Vygotsky with Lacan: considerations about the concept formation in adolescence

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Abstract: This article contains an analysis of Lacan's relationship between the maturation of object *a* at puberty and the formation of concepts, with emphasis give to the interlocution between this psychoanalyst and Vygotsky. From the Vygotskyan perspective, the entrance into the conceptual thought only takes place from the pubertal maturation by virtue of the new psychological functions acquired during that phase. This conception corroborates the Lacanian proposition that the transformations arising from the encounter with the object in puberty, the logical time in which the subject has to be with the lack in an unprecedented way, provides the assimilation of the concepts. Considering that this is a debate that is not evident in the context in which it appears in Lacan's work, it is proposed that an investigation be conducted of the function of this dialogue in the Lacanian elaboration on puberty, which constitutes an important contribution to the psychoanalytic approach of adolescence.

Keywords: adolescence, puberty, concept, Lacan, Vygotsky.

This article presents a theoretical development extracted from a doctoral research in Psychology¹ that had understanding the relationship of the adolescent subject with knowledge as its main objective. With the methodology of research in Psychoanalysis (Pinto, 2001) and Lacanian theoretical contribution, we focus on the connection, as pointed out by Lacan (1962-1963/2005), between the maturation of object *a* at puberty and the formation of concepts. We observe that this formulation is corroborated by the perspective of Vygotsky (1930-1931/2012), for whom the entry into conceptual thought is only achieved from pubertal maturation due to the new psychological functions acquired at that stage. Considering this, we observe a conceptual debate between these authors regarding this issue that we subsequently aim to examine.

We formulate the hypothesis that the connection between puberty and conceptual thought is concerned with an original proposition of Lacan, consisting of an important contribution to the psychoanalytic approach to adolescence. The relationship between pubertal maturation – concerning the incidence of the organic real in the body – and the assimilation of concepts, in a logical time marked by the castration anxiety, which concerns the association between a capacity of thought and the emergence of an emptiness. It is a novelty that presents itself in the field of knowledge at a time when the not-knowing is imposed on the subject in a radical way. Understanding this Lacanian formulation about puberty requires an examination of the theoretical framework on which it is built.

The function of cause in thought

In *The Seminar of Jacques Lacan, Book X: Anxiety*, Lacan (1962-1963/2005) points out that the relationship with the lack is inherent in the constitution of any logic, since the radical lack is implicated in the constitution of the subject. According to the author, "from the moment it is known, in which something becomes knowledge, something is lost, and the safest way to approach this lost something is to conceive it as a part of the body" (p. 149). Object *a* is a residue of the signifying function due to the constitution of the subject as barred. As the presentification of the lack, this object relates to the partial objects of the body and acts as the cause of desire, a reference of the real that supports the signifying chain.

According to Lacan (1962-1963/2005), the cause concerning the radical function of object *a* relates to the mental dimension of cause, which is equivalent to the recognition that something works in a particular way. As an example, he shows how this dimension is evident in the symptom, which is only constituted when the subject perceives himself. This is how it works as a symptom, only leaving the state of non-formulated enigma in case "the subject apprehends something that suggests there is a cause for that" (p. 306). Object *a*, therefore, in its function of cause of desire, does not only concern an archaic step of subjective constitution, as it remains at play during subjectivity as a latent motor, as a *causation*.

Lacan (1962-1963/2005) accordingly defines the function of the cause as "the shadow, or rather, the metaphor of the primordial cause that is the $a \dots$ which we define as the rest of the constitution of the subject in place of the Other, as he has to constitute himself as a

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barred subject" (p. 309). Despite being the effect of this cause, the desire is an effect that effectuates nothing, with it being constituted as a lack of effect. There is, therefore, a fundamental emptiness in the relationship of causality, a gap in subjectivity (Viola, 2016, p. 208). This is how we can understand object *a* as a mediating element, a *border* between the real and the language.

Thus, Lacan (1962-1963/2005) connects "our being of thought" to the "carnal part that is ripped from ourselves" (p. 237), and situates the function of the cause in the cut, in the "part of our flesh that remains necessarily imprisoned in the formal machine" (p. 237). Having this in mind, the association between the cause, radically related to the body, and the thought – conception is perceived, which permeates Lacanian theorization in the context in which the issue of puberty is evidenced. We can therefore see how this illation supports a contribution from the Lacan to the pedagogical debate, to the issue of concept, and to the psychoanalytical theory of puberty.

The maturation of object a in puberty

In his brief foray into the pedagogical debate, Lacan (1962-1963/2005) questions the transmission of the psychoanalytic concepts and the limitations of what is understood from them. "During the analysis, during the analytical technique, . . . we should encounter, in the development of concepts, the same obstacle recognized as that which constitutes the limits of the analytical experience – namely, the castration anxiety" (p. 281). Without specifying the educational line on which he is based, he emphasizes the relationship between school education and the maturation of the child's thinking and identifies a limit from which teaching can be considered avoidable. To exemplify this pedagogical concept, he argues that when a certain stage of mathematical understanding is passed, once this is accomplished, it is done. "Concepts that would have seemed extremely complicated, in a previous step of mathematics, are immediately accessible to very young spirits" (p. 282). But this process corresponds to the scientific level, and, at school age, things do not work in this way. According Lacan, the interest of pedagogy at this age should be in detecting the live point, which can promote the child's mental abilities through problems that slightly exceed them. This thesis comes from the thought of an author who is not named in this context, as we shall see later on:

In helping a child deal with these problems, only in helping, I mean, something is done that not only has an effect of precocious maturation, an effect of haste in mental maturation, but that, in certain so-called sensitive periods, . . . enables obtaining real effects of opening or triggering. Some activities of understanding have, in certain fields, absolutely exceptional effects of fruitfulness. (Lacan, 1962-1963/2005, p. 282)

In an allusion to "authors whose words are even more interesting to preserve" (p. 282), since they are unaware of their contributions to Psychoanalysis, Lacan evokes the question of puberty, which is surely one of the "so-called sensitive periods" mentioned (p. 282):

It is deserving, given the fact that a given pedagogist has formulated that there is only real access to the concepts from the age of puberty, that we include our view, that we have meddled in it. There are thousands of pieces of sensitive evidence that the moment from when the functioning of the concept is really initiated, and that the authors call – in this case, in a purely fortuitous homonymity with the word complex, which we employ – *complexual moment-limit*, could be situated in a totally different manner, due to a connection to be established between the maturation of object *a*, as I define it, and the age of puberty. (Lacan, 1962-1963/2005, p. 282)

In our hypothesis, which enables the understanding of concepts, is precisely the emergence of an emptiness related to the subject's *live point* (Viola, 2016, p. 203) And, as suggested by Lacan, this understanding is related to the castration anxiety, an affection that affects the subject frequently at this stage as a sign of the maturation of object *a*.

Immediately after this proposition, Lacan (1962-1963/2005) focuses on addressing the castration anxiety, which is prominently actualized during puberty, as a resumption of the phallic logic by a subject who, differently from the child at the time that precedes the decline of the Oedipus complex, already possesses knowledge about sexual difference - namely a not-knowing that causes anxiety and destabilizes. During adolescence, the phallic function and the first experience of sexual encounter including the experience of orgasm – constitute a drama for the subject, since all confidence is directed towards genital consummation. "It is by not consummating the encounter of desires, except in their evanescence, that the phallus becomes the common place of anxiety" (p. 290). The conjunction between the phallic function and the genital function results in that which Lacan calls "evanescence" of the sexual act. In other words, when the subject finally has the organic resources for the sexual act, an insuperable emptiness is imposed because of the extreme asymmetry between partners (Lacan, 1972-1973/1985). The maturation of the body does not make sexual intercourse possible. At this moment, its impossibility is made fully explicit. In our view, this paradoxical conjunction of the maturation in the body that ratifies a lack corresponds to that which Lacan designates as the maturation of object a (Viola, 2016, p. 275). Thus, the reality of sexuality becomes an unavoidable issue for the subject, who comes to deal with the lack in a new way. From this perspective, the transition to conceptual thinking is a logical leap that requires some familiarity with the dimension of lack from the subject.

We need to ask what is the concept according to Lacan (1962-1963/2005) in this theoretical context. According to him, the subject "believes in achieving the concept, that is, believes in being capable of apprehending the real through a signifier that commands this real according to its intimate causation" (p. 323). Thus, we can comprehend the Lacanian conception of *concept* as that which binds a real to a signifier by means of the cause, of a functional relationship that is sustained in a hiatus - hence the complexity of access to the concept, since this logical illation is not evident until a certain degree of "familiarity" with this emptiness is reached. While considering the true access to the concepts at puberty, according to the Lacanian formulation, we assume that before this stage the child only believes in reaching the concept, and not necessarily accessing it. This issue leads us to the misleading facet of understanding and thought, as discussed by Lacan in this context. The subject can deal with it based on a point of inflection in his relationship with the lack, a logical leap capable of providing an entrance into conceptual thinking.

The maturation of object *a* makes the hiatus inherent in sexuality patent to the subject. The promotion of the phallic signifier in this logical time is accompanied by intense anxiety due to the demands of the superego. Consequently, initially, expectations in regards to the genital level are marked by dissatisfaction and object *a* tends to operate in its aspect of surplus jouissance. As it is that which actualizes the castration logic, the phallic signifier is that which will command the conceptual relationship, thereby enabling the very conceptualization. Let us address another context of Lacan's theorization to advance our understanding of these issues.

The formation of concepts in adolescence: Vygotsky with Lacan

During the seminar dedicated to the *Crucial problems for psychoanalysis* (1964-1965), Lacan finally names the interlocutor of the field of Education and Psychology, from whom he extracts the thesis for the promotion of children's mental capabilities through problems that exceed their development², and with whom he agrees in regards to the issue of access to the concepts during puberty: Vygotsky, the founder of Cultural-historical Psychology.

It is a resumption of the debate initiated during the seminar on *Anxiety* and that in this theoretical context is particularly important to this author, whose *démarche* intends to depurate any psychology and sense from the subjective causation. During the seminar on *Crucial problems*, we observe a central question concerning the *being of the subject*, which Lacan (1966/2003) presents thusly: "That the being of the subject is split, Freud only

repeated in every way, after finding that the unconscious is only translated into knots of language, which has, therefore, a being of subject" (p. 206). This is the fundamental problem that will guide his elaboration over the course in question and permeate the subject's relationship with knowledge.

While reflecting on the relationship of the signifier with the subject, Lacan (1964-1965/2006) evokes the loss that is necessarily engendered when language has to deal with its own essence (p. 19). Based on this loss of "radical character and originating function" (p. 19), the author conceives the relationships of the signifier with the subject. This relationship implies a signification and involves a referent, which relates to the loss inherent in any attempt that language makes to deal with itself. This referent, an irreducible rest, corresponds to the real at play in the relation of the signifier with the subject. Lacan says:

A signifier can serve to introduce, within the relationship with the referent, something that has a name, which is called concept. And this is a relationship of connotation. It is, therefore, through the relationship of the signifier with the referent that we see the signified emerge. (Lacan, 1964-1965/2006, p. 20).

Within this passage we can observe the connection between the concept and the object a – obstacle to the saturation of the language, to the full and exact subjection to language, which is not realized because there is always a rest. Lacan then relates this rest of the connotation operation – never unequivocal, concrete, exact or literal – to the referent (Viola, 2016, p. 220).

To corroborate his elaboration, Lacan resorts to a theorist from the field of learning, Vygotsky (1934/1991; 1930-1935/2007), who emphasizes the preponderant role of social interaction and culture in the development of language and processes of thought. This conception is in line with the Lacanian certainty that the unconscious is inseparable from the social bond. In the seminar on Crucial problems, there is a brief commentary on Vygotsky's ideas that clarifies the mention of puberty expressed in the seminar on Anxiety – a context in which Lacan relates puberty to the possibility of real access to concepts in a veiled allusion to the Vygotskyan conception, according to which the management of concept is only achieved in puberty (Vygotsky 1930-1931/2012; 1934/1991, according to Lacan, 1964-1965/2006). Referring to this theory to refute a certain thesis of Piaget (1964-1965/1999) on the relationship between language and thought in the child, Lacan says:

> What is important, certainly, is absolutely not seeing what transpires in the child's spirit, surely something that is realized in time, once they become the adult that we believe to be, is that if, in a certain state, in certain steps are to highlight

We find this proposal of Vygotsky (1930-1935/2007) in The social formation of mind.

in its adequacy to the concept, and then we will be surprised that someone such as Vygotsky . . . without taking more advantage of that, precisely in having posed his questioning in the terms that I will say, namely, entirely different from those of Piaget, it is perceived that even a rigorous management of the concept . . . can be anyway fallacious, and that the real management of the concept is not reached, he says, uniquely – and unfortunately without taking from that the consequences – if not at puberty. (Lacan, 1964-1965/2006, p. 34).

In our hypothesis, Lacan extracts important consequences from making this relationship between the concept and pubertal maturation, albeit in a biased and subtle manner (Viola, 2016, p. 222). This is observed in the course of this seminar, which culminates in the proposition of a sort of topological hinge constituted by the terms *subject – knowledge – sex*. To understand such a connection, it is necessary to bring to light that which Lacan in fact reads in Vygotsky, who handles more broadly the concepts in adolescence in the article "The development of thinking and concept formation in adolescence," first published as a chapter in the book Pedology of the adolescent (1930-1931/2012)³. In addition, in the famous work Thought and language (1934/1991), there is a part of this work that should be the likely source of the reading by Lacan. Let us conduct an examination of Vygotsky's original article.

Vygotsky (1930-1931/2012) proposes the construction of "a correct conception of the crisis and intellectual maturation that constitute the content of the development of thought in adolescence." (p. 47) ⁴. In his conception, there is a basic error in the theories that argue there is nothing essentially new in adolescent thought compared with child thought. This thinker debates with a series of authors who also address the problem of concept formation and thought in adolescence, agreeing with some introductory points of their formulations, but rejecting their conclusions. These authors argue that the fundamental changes that arise in the critical period of adolescence in the whole organism and personality – the revelation of new and profound layers of personality, the maturation of the higher forms of organic and cultural life – do not affect an adolescent's thought. According to Vygotsky, this point of view assesses the intellectual processes at this age as a simple quantitative accumulation of the peculiarities that already exist in the thought of a child at the age of three, and thus disregards and almost negates the role of intellectual changes in the general process of crisis and maturation during adolescence. According to him, the fact

that the period of sexual maturation – which for the first time occupies the forefront of thought – is a preeminent stage in intellectual development not only goes unnoticed in these theorizations but seems even mysterious and unexplainable.

In this argument, Vygotsky (1930-1931/2012) demonstrates the contradiction of the theories that deny the appearance of something essentially new in the sexual maturation period, as they all recognize, at some point, the true revolution underwent by the material with which the thought operates and the objects to which it is addressed, but, notwithstanding, do not accept the emergence of a new function in thought. According to the authors mentioned by Vygotsky, these changes occur from the outside to the inside, so that the forms of thought remain invariable. This is a conception of these transformations only in content, but not in the form of thought. The Vygotskyan challenge to this perspective holds that the higher psychological functions at the age of transition are not a simple continuation of the elementary functions of childhood, nor are they in their mechanical conjunction, but rather a qualitatively new psychological formation that is governed by special and distinct laws. New mechanisms, new functions, new operations, new modes of activities are presented, which were unknown during previous stages:

In fact, all the really thorough research teaches us to recognize the unity and indissolubility of the form and content, and of the structure and function, that teaches us that each new step in developing the content of thought are inseparably united, and also to the acquisition of new mechanisms of conduct, with the transition to a higher stage of intellectual operations. (Vygotsky, 1930-1931/2012, p. 54)⁵

Thus, the character of novelty that the function of thought acquires with puberty is observed. Vygotsky posits a *dialectic unity* between form and content in the evolution of thought, which contradicts the theories that do not recognize qualitative changes in adolescent thought. From this perspective, the assertion, that in adolescent thought the abstract and the concrete are separated, is also challenged. Otherwise, the movement of thought during the age of sexual maturation is not characterized by the fact that the intellect breaks its connections with the concrete base from which it originates, but by the appearance of a completely new form of relationship between the abstract and concrete moments of thought, by a new form of its fusion or synthesis.

While considering the deep epistemological distinctions between Cultural-historical Psychology and

³ Our translation of the edition used, which is Spanish, of the following titles: "El desarrollo del pensamiento del adolescente y la formación de conceptos", in Paidología del adolescente. (1930-1931/2012).

⁴ Our translation from Spanish: "una concepción correcta de la crisis y la maduración intelectual, que constituyen el contenido del desarrollo del pensamiento en el adolescente." (p. 47).

⁵ Our translation from Spanish: "En efecto, toda investigación realmente profunda nos enseña a reconocer la unidad e indisolubilidad de la forma y el contenido, de la estrutura y la función, nos enseña que cada paso nuevo en el desarrollo del contenido del pensamiento está inseparablemente unido también con la adquisición de nuevos mecanismos de conducta, con el paso a una etapa superior de operaciones intelectuales." (p. 54).

Psychoanalysis, we highlight the approach between this formulation, by Vygotsky, of a dialectic unity between the interior and exterior of adolescent thought and the Lacanian concept of border, namely the subject's topological structure that implies a continuity between the interior and exterior. This border is illustrated by Lacan (1962-1963/2005, p. 110) through the Moebius band – with its single-sided surface that, when turned, is identical to itself. This psychoanalyst employs this figure of topology precisely to indicate the cut that represents a residue, the object a. In the theoretical context in which Vygotsky is explicitly evoked, in the seminar Crucial problems for psychoanalysis, this border structure and its cut are explored using another topological figure, the Klein bottle. In our view, there is a topological proximity between that which Vygotsky presents as inherent in the novelty brought by puberty to thought and the subject's residual point, which Lacan formalizes with the notion of object a, which is preponderant during pubertal maturation according to Lacanian understanding (Viola, 2016, p. 224).

Lacan's observations regarding the concept and the thought reverberate the central point of Vygotsky's approach to adolescence in this context:

The fact, established by a series of investigations, that the adolescent at the transition age assimilates the concept formation process for the first time, the passage to a new and superior form of intellectual activity – to thinking in concepts –, is the key to the whole problem of the development of thought. (Vygotsky, 1930-1931/2012, p. 58)⁶

According to Vygotsky, this is the main phenomenon of the transition age, the core that unites all changes produced in adolescent thought. Concept formation is a complex process, distinct from simple maturation of elementary intellectual functions. The changes experienced by adolescent thought in the process of learning concepts are largely changes of an internal, structural, and intimate nature that usually are not externalized or made visible to the observer. These changes in thought are connected to the unity between form and content, which constitute one integral process.

The qualitative character of these transformations should be noted, which promote a new *modus operandi* in intellect, a new function, different from the previous ones for both its composition and structure and for the mode of its activity. Vygotsky emphasizes the qualitative passage from that which composes the children's thought – the "syncretic images" and the "complexes" – namely that

which is introduced in adolescent thought, the concepts, reiterating that this is not a quantitative increase of associative connections that constitute the elementary functions, but rather the passage to a qualitatively distinct function.

In order to better understand the terms used by Vygotsky, a brief digression is necessary. Differently from that which Lacan (1962-1963/2005) assumes when considering the two terms as synonyms, "complex", according to Cultural-historical Psychology, is actually distinct from "concept". In the view of Vygotsky (1934/1991), thinking through complexes is an intermediate stage in the development of the thought of a child. Such a stage succeeds the syncretism of early childhood characterized by vague and subjective connections based on immediate perception – and precedes logical thinking, which is based on concepts. Differently from conceptual thinking, thinking in complexes is characterized by concrete and factual connections, based on direct, immediate experience, rather than logical and abstract experience. Thus, it is assumed that the "complexual limit-moment" indicates the transition to the "conceptual limit-moment," this one actually correlates to the time of pubertal awakening to which Lacan refers and is marked by the introduction of mediation as an essential part of the act of thinking.

Resuming the issue addressed here, Vygotsky (1930-1931/2012) points out, in regards to the consequences of the transition to thinking in concepts in adolescence, the deep and essential change in the content of thought, which is renewed and restructured in its entirety. "The relationship between the content and form of thought is not the same as that between the water and the vase. Content and form are inextricably linked, they condition each other" (p. 63)⁷. The contents of thought are not only the external data that constitute its object at every moment, but rather everything that is internalized in the development process, namely that which becomes an integral, organic part of the personality and of the conduct systems. All elements that were, at first, external – such as beliefs, interests, conception of the world, ethical norms, rules of conduct, the tendencies, ideals, schemes of thought – are internalized.

During adolescence, the transition to conceptual thought opens the possibility of social and political consciousness, existential meditation, and deeper interest in Music and more abstract arts for the subject. Furthermore, at this age, young people generally begin to be attracted by Physics, Philosophy and Logic. Vygotsky emphasizes that these transformations and acquisitions cannot be taken universally, as fundamentally they depend on historical, social and cultural circumstances. Thus, his formulations about the formation of concepts and their

⁶ Our translation from Spanish: "El hecho, establecido por una serie de investigaciones, de que el adolescente en la edad de transición asimila por primera vez el proceso de formación de conceptos, su paso a una forma nueva y superior de actividad intelectual – al pensamiento en conceptos –, es la clave de todo el problema del desarrollo del pensamiento." (p. 58).

⁷ Our translation from Spanish: "La relación entre el contenido y la forma del pensamiento no es la misma que la del agua en relación con el vaso. El contenido y la forma se hallan indisolublemente vinculados, se condicionan recíprocamente." (p. 63).

emancipatory and revolutionary consequences for the adolescent's thought should be read as general formulas that may or may not apply to each peculiarity, i.e., they are subordinated to a "case by case" basis. If the formation of concepts is related to the operation of adolescence, it is assumed that its effects on the subject's thought depend on the course of this operation, which is always singular.

The formation of concepts at the age of transition has a decisive role as it enables adolescents to enter their internal reality, the world of their own experiences. This function is founded on a point of continuity between the interior and exterior, which we associate, by hypothesis, to what Lacan (1962-1963/2005) calls the maturation of object a, the presentification of the cut, of the border and of the emptiness for the subject.

Based on the formulations of Lacan (1962-1963/2005; 1964-1965/2006), we believe that the so-called "internal processes" are subject to a logic that requires mediation of a referent, of a residue of language that is precisely characterized but with its dimension of border between the real, the symbolic and the imaginary, thus establishing the continuity, in the subject, between interior and exterior, between form and content.

The apprehension of the internal world occurs, for the adolescent subject, simultaneously to an unprecedented shift in the external aspect. Accordingly, Vygotsky (1930-1931/2012) puts great value on the mutations in the social sphere for all the progress of thought, which reaches, with the formation of concepts, its socialization. Language has a dual function in this process, whether in social use, as a means of communication, or in individual use, as a way of thought. Consequently, this Vygotskyan concept signals the indivisibility between language and understanding, which is manifested in the fact that the language function is both internal and external, or better, it is a means of communication and of thought at the same time.

In order to clarify what he calls the "true nature of the concept," Vygotsky says that the true concept is the image of an objective thing in its complexity. It is possible to assimilate a concept by knowing the object, in all its connections and relationships, by verbally synthesizing this diversity in a total image through multiple definitions. The concept includes not only the general, but also the particular and singular. Distinguished from direct knowledge of the object, the concept is the result of a rational development of the experience, it is the mediated knowledge of the object – and here, once again, we point out the agreement with the Lacanian idea of mediation as a referent that is external to language.

This concept is a system of judgments that is manifested in logical thought. And this, on the other hand, is only constituted by the functioning of the concepts — which refers Vygotsky to the aphorism, "the function makes the organ." In its understanding, logical thought is the concept in action. Thus, the most fundamental change in the forms of thought in adolescence is the command of logical thought, which only becomes a real

fact at this age. In order to corroborate this thesis, the author resorts to experimental studies that illustrate the qualitative difference between thinking in complexes, in childhood, and thinking in concepts, in adolescence, and studies that demonstrate that until the age of sexual maturation there is no command of logical thought. Moreover, such experiments show that small children do not use true concepts; instead they mostly use equivalents of concepts in the form of integral and non-differentiated representative images. Children are able to recognize the identity of a same object based on their previous perceptions of another one, but they do not subordinate it to a general concept.

While considering this comparison between child and adolescent thought, Vygotsky points out the appearance of the use of metaphors and figurative words at this transition stage, which signals the acquisition of a complex combination between concrete and abstract thought. According to his observations, the figurative comparisons employed during childhood are not true metaphors, because they are absolutely not abstract. During adolescence, on the other hand, metaphors are characterized by a peculiar relationship between the abstract and the concrete, which only becomes possible thanks to a highly complex language base that is observed during this period. In fact, the progressive incorporation of the abstract into thought is the central factor in intellectual development during adolescence.

Therefore, this stage of life is usually also characterized by a major opening to success in mathematics, corresponding with a process of introspection and gradual command of abstract thought. A decisive change occurs at this time with the introduction of the concept of numbers, which is established by Vygotsky. During childhood, mathematical reasoning works by means of numerical images. During adolescence, there is a transition towards thought in numerical concepts, which ensures the opening to logical thought in mathematics.

It is important to note that this reflection culminates, in this theoretical development, within the issue of causality. Resorting to arguments from some authors, including Piaget, Vygotsky underlines the transition from pre-causal thought – when the child still confuses the cause of phenomena with the intention – to causal thought, when the logic of causality is already in place. This author does not develop this issue and concludes his work re-emphasizing the central function of concept formation at the sexual maturation age in the whole psychology of the adolescent, which is restructured on a new basis. The conclusion of this work enables us to better understand the commentary of Lacan (1964-1965) who, in praising the Vygotskyan démarche, highlights the fact that it does not draw the proper consequences from that which is pointed out.

Nonetheless, reading this study by Vygotsky enables us to infer elements that resonate in the Lacanian understanding of puberty. These elements converge in

the Vygotskyan emphasis on a dialectic unity between the interior and exterior, which would be inseparable in terms of concept formation and conceptual function. This function corresponds to the acquisition of the command of logical thought and of the attribution of causality, and is supported by a new conception of the internal and external world for the subject. It is noteworthy that Vygotsky connects these acquisitions of the intellect to the subjective plane, even attributing "all subsequent psychology" of the adolescent to this new function. The formation of concepts and the logical thought depend, on the other hand, on sexual maturation, which this author emphasizes in several parts of his work, despite not having drawn the proper consequences from these connections, as Lacan points out.

This elaboration leads us to the Lacanian perspective that conceives the subject based on a logical point of view, and not a psychological one. Thus, it is observed that the fundamental transformations brought by sexual maturation during puberty promote, according to both authors – Vygotsky and Lacan –, a subjective shift that is of alogical nature, not of sense one. It is in this sense that Lacan (1966/2003) - in the summary of the seminar Crucial problems for psychoanalysis published in Other writings – once again refutes the Piagetian hypotheses about thought and language and endorses the Vygotskyan perspective, saying that "Piaget and Vygotsky illustrate, from the first to the second, the gain obtained by repelling any psychological hypothesis of the subject's relationship with language, even when dealing with the child" (p. 206-207). In our view, the reference to the problem of the concept as a point of inflection in adolescent transition is due to the need to depurate all attribution of sense in the subjective actualization that takes place in this logical time, in which the subject is introduced to a knowledge about sexuality that is of the order of a not-knowing (Viola, 2016, p. 231).

In this search for depuration of any attribution of sense, Lacan (1964-1965/2006) comes to the proposition that the being of the subject is the suture of a lack, which he would illustrate through the topology of the Klein bottle. He demonstrates that by means of a cut on the surface of that bottle, a point of suture is exposed, a residue of the subject's structuring, namely the object *a*. It is worth remembering that the subject's causation has this object as a pivot, an emptiness that constitutes an obstacle to sense – a Lacanian thesis that rejects any psychological causation.

The peculiar structure of this topological figure – was constituted, according to Lacan, by merging two Moebius bands – showing the trick of any psychology that assumes the *cogito* as the apprehension of a content, as the enveloping, by the subject, of knowledge. It is observed that the two cavities of the bottle represent, illusorily, the macrocosmos that envelopes the subject – i.e., for their part, microcosmos, psyche (p. 54). This topological structure is distinguished, however, by being configured by means

of a hole, so the separation between its cavities is not sustained. This illustrates how the interior and exterior are in a complex relationship of continuity, sutured by a lack, the object *a*.

According to our hypothesis, this figuration is especially convenient to illustrate that which Vygotsky exposes so eloquently in his text and that certainly draws Lacan's attention: the dialectic unity between the interior and exterior that structures the concept, thus constituting logical thought (Viola, 2016, p. 232). By considering the time of comprehension, "which is not of an absolutely psychological function" (p. 85), and the subject's structure, which is designed as the Klein bottle, with its irreducible character, Lacan (1964-1965/2006) formulates:

The term comprehension is for us to apprehend in this very gesture called apprehension and, however, it remains irreducible to this substantial form of the surface, in this aspect of envelope in which it presents itself; this which the hands can apprehend and that its form of apprehension is the most adequate; that it is not enough to believe it is, there, roughly imaginary, by no means reducible to the tangible. Surely not, because therein lies the very notion of *Begriff*, of concept, which can be shifted in the most appropriate manner . . . you will see that it is there, certainly, a mode at first infinitely more subtle than that which gives the opposition of the terms extension and comprehension. (Lacan, 1964-1965/2006, p. 85)

We can conceive, with this proposition, the formulation of the movement of conceptual apprehension by the topology of the Klein bottle. As in further points of Lacanian work, the concept, *Begriff*, is associated with the gesture of apprehension by the hands, i.e., with the body.

Final considerations

During adolescence, the subject verifies the inconsistency of the Other, which is conducted in an operation of extraction, of presentification and of an emptiness that corresponds to the maturation of object *a*. In our view, this correlation is insinuated in the interrelation that Vygotsky (1930-1931/2012), recovered by Lacan (1964-1965/2006), establishes between the organic maturation of puberty and the initiation of conceptual thought. Accordingly, we observe a connection between the entrance into the domain of logic and the certainty of a lack, signaled by the castration anxiety.

During the transition from childhood to adulthood, the subject is disconnected from family authority and shifts to the place of the Other in its wider sense. The debate between Lacan and Vygotsky demonstrates that concept formation during puberty is a precious tool in this transition. As suggested by Lacan, the concept is an extension of the body; it is that

which enables the subject to go beyond a limit, which enables the expansion of a field and the invention of the new. In other words, the adolescent transition – the overcoming of a limiting obstacle and the shift to an emancipated position in the Other – is not accomplished without a leap in the plane of thought. It is, therefore,

a logical leap, propelled by a lack in the body, which will enable the subject to deal with the not-knowing that is inherent in the real that bursts incisively at this time. And the conceptual thought can be assumed as a cutting instrument capable of clearing the way in the field of the Other.

Vygotsky com Lacan: considerações sobre a formação dos conceitos na adolescência

Resumo: Este artigo apresenta um exame da relação, apontada por Lacan, entre a maturação do objeto *a* na puberdade e a formação dos conceitos, com ênfase na interlocução entre esse psicanalista e Vygotsky. Na perspectiva vygotskiana, a entrada no pensamento conceitual só se efetua a partir da maturação pubertária, em virtude das novas funções psíquicas adquiridas nessa fase. Essa concepção corrobora a proposição lacaniana de que as transformações decorrentes do encontro com o objeto na puberdade – tempo lógico em que o sujeito tem que se haver com a falta de uma maneira inédita – proporcionam a assimilação dos conceitos. Considerando que se trata de um debate de fundo que não é evidente no contexto em que aparece na obra de Lacan, propõe-se investigar a finalidade dessa interlocução na elaboração lacaniana sobre a puberdade, que constitui uma importante contribuição à abordagem psicanalítica da adolescência.

Palavras-chave: adolescência, puberdade, conceito, Lacan, Vygotsky.

Vygotsky avec Lacan: considérations sur la formation de concepts à l'adolescence

Résumé: Cet article présente un examen de la relation, indiquée par Lacan (2005), entre la maturité de l'objet *a* à la puberté et la formation de concepts, en mettant l'accent sur le dialogue entre le psychanalyste et Vygotsky (2012). Dans la perspective de Vygotsky, l'entrée dans la pensée conceptuelle ne se déroule qu'à la maturation pubertaire en raison des nouvelles fonctions psychiques acquises à ce stade. Ce concept soutient la proposition lacanienne selon laquelle les changements résultants de la rencontre avec l'objet à la puberté, le temps logique dans lequel le sujet doit faire face au manque d'une manière sans précédente, fournissent l'assimilation des concepts. En rendant compte qu'il est un débat qui ne ressort pas dans le contexte dans lequel il apparaît chez Lacan, nous proposons une enquête sur la fonction de ce dialogue dans l'élaboration de Lacan sur la puberté, ce qui est une contribution importante à l'approche psychanalytique de l'adolescence.

Mots-clés: l'adolescence, la puberté, le concept, Lacan, Vygotsky.

Vygotsky con Lacan: consideraciones de la formación de conceptos en la adolescencia

Resumen: En este trabajo se presenta un análisis de la relación, señalada por Lacan, entre la madurez del objeto en la pubertad y la formación de conceptos, con un énfasis en el diálogo entre este analista y Vygotsky. En la perspectiva de Vygotsky, la entrada en el pensamiento conceptual sólo tiene lugar a partir de la maduración puberal, debido a las nuevas funciones psíquicas adquiridas en esa etapa. Este concepto apoya la proposición lacaniana de que los cambios resultantes del encuentro con el objeto en la pubertad –momento lógico en que el sujeto se ve obligado a encararse com la falta de una manera sin precedentes—proporciona la asimilación de los conceptos. Considerando que esse es un debate no evidente en la obra de Lacan, se propone investigar la función de este diálogo en la elaboración lacaniana sobre la pubertad, que es una contribución importante para el enfoque psicoanalítico de la adolescencia.

Palabras clave: adolescencia, pubertad, concepto, Lacan, Vygotsky.

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