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REGULAR ARTICLE

Imagination as Expansion of Experience

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Abstract This paper proposes a developmental view on imagination: from this perspective, imagination can be seen as triggered by some disrupting event, which generates a disjunction from the person's unfolding experience of the "real" world, and as unfolding as a loop, which eventually comes back to the actual experience. Examining recent and classical theorization of imagination in psychology, the paper opposes a deficitary view of imagination to an expansive notion of imagination. The paper explores Piaget, Vygotsky, Harris and Pelaprat & Cole consider: 1) What does provoke a "rupture" or disjunction? 2) What are the psychological processes involved in the imaginary loop? 3) What nourishes such processes? 4) What are the consequences of such imaginary loop, or what does it enable doing? The paper proposes to adopt an expansive view of imagination, as Vygotsky proposed—a perspective that has been under-explored empirically since his seminal work. To stimulate such sociocultural psychology of imagination, two empirical examples are provided, one showing how children make sense of metaphor in an experimental setting, the other showing a young person using a novel met at school as symbolic resource.

Keywords Imagination · Gap filling · Development · Sociocultural research

Imagination has been the object of attention since antiquity, and regularly comes to the fore of philosophical or scientific reflection (see Byrne 2005; Crapanzano 2004; Furlong 2004; Murphy et al. 2010; Roth 2007). In this paper we want to synthesize some of the classical contributions to developmental psychology, and show the limits of some of the dichotomies and divisions traditionally raised by the issue. Rather than a chronologic perspective, we propose an analytic one; eventually, approaching the issue from a sociocultural perspective, we sketch an alternative model to apprehend imagination.

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Many debates associated with imagination were simply due to wider discussions in the history of occidental thinking—such as debates between the cognitive or affective nature of thinking,[1] its truth value, etc.—and we will not address them. One debate is specifically associated with imagination: is the notion of *imagination* designating the simple capacity to form images that reproduce reality, or shall it designate images which are actual new creations?[2] From a constructivist, pragmatist or a sociocultural perspective, the opposition does not really hold: in effect, if we admit the irreversibility of time, then any representation of the world is inevitably also and already a new construction (James 1890)—it always implies represent*ing* (Valsiner 2003). However, there might be a tension between images that tend to offer a stable or continuous experience of the world, or images of *what is* and others, which precisely offer novel views, perspectives or alternative experiences—images of *what could be*. Yet such tension between preserving continuity and triggering change is at the core of psychological development in general (de Moraes Ramos de Oliveira and Valsiner 1997). In this paper, however, we will limit ourselves to approaches of imagination that consider it foremost as creative, not reproductive: this will allow us to think imagination as a form of enrichment, or expansion, of one's experience and understanding of the world.

Imagination as Loop: Gap Filling or Expansion

Our starting point is the observation that, from a developmental perspective, considering that thinking or experience unfolds in time, most psychological theories of imagination can be seen as theories of processes engaged by a sort of "rupture" of the flow of thinking or relating to reality. The idea finds its inspiration in Peirce's notion of "irritation" due to the suspension of belief in things as they are (Peirce 1877), and can designate any disruption of the taken-for-granted of one's experience (Zittoun 2006a). Most theories of imagination consider that (creative) imagination—as process—differs from people's thinking about "reality"—their material environment given by their senses, the presence of actual social others, etc. Imagination always seems to open a different space, or a different modality of thinking, which eventually terminates when the person "comes back" to reality. Imagination can be seen as an excursion; we will say that imagination, as process, create "loops" out of the present, here-and-now of experiences connected to "real" objects. However, how this loop is conceived of and descripted depends on authors.

Drawing on Hume (1896) (see Collier 1999; Furlong 2004), Pelaprat and Cole (2011) have recently proposed to see imagination as "gap-filling" process:

[1] Plato (427–346 bc) considered imagination as the lowest degree of knowledge. In the 16 and 16th centuries, authors mostly mistrust its dangers: imagination is seen as "the mad in the house [la folle du logis] (…) fertile source of aberration and illusion" (Malebranche 1990).

[2] Kant saw imagination as one middle term between perception and concept, as bridging term between actions and thinking. He proposed to distinguish on the one side "reproductive imagination", the capacity to represent objects in their absence, thus linking perception and memory, and on the other, "productive or creative imagination", freely operating on the basis of reality and combining images in a new way. This distinction was then taken on later by many thinkers, in particular by Ribot (1900/2007) in the field of psychology.

"imagination is the process of resolving and connecting the fragmented, poorly coordinated experience of the world so as to bring about a stable image of the world" (Pelaprat and Cole 2011, p.399). According to such view, human experience is inherently fragmented—because of specific physiological, cultural and developmental properties—and imagination is what gives people "a feeling of oneself in relation to the world" (Pelaprat and Cole 2011, p. 399). As examples, the authors show that we are able to see things as stable only because we "fill the gap" between the permanent oscillation of our eye-movement which otherwise provide us with fragmented images of the world. Similarly, even if comic books present us with a series of apparently disconnected frames and situations, we can understand the story line because we "fill the gap" between two pictured frame. Hence, filling the gap is a necessary completion of our permanent incomplete apprehension of the world. We believe that this basic proposal is actually implicitly present in many of past theorizations of imagination. Although this proposition if heuristically powerful, we also believe that it is based on a deficitary understanding of imagination: it implies that for some reasons due to human limitation (biological, developmental, etc.), our modes of understanding or acting in the world have deficits and that imagination can offer some reparation or completion.

In contradistinction with this understanding of imagination, other authors consider imagination as a process having its own status and importance. For them, imagination allows taking distance from the here-and-now from experience; it allows to consider alternatives, to reread the past or to open possible futures; at times playful, it can be seen as rich in emotions, or as basis of invention; it is then associated with daily creativity, as well as with aesthetic experiences and scientific or political explorations (see Ricoeur 1978; Vygotsky 2004, 2011, 1971; Winnicott 2001). In that sense, imagination is necessary to human and cultural life, and it can potentially expand what is otherwise possible in a given state of socio-historical constraints. According to this second understanding, imagination becomes a form of expansion of human experience. It is this idea of imagination as expansion of experience that we want to highlight and promote in this paper.

Hence, we consider that the main theories of imagination are based on the idea that it occurs in the flow of thinking, triggered by a disruption from a previous way of relating to reality or others, that it demands a form of loop, before coming back to that initial flow. Our working hypothesis is that imagination is triggered by a temporary disjunction or misfit, or rupture, between the given of one's experience of the world (as material, embodied, socially shared), and one's ongoing flow of thinking (Fig. 1). From there on, we will ask the following questions to various models: 1) What does provoke a "rupture" calling for a loop (seen as gap-filling, resp. expansion of experience); 2) What are the psychological processes involved in that loop (seen as filling the gap, resp. as expanding experience)?; 3) What nourishes this loop; 4) What are the consequences of such loop, or what does it enable doing?

For this exploration, we will limit consider the work of developmental psychologists who have frontally addressed imagination and are usually considered as references in that matter: Jean Piaget, Lev S. Vygotsky, Paul Harris, as well as Cole and Pelaprat's recent proposition, with a few additions of classical or recent contributions when we need to suggest alternative views.

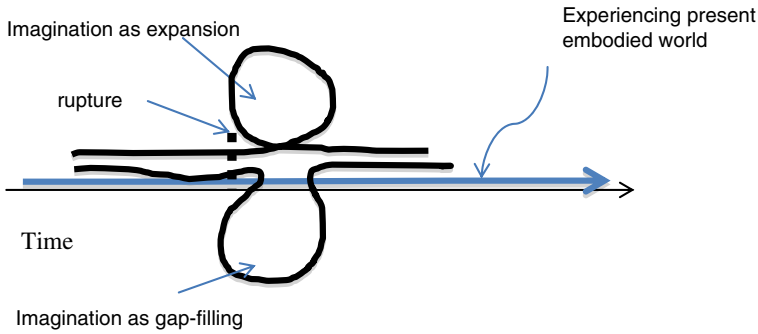

Fig. 1 Two conceptions of imagination

What is it that Provokes a Rupture?

Authors that have written about imagination often include in their reflection some considerations on what provokes the rupture that will induce imagination. Authors usually choose one of two main options: either the rupture is imposed; or it is chosen.

The rupture, and therefore the movement towards imagination, is mainly considered as imposed when authors see it as accidentally provoked by people's confrontation to daily life. One main cause of rupture can be defined as the resistance of reality to the person's apprehension. There are different versions of that argument.

A first series of arguments consider the gap as problem. For Piaget, the young child who attempts apprehending reality is actually missing the required cognitive capacities; his thinking is pre operatory, his accommodation capacities too weak (Piaget 1962a, b). As a consequence, the child experiences the frustration of not submitting realities to his desires: this is where the rupture appears. In that sense, this vision pursues the Cartesian division: in Descartes' (1996) understanding, imagination is generated in the person's body and sensations when immerged in the world; as such, it threatened one's attempt to understand the world (the *Cogito*). Here, the rupture is a problem, which eventually, in Piaget's genetic view, will reduce with age.

For other authors, the gap has its origin not only in ontogenesis, but more generally, in the phylogenetic and culturally developed traits that define human capacities. Hence, Pelaprat and Cole (2011) propose that "imagination is a process that resolves gaps generated by continuous constraint of past experience, cultural history and phylogeny on the individual so that he or she may produce an image of the world into which they can act and think in the present" (p.405). Born from human's limited capacities to apprehend reality, the rupture is seem as a "gap" which might be temporal, perceptual, informational or conceptual—as such it is a given of our human condition.

At another extreme, the rupture or disjunction—and imagination hence triggered—is not only necessary, but can be deliberately created. Some authors thus identify the deliberate technique one might engage to trigger imagination. Vygtosky, as an author deeply interested in the arts, saw fiction and poems as triggers for imagination: engaging with them demands accepting to enter in the counterfactual world of imagination (Vygotsky 1971). Even more, in some cases, the gap is actively created by certain activities of the person; hence, through play, the child is himself opening a zone of

proximal development. Similar arguments have been developed by authors interested in the psychology of fiction: people might be deliberately willing to abandon one's usual relationship to reality (Oatley 2011), and the loop is therefore triggered, created and supported by various techniques (Zittoun 2013).

Worth mentioning here in his theory of metaphor Ricoeur (1975) highlights another modality of generating and cultivated loops. Ricoeur distinguishes *conventional metaphors*, or images that have become clichés, from authentic, *alive metaphors* ("métaphores vives"). Only the latter expose the person to some radical newness, which demands the simultaneous experience of some "logical moment" and of a "sensual moment". Hence, in a live metaphor such as "the earth is blue like an orange" (Eluard 1929), one is facing an illogical thought—oranges are not blue—and yet a perceptual intuition of earth as round and grainy like an orange; the result of this confrontation is a new aesthetic experience, renewing one's views on the earth if not on oranges. Here, a disjunction takes place between what is perceived through the senses as ordinary and what calculation or understanding says through the metaphor. In other words, in metaphor, the suspension of the reference proper to ordinary language is the condition for the emergence of a new way of looking at things; the *epoché* of ordinary reference, says Ricoeur (1978), will provoke the jump in a poetic, imaginary mode—what we call the loop—that contributes to the projection of new possibilities of redescribing the world and so living in it.

Although less frequently studied by developmental psychologists, rituals as well as drugs can be seen as generating ruptures and disjunctions. The first one modify the appearances of reality, of people's roles, their languages and their actions (e.g. Obeyesekere 1990); the second transform people's perceptions and capacities to apprehend reality (e.g.Díaz 2010). Often used in conjunction, they thus deliberately create a disjunction between one's usual capacities to apprehend reality and the reality as it usually given to the person.

Hence, the rupture that triggers imagination might be passively experienced or looked for, seen as weakness or as an occasion for some process to happen. In all the cases, it seems triggered by a temporary disjunction or misfit between the given of one's experience of the world. Only for some authors, the disjunction is a necessary bad, a gap that needs to be filled, and for some others, it is a unique chance to explore alternative, or generate radically new experiences.

What are the Psychological Processes Involved in the Imaginary Loop?

Having stated the existence of a rupture and disjunction, authors then develop hypothesis about the nature of the imaginary processes taking place. Here again, there is a major tendency to oppose the processes of imagination with these of reasoning. Authors can deal in different manners with this great divide (Goody 1977).

For Piaget, a "gapist", the disjunction to be studied takes place, as suggested, between the child's desire and subjective world, and the given of reality; it is translated as gap between "subjective assimilation", and "representations adapted to

reality" (1994a; b, p. 175, our translation; 1962).[3] Piaget studied the progress of intelligence, the establishment, elaboration and complexification of operative capacities which will domesticate and suppress the gap. In line with his understanding of the nature of the gap, Piaget radically distinguishes the processes involved in imagination and in reasoning: they are of different nature. If reasoning demands the mastery of organized operations, imagination is what is lacking these. In some texts, imagination, associated with the child's tendency to assimilate the world to his desire, engages a pre-logical form of thinking, which is analogical and syncretic:

> Syncretism is the children's natural tendency to perceive through global vision rather that differentiate details; it is, without analysis, to find immediate analogies between objects and words foreign to each other, between unrelated natural phenomena, or to find reasons to random events—in short, it is the tendency to relate everything with everything (Piaget 1978, p. 9, our translation, 1978 for official translation).[4]

In later texts, Piaget will rather distinguish two main types of cognitive functions: the "figurative" and the "operative" ones:

> The first tends to the figural aspects of reality. The operative aspect characterizes the cognitive experience of deduction, which implies a modification of the object, in order to reach transformations as such. (Piaget 1999, p. 22–23, our translation, 1962 for official translation).[5]

Real intelligence consists in these transformations (operations), while figuration is typical of pre-operatory thinking: figuration enters in imitation and other playful processes. Eventually, what Piaget seems to ignore, is that playing demands not only imitation, but also transformation: if a stick is turned into a gun, it has been object of an operation as well (even if a syncretic one) (Cerchia 2011).

For Harris, the gap to be studied lies between a perceived thing or event and the explanation one might produce to account for the cause of that thing or event, or for what might have happened (alternative and counterfactual realities). The process of filling the gap is for him clearly imagination. Paul Harris does not question the divide between reason and imagination; rather, in his attempt to rehabilitate imagination, he will show that imagination is mainly a variation of cognition. Hence, in his analysis of a symbolic play between an adult and a 2 years old, Harris (2000) shows that when the adult turns an imaginary tap located on the side of a shoe-box—figuring a bathtub—

[3] « (…) l'évolution ultérieure de l'imagination symbolique consistera précisément en son amoindrissement au profit de moyens de représentation plus adaptés au réel (…) Au fond, l'enfant n'a pas d'imagination, et celle que le sens commun lui attribue se réduit à l'incohérence et surtout à l'assimilation subjective dont témoignent ses transpositions. (p.138) (…) Mais pourquoi existe-t-il une assimilation du réel au moi, au lieu que l'univers soit d'emblée assimilé à la pensée logique et expérimentale ? Tout simplement parce que cette pensée n'est pas encore construite durant la petite enfance. (p. 175) » (Piaget 1994a, b).

[4] « Le syncrétisme est la tendance spontanée des enfants à percevoir par visions globales au lieu de discerner les détails, à trouver des analogies immédiatement, sans analyse, entre des objets et des mots étrangers les uns aux autres, à lier entre eux des phénomènes naturels hétérogènes, à trouver une raison à tout événement même fortuit, bref c'est la tendance à tout lier à tout (…). » (Piaget 1978, p. 9)

[5] « On peut distinguer parmi [les fonctions cognitives] deux grandes catégories (…) de la connaissance : l'aspect figuratif et l'aspect opératif. Le premier tend à atteindre les aspects figuraux de la réalité. L'aspect opératif caractérise au contraire les formes d'expérience cognitive ou de déduction consistant à modifier l'objet de manière à atteindre les transformations comme telles. » (Piaget 1999, p. 22–23)

in which lies a teddy bear, and uses a small brick to rub its back, the child is able to infer that the bear is wet and to continue the game accordingly, for instance by "drying" it with a sheet of paper. For Harris, the child has thus accepted to enter in the pretend-world in which boxes are baths, and is at the same time capable of engaging in a "real world" causal reasoning (if a x is wet after a bath, one needs to dry it).

If Piaget was radically distinguishing imagination from reasoning, and Harris, radically reducing imagination to reasoning, Vygotsky saw it as a specific process actually combined with a whole range of other thinking processes.

Vygotsky approach to imagination is that it follows a disjunction from the normal flow of experience, but that it is also an important component of development, a way to expand ones experience. Imagination varies with the evolution of the thinking capacities. It follows the laws of development: the child first interacts with the social world, and progressively internalizes language, concepts, categories, etc. Imagination is allowed by the person's internalization of language and semiotic system, which enable to distance from here-and-now experience (Vygotsky 2011). Consequently, it allows "playing" with these internalized semiotic means. It is about decomposing some of the links and associations proposed by the social and cultural reality, and the exploration of alternative association and hierarchizations. Hence, at a simple level, the playing child can separate the name from an object, while maintaining its meaning; or an object can change meaning (Vygotsky 2002). A bit of wood can be called "horse" and be used to imitate a gallop; it can then be broken. In that sense, action follows meaning. This capacity of disconnecting words from meaning thus creates the potential to explore new combinations, beyond these that the child or the person could experiment in the daily life. Yet as the person grows older, and develops the mastery of complex semiotic systems and thus "superior" mental capacities—capacities to use signs to direct one's own thinking—then imagination can also operate on these. Imagination can thus play with complex reasoning, memories, cultural elements, stories and bodies of knowledge. Hence, imagination involves a specific process which always re-opens established (socially stabilized) forms of knowledge, into new combinations. Imagination is thus a complex thinking process, socially developed, which can be used as much to satisfy one's need for daydreaming than to find creative solutions to scientific, revolutionary or artistic problems (Vygotsky 2004; Vygotsky 2011).

What Nourishes the Looping Processes?

If imaginary loops have such power—whether destructive or constructive—they need to be supported by some forces or material, or somehow nourished.

For Piaget, imagination is nourished by children's inner-lives, their imagination and fantasies, what participates to their so-called "autistic" lives. At the time when Piaget was writing on imagination he had been exposed to psychoanalysis, and it is somehow inspired by his understanding of it that he considered emotions as the "fuel" for thinking (1952). In imagination, children can thus satisfy untamed desires and unregulated envy. Hence, imaginary play is submitted to the simple pleasure principle (Piaget 1969).[6]

[6] « Pour une pensée égocentrique, le jeu tient en somme lieu de loi suprême. C'est l'un des mérites de la psychanalyse d'avoir montré que l'autisme ne connaît pas l'adaptation au réel, parce que, pour le moi, le plaisir est le seul ressort. La pensée autistique a ainsi pour unique fonction de donner aux besoins et aux intérêts une satisfaction immédiate et sans contrôle, en déformant le réel pour l'adapter au moi » (Piaget 1978, p.193).

In contrast, the child described by Harris (2000) seems to be using all his developing knowledge and understanding about reality to nourish his imaginary scenario: what he knows about bears, baths and wetness; only this knowledge is now rearranged in a new reasoning. Other authors, observing children's play, will suggest that imagination is filled with social experiences—that is how the child plays the mother, the doctor, etc. (Mead, as presented by Gillespie 2006). Imagination seems like a general information processing machine.

To some extent, Vygotsky (2002) joins this type of reasoning. On the one hand, as a psychological function, imagination develops in interaction with other superior thinking functions, such as memory, verbal thinking or conceptual thinking:

> Imagination and creativity connected with free processing of elements of experience and with their free combinations absolutely require as a precursor the internal freedom of thinking, action, and cognition that can be attained only by the one who has already mastered the formation of concepts. (Vygotsky 2004, p. 153).

On the other hand, imagination is precisely playing with diverse "elements of experience", which might be direct experiences of activities, social interactions, and we might suppose, diverse cultural experiences—verbal, artistic, fictional, and so on. To some extent, Vygotsky's reflection on art (1971) can be seen as expanding this argument. For Vygotsky, reading a novel or following a theater piece requires to bring in one's flow of experience, and accept to have it guided by the book or the play. Reversely, one could say that art creates or supports experiences of imagination nourished by various artifacts. We will come back to this argument here below.

What are the Consequences of such Loops, or What Does it Enable Doing?

Why do we imagine for, what are the consequences of imagination, whether it is seen as gap-filling or as expansion of experience? The authors diverge between those who see it as mainly allowing people to have a better representation or mastery of reality, and those who see it as having specific benefits.

Piaget's deficit take on imagination implies that it should mainly… disappear and be replaced by more adapted thinking capacities. However, he admitted that imagination could have some positive outcomes. Minimally, interviewed by an adult, the child can thus find imaginary solutions which are "fabulations" simply because they are amusing, or propose "whateverism" because he is bored (Piaget 1999). If anything, imagination is distracting. Piaget recognized more positive functions to play and imagination: because imagination allows re-living scenes without the demands of reality, it can allow freeing oneself from internal tensions and frustrated desires (Piaget 1994a, b). Eventually, once children are 7 years old, imagination will be turned into creative thinking in reasoning.

Curiously, with their recent attempt to consider imagination as implying filling the gap between percepts and concepts, or to complete the always partial and fragmentary vision we have of the world, Pelaprat and Cole (2011) eventually suggest that imagination has as major outcome to allow us to have a better representation of reality. In other words, imagination as such is part of a deficit vision of human intelligence, whose ultimate goal is to better adjust to reality.

On the other hand, Paul Harris's understanding of the processes of imagination lead him to a much more positive view of their consequences. For him, first appearing in children's play, it will become the mental capacity that, all life long, enables considering alternatives to reality (Harris 2007, p. 39). This imaginative capacity, feeding cognitive and affective processes, brings us to anticipate, predict and react to situations to which we have not been confronted; consider various possible consequences to past or future events; and consider the possible causes of a given event. In that sense, imagination supports our causal understanding of reality, and it has a major adaptive role. Other contemporary authors, such as Singer and Singer (1992, 2005) expand such reading of the developmental role of imagination, mainly in games, and suggest that it participates not only to cognitive development, but also to social and emotional one.

Vygotsky's expansive version of imagination has even broader consequences. More fundamentally, for Vygotsky imagination allows the child, and then the adult, to go beyond the limit of his or her understanding, and thus, to create his or her zone of proximal development.

> In play a child is always above his average age, above his daily behavior; in play it is as though he were a head taller than himself… in play it is as though the child were trying to jump above the level of his normal behavior (…) The child moves forward essentially through play activity (…) Play is the source of development and creates the zone of proximal development. (Vygotsky 2002, p. 15)

As adults, play turns into imagination, which is the core process of the development of culture—and as culture shape humans, of themselves:

> Imagination is the basis of all human activity and an important component of all aspects of cultural life. Absolutely everything around us that was created by the hand of man, the entire world of human culture, as distinct from the world of nature, all this is the product of human imagination and of creation based on this imagination. (Vygotsky 1930/2004, pp. 9–10).

Epistemological Rupture: Imagination as Expansion of Experience

Imagination is a process unfolding in time: in a person's current apprehension of reality, something triggers imagination, imagination develops on its own, and eventually the person comes back to reality, usually having gained something from that excursion. Of course, in such a model, "leaving" reality and coming back to it does not imply literally a change of space; we do not consider imagination as "place". Rather, we consider imagination as one modality of apprehending the real, or a specific mode of experiencing. If most authors explored here would probably agree with such minimal description of an imaginary loop, our analysis also suggests that two deeply opposed versions underlie their models.

The first, dominant model in developmental psychology is what we called a *deficit* model of imagination (Fig. 2). For authors like Piaget or Pelaprat and Cole, the person engaged in her daily relationship to the reality meets a problem, a mismatch between

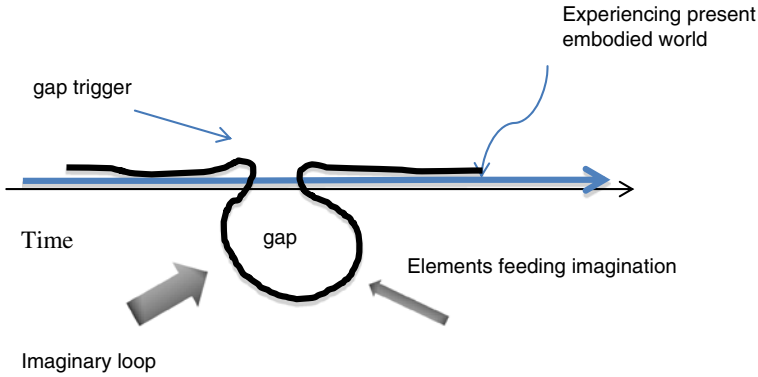

Fig. 2 Imaginary loop: gap-filling version

the flow of the given of experience, and the flow of consciousness: her capacities do not account for the given of experience. Imagination can repair that relationship, and allow restarting a better fit between thinking and understanding, and reality. Such deficit-based model can be seen as the offspring from a certain normative and epistemological posture. For authors such as Piaget or even Harris, it seems, human knowledge should allow a better fit to reality—an ultimate capacity to understand it, predict, and master it.

The second model sees imagination as expansion of experience (Fig. 3). Drawing on Vygotsky, it sees imagination as one core component of human experience, which not only participates continuously to our relationship to reality, but also, participates to the creation of a life which is uniquely human, embedded in its culture and history. The normative and epistemic underpinning seem thus radically different: authors such as Vygotsky seem to see an intrinsic value to imagination, poetry and the arts, as other forms of exploration of human realities, and realizing its potential (Vygotsky 1971, 2004). The goal here is possibly to expand people's capacities to know and experiment their being in the world; not to master it.

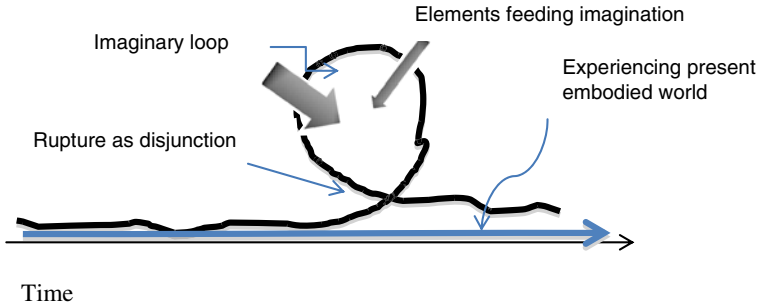

Fig. 3 Imaginary loop: expansion version

Our stance here is that this second line of thinking has a lot to offer, and that imagination, to be better understood, needs to be considered in its specificities. However, Vygotsky's strong insights on imagination have not been empirically grounded at the time of his life. Since that, and to our knowledge, although Vygotsky's contribution to the reflection about imagination is frequently acknowledged (e.g., Archambault and Venet 2007; Moran and John-Steiner 2003; Smolucha and Smolucha 1986), very little, if no research explores his intuitions empirically (but see general de Moraes Ramos de Oliveira and Valsiner 1997).

Our proposition is to identify occurrences of deliberate creation of disruptions, so as to develop a more precise understanding of the processes occurring at the various steps of the imaginary loop, and its possible contributions to development. We will explore two empirical examples where the disjunction from the current flow of experience is guided by specific semiotic resources: a metaphor, and fiction. As evoked earlier, new metaphors can expose one to a non-conventional and illogical combination of images or situations, and as such, are likely to create a gap which consists in an imaginary exploration. Fiction, on the other side, can be seen as crystallized or objectified personal or collective imagination, in one or a combination of semiotic codes. Understanding, and even more, enjoying fiction, demands to abandon the shores of daily life, and accept to follow the guidance of that artifact, while nourishing it with one's own experiences—memories, knowledge, impressions, emotions, etc.; the actual cultural experience—of watching a movie or reading a book—is thus a guided experience of imagination. As a consequence, it is quite likely to change the person's initial experience (Vygotsky 1971). Note however that the two examples below have been collected in the frame of research projects of other phenomena: we present them here because they offer entries in the processes of imagination.

Children Facing Metaphors in an Experimental Setting

Cerchia (2009, 2011) has explored the work of imagination engaged by French speaking children aged from 4 to 10 as they are exposed to metaphors. In this experimental study, children were exposed to four items, each of them consisting of a short dialogue between two puppets discussing potentially metaphoric utterances, and about which they were then questioned. In each of the four dialogues, the children were shown a farm model, with props such as a house, a field, animals and various equipment, and a couple of farmers called 'Fabian' and 'Laura' (see Fig. 4 below). The study was initially planned to capture the development of metaphorical thinking in a Piagetian tradition. Confronted to the task, some children did not understand the question, or refused to engage in metaphorical thinking, or engaged in non-canonical imaginary explorations. Rather than considering as "failing" the task, Cerchia took seriously what these children were actually doing and engaged in a qualitative analysis of experimental dialogues (Cerchia 2011). It appeared that many

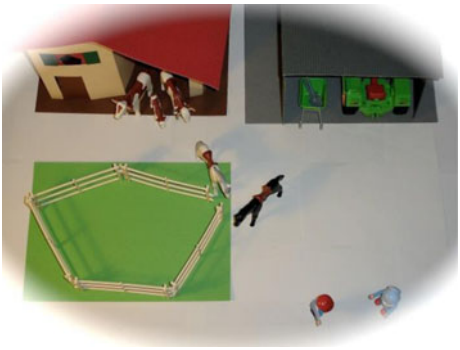

Fig. 4 Experimental setting

children engaged in what can be considered as imaginary loops. Here is one of the dialogues as told by the researcher to the child:

> One evening, Fabian and Laura put the horses in the paddock to avoid them leaving during the night. But one of the horses doesn't want to get in and runs very quickly and very far.
>
> Fabian tells Laura: 'Oh! It's a rocket !'
>
> (C'est une fusée!)
> Laura answers him: 'No, horses do not fly in the sky !'
>
> (Mais non, les chevaux ne volent pas dans le ciel !)

Then the experimenter asks the child: "Why is Fabian talking about a rocket?". The expected answer, in such a Piaget-inspired task, was that the children would explain the link between the horse and the rocket in terms of their common speed, which would indicate a conventional understanding of metaphors. However, some children answered in different ways, which we can see as occurrences of the work of imagination instead of mistakes such as "whateverism" or "fabulation" (Piaget 1926/1999). Here is the example of a young girl called Lynn (5 ; 1).

1 Exp : Why is Fabien talking about a rocket ?	1 Exp : pourquoi il parle de fusée Fabien ?
2 Lynn : Because he thinks horses can fly and I think he thinks about the horse from.. about the horse from.. from Hercules	2 Lynn : parce qu'il pense que les chevals ça sait voler et pis je pense qu'il pense au cheval de… au cheval de… de Hercule
3 Exp : He thinks about Hercules' horse	3 Exp : il pense au cheval d'Hercule
4 Lynn : yes I think that he thinks about this	4 Lynn : ouais je pense qu'il pense à ça
5 Exp : why does he thinks about Hercules' horse	5 Exp : pourquoi il pense au cheval d'Hercule
6 Lynn : because he has wings	6 Lynn : parce qu'il a des ailes
7 Exp : he has wings	7 Exp : il a des ailes
8 Lynn : and he thinks he can fly with his tale and his manes and so that's why he speaks about a rocket	8 Lynn : et pis il pense qu'il peut voler avec sa queue et puis ses crinières alors c'est pour ça qu'il parle de fusée

Lynn is mentioning a fictional character from a children's carton, Hercule's horse (Fig. 5) in the experimental situation. She thus borrows a cultural artifact commonly circulating and available in the children's cultural environment, an animated cartoon, proposing an imaginary world in which horses fly.

In the following example, Alexis (7 ; 8) is also answering to the same dialogue. Contrarily to Lynn, he does not mention a shared cultural artifact, but rather, he invents on the spot his own version of a hybrid animal, involving a fusion procedure commonly used in animated cartoons and mythology:

1. Alexis : because he, he really believed he had the image of the whole racket	1 Alexis: parce que lui il croyait vraiment il avait l'image de la fusée toute entière
2 Exp : yes	2 Exp : ouais…
3 Alexis : and he confused himself with a horse because he put himself straight in front of the racket and he had dreamt a little bit then after, the horse, he thought he put himself with (…)	3 Alexis : pis il s'est confondu avec un cheval parce qu'il s'était mis en plein devant la fusée pis il avait un peu rêvé donc après le cheval, il a cru qu'il s'était mis avec pis ben après … (…)
4 Alexis : yes then the horse he was with he was in the middle of because the horse he run next to the other field of the horse, then after his horse was a rocket and after the other horse got mixed up and after it made of a bit of a horse with a bit of a rocket	4 Alexis : ouais pis le cheval il était avec il était en plein dans pasque le ch'val il était couru à côté de l'autre pré du cheval, donc après lui son cheval c'était une fusée pis après l'autre cheval il s'est mélangé donc après ça a fait un bout d'un cheval et un bout d'une fusée.

Trying to make sense of this metaphorical dialogue proposed in this experimental setting, Alexis explores its imaged side. He thus proposes that Fabien had a dream (3) or that he has "the image of the whole racket" (1). In his dream, Fabien has "confused" (3)—or fused—the image of the racket with that of the horse, to produce a "mix up" (4), a hybrid half-horse, half-rocket being.

Fig. 5 Hercule's horse

Later, asked by the researcher, Alexis draws that creature (Fig. 6) and describes it:

5 Alexis : so he was there then he didn't understand, because a horse with a rocket, he said well it must be quick	5 Alexis : pis il était comme ça ben il comprenait pas, parce qu'une fusée avec un cheval, euh il disait bon ça doit aller vite.
6 Exp: yeah	6 Exp : ouais/
7 Alexis : but actually it was rather the the horse was on the top because so so it makes a reactor	7 Alexis : sauf que c'était plutôt le le le cheval il était en haut parce que comme ça ça fait le réacteur.
8 Exp : the horse was what ?	8 Exp : le cheval était quoi?
9 Alexis : he was for example it would pass and it was the top it was not at the bottom otherwise there would not be the reactor	9 Alexis : il était par exemple ça passait et il était le haut c'était pas le bas parce que sinon il y avait pas le réacteur
10 Exp : yes ok	10 Exp : ouais dacc
11 Alexis : so that was… what he was dreaming..	11 Alexis : donc c'est ça.... qu'il rêvait…

How can we understand these unexpected answers in terms of the work of imagination? We answer by decomposing the imaginary loop describe above, into what triggers it, what it is nourished with, and what outcomes it has.

1) *The rupture:* In this unfamiliar experimental situation (Elbers and Keldermann 1994), the children are exposed to a foreign situation—the experimental pseudo-game—in which they are asked by an adult to explain a metaphor—a statement about a horse and about a rocket—which can be seen as an unusual combination of perspectives (Cerchia 2009). The researcher's question, which socially forces the children to consider it seriously, focuses precisely on that discrepancy. Hence the disruption is the apparent absurdity of the metaphor caused by the conflict between two representations—and as such it triggers the children's imagination. Cerchia (2011) noticed also that the disruption could be caused by the strangeness of the experimental setting, especially for young children used to pedagogical or playful ones. But these aspects will not be analysed here.
2) *What is it nourished with?* To make sense of the situation, the children draw on existing cultural artifacts and conventions, available in their environment. Lynn is using a mythological figure from a cartoon—that of Hercule

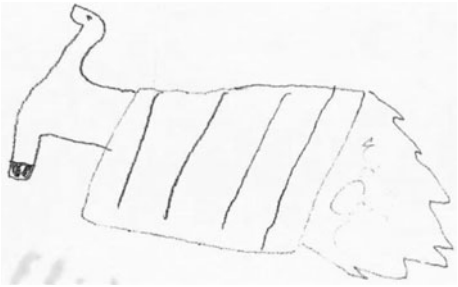

Fig. 6 Horse-rocket

—as symbolic resource (Zittoun 2006a, b) to make sense of the metaphor. As noticed by Rubin and Livesay (2006) in the field of clinical practice, the multimedia genre of superhero mythology provides children with fictions that serve as resources for developmental functions such as emotional release or problem solving. Alexis is building a hybrid creature as he might have seen in other cartoons or met in tales and other stories, also using a conventional semiotic operation.

3) *What does it enable to do?* Asked by an adult to answer to an apparently absurd question, the child engaging in the work of imagination finds a viable solution: he engages in a "bricolage" (in the sense proposed by Levi-Strauss 1966), using bits of cultural elements which he has internalized, to produce a new, innovative answer. Doing so, the child is both making sense of the specific question, and respecting the rules of an asymmetric conversation situation in which the child is expected to answer the adult's request. Eventually, the child might also develop his capacity to understand metaphors…

Young Adults Reasoning about Fiction

Zittoun has on her side explored the role of fiction in the development of young persons and adults when these become symbolic resources (2004; 2006a; 2007b). In some conditions, people emotionally invest, or resonate with, books, films or songs—cultural elements demanding an imaginary experience. It appears that through the cultural experience created by the cultural elements, or after it, people change their understanding of an otherwise problematic real-life situation. For instance, a young woman might better understanding and then regulate her feelings after a loss through her resonance with a melody or characters of a movie (Zittoun 2007a, 2008), or a young man might better understand his existential situation after moving places by using the narrative structure of a novel to organize and reflect upon it (Zittoun 2006b, 2007b). One way to understand the developmental function of uses of symbolic resources is precisely to consider them as one of the possible way to facilitate and guide an imaginary experience in situation of ruptures in the continuity of people's lives.

As part of a wider project on the place of literature and philosophy in their life (Grossen et al. 2012; Zittoun and Grossen 2012), we interviewed 20 young adults about their cultural experiences in and out of school.[7] The following sequence comes from an interview with Gaëtane, a student in a pre-academic track explaining why she liked *The Great Gatsby* (Fitzgerald 2000).

I Do you know what you liked in *The Great Gatsby*?

G Mm The characters. Or rather, what I liked is the hypocrisy, that one can feel in the book the characters are hypocritical one with another. Well I have the impression that it is a bit like today's society, because although the book has been written in the 20's I think it is still present this hypocrisy between people

[7] SYRES project (Symbolic resources in secondary school), by T. Zittoun and M. Grossen, and the collaboration of O. Lempen, C. Matthey, S. Padiglia and J. Ros, supported by the Swiss National Fund.

I Yes? (..) and you say this as general impression or in link with personal events ?

G Both. I have always been told not to trust people (a..) and I tend to do the opposite, to be very straightforward and believe in people's friendship, and I often had to destroy my illusions, I realized friends were not really friends and it was hypocritical towards me (..)

Contrarily to the first example, here the experience of imagination is described after it already took place. However, based on the context and previous in-depth analyses of this case and other uses of symbolic resources (Zittoun 2006a) we can propose a tentative analysis in the terms proposed here.

1) *The rupture:* The rupture is alluded to when Gaëtane explains what events she felt as resonating to her reading of the novel: the discovery that supposed friends were actually able to betray her and were not deserving her trust. One might say that it is this disjunction between Gaëtane's previous beliefs about the world and the values guiding her action—to be trusting, straightforward—and her experience of being betrayed that generates disruption.
2) *What is it nourished with?* In this sequence, it is very clearly the novel *Great Gatsby* which guides Gaëtane's imagination, and this in two senses. First, Gaëtane's discourse suggests that she had an intense cultural experience—the fictional experience as she was reading the book. She could probably vicariously "live" the imaginary world and narrative proposed, which allowed her to meet certain characters and follow plots. Certain aspects of that imaginary experience appeared to have resonated with memories of past or present real situations. Second, when Gaëtane recalls that experience of reading, as here in the interview, she draws or reactivates some part of this experience of guided imagination.
3) *What does it enable to do?* Through resonance between narrative and personal experience, the work of imagination can be nourished with real emotions, and it can in turn guide the reader's experience through some ways of naming, distancing or transforming them. Here, Gaëtane explains to the interviewer, having met in fiction certain hypocrisy (clearly recognizable) allows her to identify or read hypocrisy around her. In other words, after the experience of imagination—through inner dialogue or real dialogue, as here with the interviewer, Gaëtane could reflect on the imaginary experience, and from this reflexive stance, now examine differently her daily experiences of meeting more or less trustworthy others. Hence, the loop brings Gaëtane to a richer or more nuanced experience of the world.

In other words, the process of imagination guided Gaëtane in relatively abstract and complex experiences (related to human characters and values), allowing to address one particular rupture in her experience: that of the mismatch between her experience of being open and honest to people, and their reactions which cannot be understood. Imagination here brought her to develop new culturally guided perspectives, which now enrich her dealing with real life experiences.

Openings

In this paper, we reread classical theorizations of imagination. We proposed that imagination appears in some disjunction between the flow of embodied experience, anchored in the unfolding reality, and the flow of inner life or consciousness. Imagination is likely to be triggered by a disjunction between these, or, might be culturally guided or triggered. Through this reading, we moved away from approaches inspired by classical associationist models for which imagination mainly demands the mental recombination of images or representations already in mind. Furthermore, we took some distance from authors who, such as Harris or Piaget, analyze imagination mainly in cognitive terms, considering it as essentially non-verbal and non-social process. In contrast, Vygotsky proposed to see imagination as the capacity to take distance—more or less consciously, more or less reflexively—from one's awareness of the unfolding reality. Distancing is made possible thanks to one's internalized semiotic means, among which language, but also other semiotic modes (music or the visual arts).[8] As a consequence of this, first, imagination can be seen as always and necessarily social and cultural; and second, it can radically allow new perspectives. In that sense, Vygotsky sees imagination as an expansion of human experience; part of the generation of one's own zone of proximal development, it is a key process in human development. This raises various issues, which we will promptly present, and that constitute the program for future work.

First, from a developmental perspective, imagination is a modality of experiencing which can have the same level of complexity than any other thinking capacities of a particular person at some point in her life. Although our two examples are taken from rather different studies, we might say that they both show people engaging in imaginary loops, nourished by cultural elements, both relatively widely diffused—the child refers to children's stories while the adolescent refers to a novel. The child and the adolescent have different life experiences as well as different masteries of semiotic systems (e.g., the adolescent has learned to analyze literature at school, she masters a "secondary knowledge"). Both loops bring them back to the real with some expanded understanding; the child, about the unfamiliar experimental situation, about an idea so far un-thought, and the very fact that one can enage in an imaginary exploration to answer an adult's question; the adolescent, about her relations to others. Both loops are thus temporary zones of proximal development. Through it, the child creates a hybrid object; the adolescent masters a new category to read the world and a new personal experience to refer to. On the other hand, the adolescent here appears having acquired more distance from the experience through the loop—moving from specific cases to categories; and rereading her past, so as to allow new futures—than the child, who more modestly connects past meeting with fiction with the immediate future of making sense of the situation. That difference can be understood as due to different configurations: the actual situations about which the imagination occurs; the person actual maturation and capacities to engage in dis-

[8] Ricoeur's hermeneutic analysis goes in the same direction; for him, creativity in the discourse can occur through metaphors which are themselves embedded in language which has the capacity to trigger specific meanings—therefore his notion of "canonicity of sense"; however, his analysis is not sociocultural.

tanced thinking, partly due to the mastery of specific semiotic modalities; and social and cultural demands upon specific life periods (typically, adolescence involves more challenging social relations, and might require more normative explorations of the future). Given the complexity of such dynamic configurations, we therefore abstain to say more about developmental differences; and we rather carefully call for longitudinal studies of imagination through the life-course.

Second, what processes are engaged in imaginary loops need to be further described and explained. Following Vygotsky's understanding of the semiotic nature of these imaginary processes, we can draw on recent semiotic theorization of thinking, inviting microgenetic analysis of these loops, as for instance has been done in a dialogical perspective (Wagoner et al. 2011 ; Zittoun 2008), or in a lifecourse perspective (Zittoun et al. 2013). This we will develop in our next work.

Third, in our understanding, imagination is not limited by the borders of the demand of socially shared or materially constrained reality, it allows an *as-if* mode—which can be fictional, playful, hypothetical, counterfactual, retrospective or prospective mode—to create, on a mental plane, alternative realities, recomposing the given or enriching it. Our proposal is thus that imagination makes fire of any wood: in the process of imagination, people draw on their own experience, on that of others, on images and fiction, on social representations or natural motives, etc. Finally, the process of imagination might thus, through these multiple modalities, come to new perspectives, ideas, or modes of acting which open new avenues in the real world. Altogether, then, imagination might be a too-ignored, yet fundamental process at the heart of most complex thinking. The consequences of this proposal will then also have to be further explored.

Hence our overall proposal comes to simply inverse the paradigmatic view underlining most of current developmental work on imagination: most of it considers is as deficitary—not as good as reasoning, yet like reasoning, tending to usefully promote a better fit to reality. By assessing, after Vygotsky and some others, that actually imagination might be one fundamental way of bringing newness and change in thinking, we propose to reopen that line of thinking, and we can only call for theoretical and empirical work which would allow to study not only the role of imagination in development all life long, but also, the sociocultural development of imagination itself.

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