nelville, Mary H. "Factors Affecting the Listening Comprehension" *Alberta Journal of Educational Research*, 1967, 13(3), 201-209.
16. Nelville, Mary H. "Understanding Between Children of the Same Age" *Alberta Journal of Educational Research*, 1967, 13(3), 221-229.
17. Piaget, Jean. *The Child's Conception of Number*. NYC: W.W. Norton 4 Co., 1965.
18. Piaget, Jean. *The Moral Judgement of the Child*. NYC: The Free Press, 1965.
19. Piaget, Jean. *Six Psychological Studies*. NYC: Random House, 1968.
20. Piaget, Jean. *Science of Education and the Psychology of the Child*. N.Y.C: Orion, 1970.
22. Piaget, Jean. *The Language and Thought of the Child*. N.Y.C: Meridian Books, 1971.
23. Piaget, Jean. *The Child's Conception of the World*. N.J.: Littlefield Adams and Co., 1972.
24. Piaget, Jean. "The Theory of Stages in Cognitive Development". *Measurement and Piaget*, (PA, Vol.49: Issue 2), 1972.
25. Pinard, Adrien and Sharp, Evelyn. I.Q and Point of View. *Psychology Today*, 1972 (Jun) Vol.6(1), 65-90.
26. Sinclair - de Zwart, H. *Language Acquisition and Development of the Mind: Linguistic Sub-systems and Concrete Operations*. Paris, France: Dunob, 1967.
27. Zern, David. "Some Trends in the Development of Concrete Reasoning in Children: A Note to Jan Smedslund's Concrete Reasoning: A Study of Intellectual Development" *Journal of Genetic Psychology*, 1969, 115(1).

ΠΕΡΙΛΗΨΗ

Βασιλική Δενδρινού, Ἡ σχέση τῆς πνευματικῆς καὶ γλωσσικῆς ἀνάπτυξης κατὰ τὸν Πιαζέ

Ἡ ἐργασία αὐτὴ εἶναι ἀποτέλεσμα μελέτης τοῦ συνόλου τοῦ ἔργου τοῦ Πιαζέ μὲ βασικὸ στόχο τὴ διερεύνηση τῆς θέσης του ὅσον ἀφορᾷ στὴ σχέση πνευματικῆς καὶ γλωσσικῆς ἀνάπτυξης.

Μετὰ ἀπὸ μελέτη τῆς γλωσσικῆς συμπεριφορᾶς καὶ τῆς λογικῆς σκέψης τοῦ παιδιοῦ, ὁ Πιαζέ καταλήγει στὴν ἄποψη πὼς ἐνῶ ἡ πρόοδος τῆς λογικῆς σκέψης δὲν συνδέεται ἄμεσα μὲ τὴ γλωσσικὴ ικανότητα, ἡ ἐκμάθηση τῆς γλώσσας ἐξαρτᾶται ἀπὸ τὴν πνευματικὴ ἀνάπτυξη. Ἡ γλωσσικὴ συμπεριφορὰ ἀνήκει στὸν ἴδιο χῶρο μὲ ἄλλα εἶδη συμβολικῆς συμπεριφορᾶς ποὺ εἶναι πλήρως ἐξαρτημένα ἀπὸ τὴν γνωστικὴ δραστηριότητα καὶ τὴ συμβολικὴ λειτουργία γενικώτερα. Ἐπομένως τὸ παιδί μαθαίνει νὰ μιλάει μὲ τὸν ἴδιο τρόπο ποὺ μαθαίνει νὰ προσαρμόζεται στὸ περιβάλλον του καὶ νὰ λειτουργεῖ ἀνάλογα μὲ τὶς συνήθειες καὶ τοὺς κανόνες ποὺ αὐτὸ τοῦ ὑπαγορεύει. Ὄταν τὸ παιδί ἔχει φτάσει νὰ ἀποκτήσει τὴν ικανότητα νὰ συλλαμβάνει συμβολικὲς ἔννοιες εἶναι ἔτοιμο καὶ νὰ χρησιμοποιοῦ τὸ λόγο σὰ μέσο ἔκφρασης καὶ ἐπικοινωνίας.