Perret-Clermont, A.-N. (2008). Epilogue. Piaget, his elders and his peers. In. A.-N. Perret-Clermont & J.-M. Barrelet (Eds). *Jean Piaget and Neuchâtel. The Learner and the Scholar* (pp. 202-231). Hove and New York: Psychology Press.
Source à utiliser pour toute référence à ce travail

PIAGET, HIS ELDERS AND HIS PEERS[1]

> Is Farel the only one who came down from his hilltop to preach?
> Or, with Renouvier, who affected us profoundly
> by his mighty spirit of Protestantism, are we going to keep hoping for an alliance between the religious search and the cult of classical logic, both rational and experimental? [2]

> Let us conclude […] by an act of faith in the strength of religious philosophy in French-speaking Switzerland. […] We should be able to reconcile moral and religious experience - have confidence in the value of the good and faith in the nature of reason which unifies reality - with the requirements of an authentic philosophical method based on a creative spirit and rational critique.[3]

INTRODUCTION

The works of the historians presented in the first part of this book allow the psychologist to see the child and the young Jean Piaget in his native cultural milieu, looking for his place and his way. This context shows him in a non-'Piagetian' way (which only becomes relevant in view of the coherent development of his point of view and his thinking) and gives a historical-cultural insight into his quest for intellectual partners and those with whom he first exchanged points of view during his time in Neuchâtel (1896-1929). Jean Piaget appears to have been a total psychological being (and not only an 'epistemological subject'), whose thinking reflects and accompanies emotional and social commitments, ideological discussions, beliefs, and aspirations. Some ideas, considered to be 'Piagetian', may lose a bit of their originality when one discovers them to have already been present in the environment in which Piaget grew up[4]. Yet it is just as interesting to see how this youth knew how to avail himself of the major scientific, religious, and philosophical discussions of the day in a small town so inaptly considered 'provincial' (but really what town would Neuchâtel be the 'centre' of?). Piaget knew

how to mix with great thinkers, who were themselves in contact with all of Europe and North America. Not only did he profit from contemporary discussions, but early on he also took part in them (that is, he was stimulated to participate actively). He did so with remarkable perseverance and personal originality, the foundation of which is worth looking into.

We shall try and show here how an awareness of certain aspects of the socio-cultural and historical context in which Piaget grew up can shed light on the meaning he gave to his system by theorizing on the positions that he had adapted early in life. We hope to make evident the dimensions of his psychological theory which are often implicit premises in contemporary thought. Perhaps one will find herein the possibility of a certain critical distance that will allow some researchers of the new century to embark with like-minded audacity on confronting, as he did, the great questions of the era and to boldly go beyond the limited boundaries that senselessly segregate the humanities from the sciences, 'humanists' (theologians included) from 'scientists'.

Jean Piaget, Sébastien, and his system

From the time of his earliest interests in philosophy, the young Jean Piaget set about conceiving a system. It was a life-long pursuit leading to the founding of new disciplines: genetic psychology and epistemology. His system finished by being so highly developed and so widely recognized that it seems sometimes to be endowed with an existence of its own, independent of its founder and its readers. This delighted Piaget because it did not contradict his epistemology: the fact that a system could be detached from its practical context[4] was for him an ennobling sign of just how well his thoughts had developed. He considered it a necessary condition that any such system of thought be submitted to the laws of logic in order to attain the status of a

universal. Piaget considered concrete situations, whether physical or historical, only as particular cases among 'possible worlds' (possible… in thought, to be sure). But is the real not mingled with the imaginary? And how can one reply to the epistemological question that Piaget kept coming back to, himself the heir of many philosophers, such as Kant: how can structures of intelligence correspond adequately to those of reality as the brilliant scientific discoveries seemed to show?

For Piaget, the task as well as the force of thinking lies in being able to describe reality just as it is, thanks to a mental exteriority (conquered with difficulty during years of intellectual development!) that allows the realization of its necessity. This 'necessity', which finally imposed itself on the spirit, Piaget describes as being at once logical and biological, i.e., 'bio-logical': it is the fruit of a thinking organism, a living being, with physiological, dynamic, self-regulated sensorimotor structures, which becomes little by little, stage by stage, aware of these structures and goes beyond them by thinking. The outcome of this ability to go beyond these structures forms a system because thought retains, in its very workings, the 'motor' of its origins, i.e., the *mechanism of self-regulated adaptation.* This is a kind of keystone in the Piagetian system, which allows its author simultaneously to account for ontogenetic and phylogenetic development and to found, in biological roots, the abstraction of his model - while at the same time seeing reflected therein his belief in the individual and in reason.

Piaget's personal and intellectual path is admirably coherent. The task he set for himself in his youth, while writing his novel *Recherche,*[5] in which he identifies with his protagonist Sébastien, who is in the throes of a metaphysical crisis, became his life's work. Jean Piaget managed to his last breath to create an enormous work that reflected his desire to develop a system that could satisfy his scientific and rationalist ambitions and that could especially deal with his

philosophical and metaphysical queries. He seems to have wanted to answer the latter, categorically and in the least agonizing way possible, by affirming the value of individual responsibility and autonomy and by showing that such is possible with the development of thought. In developing his theory, did Piaget not end up by reversing his terms? Do his ideas, initially 'on a divine mission' (to take up his own language of 1916[6]) in the service of personal responsibility and likewise to humanity not end up taking centre place, leaving Piaget, a relatively depersonalised individual, in the role of a servant to *thought*, itself promoted to the place of immanent reality, a unique source of justification?[7]

A rereading of Piaget's early writings allows us to see that this direction of his work is present and conscious from the beginning, with all the intellectual, philosophical, theological, affective, and social ways of thinking that it implies. Our author is avowedly constant and retains throughout his intellectual life the bases of the ideas that were there from the beginning. Early on he was able to explain the reason for his faith in the unprovable and personal character of the premises of all reasoning about values: they are indisputable. These premises rest on personal decision:

> Science cannot prescribe judgement of values to its premises. The premises of reasoning about value are given through awareness and cannot be demonstrated. If I set as my starting point 'I want to live and that which helps me to live is good for me', I make a judgement that is immediate and cannot be contested either by an individual or by science.[8]

'Science states, faith evaluates, and this evaluation is always in the last instance a matter of personal decision.'[9] Furthermore, we know how important coherent thinking was for Piaget.

He held on to this essential value over and above contradictions in the face of reality, which only made him mindful of the need to continue seeking better explanations. In order to found a psychology of values, he said, one has to treat the premises as a given, then check the experiences that led to these value judgements, *'making sure that the individual has remained consistent with himself'*.[10]

Contextualizing the cognitive activity of the young Piaget

We shall start off by examining the *original views* that Piaget, first as a youth and then as a university student, defended in his quest for meaning, and the *effect of his view in their historical contexts*. What was the choice of values made by this person who was seeking his way as the First World War raged? Our hypothesis is that the young Piaget adopted early on a certain number of views - which were to become premises as such in his later theory - to which he committed himself deeply in a milieu that included discussions as well as practices and conflicts, formed by the institutions (family, school, and university, churches, parties, youth clubs, scientific associations, etc.) that framed ideological discourse, the means of interpersonal relations, and the psychological and material conditions that made some projects feasible and others, on the contrary, quite difficult.

What interests us is not so much the study, which we have left to others (in particular Ducret[11] and Vidal[12]), of the social influence as such under which Piaget found himself or the network (quite limited, as we shall see) of relations that the young man established within his milieu, but rather it is the description of the social interactions in which he fully took part. Jean grew up, mindful of the meaning of life, in a milieu equally aware of all that was at stake for society in the education of its youth.[13]

Our presentation does not concern either the individual psychological approach that would explain by the single, internal dynamic of the subject, the study of a beautiful 'case' or a deterministic approach from a social point of view that would make Piaget the 'product' of social factors acting on a personality predisposed to scientific creativity. What is at stake here is an attempt to set the development of the young Piaget's cognitive activity in its historical, cultural, and social background.

We shall bring a contemporary view to Piaget's youth, influenced by rereading Vygotsky and shaped by the contextual approach of acts of meaning[14] and by that of the study of social interactions.[15] While psychologists speak of 'situated cognition'[16] within 'communities of practice',[17] we shall try to observe Piaget's thought in its historical place, in a world 'of many voices'.

Of course, we shall see that during the Neuchâtel period (1896-1929), that concerns us, Jean Piaget, child, pupil, student, young researcher and then young professor, was not left alone, abandoned to an epistemological investigation of inanimate objects. On the contrary, as he noted himself on several occasions in his autobiographical writings, he was in regular contact with his peers and elders. Together they supported his participation in lively discussions and 'authentic' scientific activities. This kind of support at an early age could create envy in today's youth, who, at the end of the 20th century, are held back for long periods in what Lave calls the role of 'peripheral participants'.

Rediscovering the circumstances, the people, and the institutions that shaped the social and cultural landscape in which Piaget developed his model allows us to point out, over and beyond

the meaning that Piaget attributed to his scientific involvement, its wider impact. Piaget's intellectual activity is not an abstract reality divorced from time. It is, certainly, historically situated. Being aware of this context will allow us to take a critical look at the effect of the Piagetian theory of psychological development because it will put it into perspective.

Certainly our aim is rather grand for the means at our present disposal. In spite of the undertaking of the present work, much more information would doubtless be needed to truly capture the context in which Piaget grew up. Nevertheless, we hope the boldness of our endeavour (after all, Piaget himself encouraged boldness in face of great subject of study) will encourage others to pursue research in psychology, not only of the child but also of those who claim to practice it, as Gilliéron has done.[18] The reader must understand that our intention is not another biographical study of Piaget, nor a historical recounting of his interests, but rather an attempt to reread a certain number of his positions and his formulations of ideas, *as practical, contextualized activities coming from a person who tried to set his individuality at the heart of the questions and demands of his social and cultural milieu.* In this perspective, Jean Piaget's thoughts seem in part to be active and intentional *responses*[19] to his milieu, that is, to his masters and the people whom he met (including the famous child who treated him like a 'clown'![20])

Many years later, in rereading his personal journey, Piaget declared:

> I was greatly struck after the First World War […] by the repercussions from the flow of ideas of the social and political instability that reigned in Europe, which led me naturally to doubt the objective and universal value of philosophic positions taken under such conditions. In my small country, so calm and relatively isolated from events, many symptoms showed the dependence of ideas on these social upheavels.[21]

It is clear that one of Piaget's aims was to give value to what he often called the 'autonomy of thought', that is, *freedom*. Our intention is certainly not to deny Piaget these liberties, but on the contrary, to make them appear as many meaningful answers amidst the expectations and constraints of his original milieu.

PARTNERS FROM PIAGET'S YOUTH

In order to situate the development of Jean's convictions and to understand his positions, one needs to identify those with whom he was in contact, especially those who were important in forming his emotional, intellectual, and moral character. We have already met them in the preceding chapters, in the tight family circle, at primary school, at grammar school and at university, in the church, and in social life. Certain features of Jean Piaget's relationships with his partners, and their context, can clarify the inclinations and options of this young researcher.

Naturally his family and childhood relationships come first, those who always remained close to him: a region that formed a small political entity, strongly aware of its past or in any case of its myths,[22] at the heart of which the virtues of clock-workings, of commercial export, and of the cultural and economic development of the region crisscrossed. It seems that on this level at least, Piaget was at one with the reigning spirit, for years later, in the Netherlands he would claim in his acceptance speech for the Erasmus Prize:

> I am pleased to see that the distinction which I am receiving is European and comes from a country of modest size, like my own, for I am convinced of the essential role that small European countries play in contemporary culture.[23] It seems to me that researchers in all fields benefit from a rather particularly free spirit and a non-conformism that are

> harder to achieve in larger countries, where the weight of national traditions and especially fashions and 'schools' seem slightly more apparent.[24]

The family

Even if Piaget himself spoke little of his parents, we know the influence of their personalities and in particular his father's important role in the Neuchâtel intelligentsia. We remember, in effect, the polemic his father provoked that is still talk about. Growing up beside him, Jean watched at least for twenty years *the psychological weight of social constraints* that overshadowed a free spirit acting in defiance of received ideas. He also was able to measure the force, and then later to detach himself from the hold of momentary ideologies, of the method of historical critique that his father used. Was the genetic psychologist who verified the authenticity of his subjects' behaviour in relation to their stage of development remembering his father's studies of anachronisms? Jean Piaget identified himself [25] with his father, who was active, committed, rigorous on the intellectual level, and politically engaged,[26] but we do not know how Jean felt about this person who, though inspiring respect and even sometimes admiration, also left the memories of an occasionally gloomy, difficult personality. In any case, he was an authority figure whose qualities his son praised.[27] But there are no traces of cooperation between father and son in the sense of jointly pursued activities to accomplish a common project. One can imagine that they limited themselves essentially to intellectual contact, in the sense that Piaget would later apply the term 'cooperation' to his theory.

Jean Piaget spoke even less of his mother, also an active person and committed to political and religious causes. It seems that the delicate health that affected her nerves would be foremost in his memories:

> My mother was very intelligent, energetic, and, above all, truly good; but her somewhat nervous temperament made our family life rather difficult. The consequence of this was that early on I neglected playing in favour of serious work, as much to imitate my father as to escape.[28]

Jean Piaget had several sisters, but in spite of the emotional ties that united them, he hardly mentioned his female siblings - who perhaps did not count as significant 'peers' for the intellectual life of a budding scientist who identified with his father. It could also have been a matter of reserve in talking about family relationships.

On the other hand, Piaget often spoke of his godfather, Samuel Cornut, who, it seems, made only a furtive appearance at a key moment in his adolescence.

Studies

Piaget frequently evoked his comrades, in particular his friend Gustave Juvet, who accompanied him through nearly every stage of growth: at school, in the Club of the Friends of Nature and even in the philosophy society.[29] Many of his schoolmates had impressive careers in science, academia, etc., sometimes in fields similar to his own. There is for example, Jean de La Harpe, who succeeded Piaget at the University of Neuchâtel, where he treated subjects close to Piaget's interest (reason, the relation of dogmatism and faith, the notion of time, etc.).[30] But the traces of camaraderie in the study of these interests are weak. 'Piaget precociously ran through the marshes for his malacology, doing research that was fundamentally solitary, and when he returned, his social relations remained tense.'[31] They did not, it seems, develop further. Piaget, on the other hand, often mentioned his relations with teachers who knew how to encourage him,

such as Arnold Reymond 'who follows my juvenile attempts with an admirable patience and benevolence'.[32]

Extra-curricular activities

Piaget spoke frequently of the elders whom he met outside of school and who influenced his intellectual activity: 'I began with biology, having had the chance quite young to be initiated by an elderly naturalist…';[33] this was Paul Godet. One finds here Jean Piaget collaborating in *joint experiments*, fixed in a very precise scientific field. The social and affective bond with this specialist was such that it seems to have permitted the young neophyte to quickly leave behind the status of apprentice, of *peripheral participant,* for that of a fully integrated researcher. Pierre Bovet is another example of an older figure who contributed to create particularly stimulating socio-cognitive conditions for the adolescent Jean, in particular with opportunities for concrete cooperation (in the full sense of the term) between peers and with intellectual contacts, offered by the Club of the Friends of Nature which he had founded with others while still an adolescent.[34] Pierre Bovet, at the time when Jean was a highly active member, still regularly supported with his presence and his advice, the activities of this Club. Other intellectually and scientifically minded adults, engaged in the life of the country, took interest in some of the Club's activities. It is quite striking to see that the life of the Club depended greatly on the *initiative of the young* (on this point it seems similar to scouting[35] and other youth groups started between the end of the 19th and the beginning of the 20th centuries). Adults certainly held an important role but rarely directly; they approved, encouraged, suggested resources, principally intellectual, but sometimes material. They did not organize the activities, but were content with watching over the 'frame' of the activities.[36]

The Church

There are certainly other places where the adolescent Jean Piaget met elders and peers, in particular, the official Church, where he followed courses in religious instruction. In spite of his critical stance, Piaget was, nonetheless, inspired by these lessons. The social form of the courses reminded him, undoubtedly, more of the magisterial atmosphere of school than of the intellectual discussions of the Club of the Friends of Nature. The violence of his remarks in his pamphlet *La mission de l'idée*[37] gives the impression that the catechumen found the Church too authoritarian, more interested in imposing its beliefs and dogmas than serving as a genuine foil in his quasi-mystical search for the meaning of life.

On this point, one can ask why neither Jean Piaget, the future epistemologist of international renown, nor Maurice Zundel, the future famed theologian, though schoolmates and members of the Friends of Nature, never mentioned each other on matters of *faith*. Nevertheless, Piaget wrote extensively on the relations between science, philosophy, and faith, and Maurice Zundel put at the centre of many of his works questions that were certainly already nagging him at the time of the Friends of Nature:

> What pushes a scholar to give himself to research? Is it domination of the world, which applied science offers? Is it freedom from sustained reality? Is it the thought of an ever-imperfect truth? Is it the inspiration of the Truth? What is there of Jacob's struggle that the scholar surrenders to the real: an illusion, a possession, contemplation? (Zundel's questions as reported by Donzé[38])

Of course they were still young. Without a doubt it was a difficult time for inter-confessional discussions on religious matters: Jean Piaget was Protestant while Maurice Zundel was Catholic.

Zundel would later write:[39]

> As a child I lived in a Protestant region; I listened to the polemics and the parades of the 'anti' who would plaster the Catholics' walls. My grandmother, who was Protestant, never failed to mistreat anyone who was Catholic. On the other hand, the surrounding Catholic environment was full of ritual, offering an easy world that required nothing; it was sufficient to have committed to memory the formulas of the service to be satisfied. A lot of opposition, of talking, very little of the Gospel, none of that makes religion. We listened to the Gospels read in a neutral tone that we often heard, and the sense completely escaped me. All of that can be reduced to a religious practice without any experience of God; the formulas were right and true, thus acceptable, but stale. Salvation conformed to well-chosen formulas… An imposed family religion without resistance.[40]

Maurice Zundel became a priest and committed himself profoundly to the search for a living and well-cultivated faith. This cost him the misunderstanding of the ecclesiastical institution and exile, but he was a major influence in Catholic Action and Christian Youth movements as well as on many people who felt drawn to his mediations. The invitation of Pope Paul VI to preach a retreat at the Vatican in 1972[41] brought him out of a long isolation and sanctioned the recognition of his international reputation.

Jean Piaget would later say:[42]

> Growing up Protestant between a faithful mother and agnostic father, I soon keenly felt the conflict between science and religion…. Reading Bergson was a revelation…: in a moment of enthusiasm close to ecstasy, I was seized with the certainty that God was life, in the form of that *élan vital* or vital force of which my interests in biology allowed me to study a small section. I thus found inner unity in the direction of immanentism, which fulfilled me for many years, though in much more rational forms…. I made my decision: I would give my life to philosophy with the sole aim of reconciling science and religious values.[43]

For Jean Piaget, research in the direction of immanentism was a way of fighting against the idea of a transcendent being distinct from the human spirit. His remarks on the matter reflect his polemical attitude towards the Church, particularly Catholicism. Piaget clearly made known his view of ecclesiastical tradition and authority that seemed to him to be the social constraint *par excellence*: 'No other social institution shows better than the Catholic Church the fundamental relation between the idea of transcendental being and *de facto* authority.'[44]

For Maurice Zundel, God is not an 'idea', and an encounter with Him is to be recognized in its otherness rather than seen as a constraint. At the time, Zundel was greatly influenced by mystical experiences.[45] But could these young people talk openly of such matters, given the polemical climate of the time? Maybe at meetings of the Friends of Nature. It is not certain that even in this context, exchanges of this kind went beyond the sprightly remarks of youth. One can read in the *Cahiers des présences* (attendance records) of the Club[46] some ironic allusions, reflected, for instance, in the nickname Tiécelin, taken from *Roman du Renart,* which Jean Piaget suggested as a nickname for Maurice Zundel: 'Tiécelin, because the crow has an

ecclesiastic exterior that well suits Zundel' (15 September 19ll). Note that Piaget's nickname was Tardieu, an allusion to a snail in the same novel, and which he would occasional spell Tar-dieu. The relationship between Piaget and Zundel seems to have been one of open camaraderie and perhaps even genuine friendship, based on the comments each scribbled in the *Cahiers des présences*. Tardieu was president, and Tiécelin was secretary.

Some years later, young Piaget made contact with the clergyman, Paul Pettavel, a person with a socially committed vocation to Christianity. Pettavel did not skimp either in his efforts or his commitment: personal support and accompaniment, publication - largely at his own expense - of the *Feuille de Dimanche* with its political analyses from a Christian perspective, and his public defence of positions in a difficult and tense socio-historical context. Let us recall in particular what was happening in La Chaux-de-Fond between 1917 and 1918: the national councillor, Paul Graber, had been arrested, and the crowd invaded the prison to free him; the city was occupied by the army; there was a general strike, added to which was the flu epidemic that put many families in mourning.[47] Pettavel made room for Piaget at the heart of the editorial staff of the newspaper *L'Essor*. This same Paul Pettavel left lively memories among other Neuchâtel youths who numbered among Piaget's entourage, in particular Samuel Roller and Laurent Pauli, who came from La Chaux-de-Fond and would many years later, one after the other, co-direct with him the Rousseau Institute at the University of Geneva.[48] It is somewhat surprising to see that Piaget maintained contact with people from this milieu, because he never mentioned, either in his autobiographies, or in his theological writings, the historical events that significantly shaped their context and commitments. As of 1914, Jean Piaget was a member of the Swiss Students Christian Association. He actively partook in the intense discussions.[49] He took an interest in psychoanalysis when he heard Théodore Flournoy speak.[50] More and more Piaget distanced himself from theology and gave up this kind of convoluted abstract reference

to experience in considering the regulation of values, the role of intellectual cooperation, and the evolution of moral judgement, all of which replaced in his theory what Bovet had called the 'awakening of a religious feeling'. But let it not be forgotten that in this field as well, Piaget once again found favour with an elder, Paul Pettavel, an expert (using contemporary psychology vocabulary) who *encouraged the young man's speaking out by introducing and including him in his own social circle.*

When one places Piaget in the context of his origins, we cannot help being struck by the remarkable vitality of Neuchâtel at this time, and the opportunity it offered its youth to actively participate in its life. Piaget certainly remembered it when he theorized on the role peers play in the structuring thought and in the sociability of thought. Yet this insistence in the Piagetian model on the importance of horizontal relationships should not then lead to overlooking the elders who cleared the way for him to take part in scientific, philosophical, religious, and political discussions of his time. Why then did Piaget, the epistemologist and psychologist, not give due credit to this kind of experience with experts?

Jean Piaget's relation to his socio-cultural matrix

This bountiful background of family, intellectual and social life that flowered in Neuchâtel taught Jean to take a position, to shape and to defend his thinking (he also learned greatly appreciated organizational skills such as finding venue and funding, stimulating comrades, winning over their collaboration… abilities that would later be highly useful for him for setting up a scientific laboratory[51]). It was at this time that his wish to construct a 'system' was born, and even if he would later give up this term to talk instead about a 'theory' (a 'discipline' even: genetic epistemology), one can already recognize certain attitudes and choices that became

indicative of his work. We shall look at the basis of his theoretical position from four viewpoints: affective relationships, relationships with authority and opportunities offered by his elders, the respective roles of peers and experts, and finally, overstepping boundaries.

The affective dimension had extremely little place in the work and writings of Piaget. Even in his autobiographical accounts references to such matters are also rare: expressions of affection are few and reserved. He clearly spoke of his great friendship for his childhood companion Gustave Juvet; we know of the importance of his schoolmate Rolin Wavre;[52] one feels a sort of collusion between him and his master Godet; he acknowledged his appreciation for the support given by Arnold Reymond, and his admiring respect for his father, but as for his mother, he admitted to having sheltered himself from her. His memories of her later contributed both to his interest in psychopathology[53] and his wish to break off his didactic analysis:[54]

> I never felt the wish to go further in this particular direction, always preferring the study of normal cases and the functioning of intelligence to that of the abuses of the unconscious.[55]

Other than this difficult maternal presence, Piaget spoke of few other women. We know nearly nothing about Cécile-Marie Berthoud (1848-1931), who was his teacher in the private school he attended at the age of eight.[56] After that, only names of schoolmasters figure in his curriculum. Of course, at the time, the education of boys and girls was not the same at the secondary level. The Friends of Nature did not have any female members until 1987. Nevertheless, female students attended the University at the same time as Piaget, and it is striking to see that the majority of them were foreigners: from 1911 to 1918, there were at least 110 female students who came from the vast Russian empire to study at the University of

Neuchâtel.[57] It seems that Piaget mixed in an essentially masculine world, where there was only a marginal feminine presence.

Pierre Bovet's[58] excellent descriptions of the feelings of love and fear, which are based on the experience of respect for elders, and which he believed influence the growth of a child's psyche and faith. Jean Piaget, 18 years his junior and writing at a different time, sets the problem of relationships with authority in different terms. Was it the effect of his relationship with his father and with the hierarchy of the conservative society of his native city? Was it even a reaction to the tormented atmosphere of his early years: pre-revolutionary activity in Russia, the start of the First World War, and social movements and internal tensions in his own country? It is certain that Piaget felt his milieu to be very constraining and doubted the benefits of what he would later call 'social constraints'. The heritage of his predecessors often seemed negative to him on various levels: in religion (see his tirades in *La mission de l'idée*[59]), in philosophy (he feared the notion of a transcendence beyond understanding[60]), and even science as seen in the preface to his doctoral thesis on malacology, in which he essentially expresses his dissatisfaction with the current methods of research.[61] Several times in his psychological work, he returns to the idea that intergenerational transmissions can hardly be the source of understanding if it is subject to an authoritative principle that precludes the autonomy of thought. [62]

However, the elders, who ranked as experts in the young Piaget's entourage, were not all - far from it - sententious professors or dogmatic thinkers. One sees them, on the contrary, conscientiously making room for the young: whether they were Arnold Piaget, editor of the revue *Musée neuchâtelois*,[63] Paul Pettavel, in his own publication, Arnold Reymond in dialogues with his students, and Pierre Bovet, through the Friends of Nature but also with the

activities of Bovet's family at Grandchamp.[64] And let's not forget Paul Godet in his laboratory at the Natural History Museum.

Jean Piaget belonged to two types of circles: those where relations among peers were favoured, especially the Friends of Nature and those where he had to learn to assert himself among experts: first the Jura Club, then from 1912 to 1914, the Neuchâtel Society of Life Sciences, the Swiss Zoological Society, and the Swiss Society of Life Sciences,[65] as well as those already mentioned above.

Certainly, to a great extent, Jean Piaget benefited from the role of his peers: but were they truly 'peers'? Piaget probably quickly assumed the position of 'leader', doubtless with the support of his comrades, who found him both entertaining and interesting. Some of the minutes of the meetings of the Friends of Nature give this impression. He soon became its president.

Piaget speaks little of discussions between equals and does not refer, as far as we are aware, of the fruits of exchanges with those less expert than himself at the time. Did he miss out by the erudite status already acquired in his youth? The question may be worth looking into. In fact, the first experience that he relates of the cognitive benefit gained from an unequal relationship seems to be that which he had during interviews with children in Th. Simon's laboratory in Paris.[66] One wonders if the pleasure that Piaget had in holding these interviews did not reveal a self-projection that allowed him to relive a situation that he had often experienced with success: that of the brilliant student who knows how to take part in adult talk.

During his childhood and his Neuchâtel youth, Piaget mingled in a social milieu that his parents left relatively open and that gave him the chance to overstep boundaries: straddled between two

churches with parents of different religious convictions; living in Neuchâtel but with contacts in La Chaux-de-Fonds, the other metropolis of the canton that was also bourgeois but with socialist leanings; joining student societies where one discussed theological, philosophical, and scientific questions; studying at the science faculty, yet regularly attending lectures in the humanities,[67] at a small university with an international student body; leaving Neuchâtel to continue his studies at Zürich (in another language) then on to Paris before returning to the Rousseau Institute in Geneva after being summoned by Claparède and Bovet.

SEARCHING FOR A CONSTRUCTION OF MEANING: POSITIONS TAKEN BY JEAN PIAGET AND THEIR SIGNIFICANCE IN THEIR CONTEXTS

We have pointed out some of the characteristic features of the socio-cultural and intellectual world in which Jean Piaget grew up. We shall now look at the positions that this young man took and at his precocious entry into the discussions of his elders. Searching for meaning and nourished by philosophical reading, he attempted to develop a system, which he founded on a certain number of firmly held premises, as if they were fundamental to his *identity* more than his thinking. The relation between reason, society, transcendence (or more exactly immanence), and action were essential to him. Given his interests as a naturalist and his studies in biology, Jean Piaget discovered philosophy and theology and confronted the great questions of his day (God, war, justice, freedom, truth, the social order, evolutionary theory, etc.) by trying to respond to them with a particular vision of Man.

Piaget's leading ideal: reason and personal thought

It is already evident in Jean Piaget's adolescent texts that he did not see the individual destined to be a disciple. Beginning as a young specialist of the snail, Piaget then awoke to philosophy and discovered another living species: *Homo sapiens*! He was captivated by the problem of access to *knowledge* to such an extent that he made it the primary characteristic of Man, that is to say man's 'essence' (even if he himself does not use this term). It was an era of lively discussions, for both academics and clergy, on the evolutionary theories of Darwin, Lamarck and others. His attitude as a biologist and his focus on thinking as the source of knowledge led him to approach from a very particular angle philosophical and theological problems that his contemporaries (especially his elders) were discussing.

His inaugural lecture, delivered in 1925 when he assumed the chair of philosophy, history of science, and psychology at the University of Neuchâtel, makes his position explicit. He talks, first of all, of a return to Kant and his concept of *a priori*; then proposes the idea, which seems to him contrary, 'of a radically contingent spiritual development, such as Brunschvicg believed to see in the history of human thought'. But Piaget does not seem to be very convinced by this alternative and opts for a third possibility: his own method - which he sees as impartial - of genetic analysis in psychology, because he feels that 'it is possible that such a method imposes the concept of a kind of *ideal that directs reason,*[68] an ideal that is at once active yet not fulfilled'.[69]

Previously, in particular in his competitive work titled 'Réalisme et nominalisme d'après les sciences de la vie' (1917, neither published nor available), Piaget had already treated this *ideal.* His philosophy professor, Arnold Reymond, who had amply read through this work, was critical of 'the equivocal character of the definition that is given of God, sometimes presented as a "mere idea" ', sometimes appearing as a 'reality existing independently of our judgements. The

author was constantly floating between the two value judgements (added Reymond) and this indecision seems to come from the fact that the fields of metaphysics and that of psychology are not adequately distinguished.'[70]

Many years later, in his work *Biologie et connaissance*, under the title 'Vie et vérité', Piaget[71] makes his position clear:

> If the truth is not a copy, it is an organization of the real. But who is the organizer? … All the philosophers concerned with the absolute have had recourse to a transcendental being, which goes beyond man and especially 'nature' in such a way as to place the truth beyond spatial-temporal and physical contingences and makes its nature intelligible in an a-temporal or eternal perspective […] Before placing the absolute in the clouds, it is perhaps useful to look within things. If truth is an organization of the real, we should first try to understand how an organization is organized, and that is a biological question. […] It is better, before positing a transcendental organization, to exhaust the resources of immanent organization… (and to look for) the secret of rational organization in the living organization which even includes *its development.* The method consists then in trying to understand knowledge through its own construction, which is no longer absurd because it is *essentially construction.*[72]

At this stage it is no longer a matter of essential and abstract 'reason' but a kind of 'biological reason' that Piaget tries to account for by his works on the processes of self-regulation.

This evolution towards a more and more 'biologizing' explanation of life and of thought changes neither Piaget's initial fundamental position nor his rejection of a reduction of

intellectual processes to the phenomena of cultural transmission. Thought is for him first of all an *individual* affair and is only socialized gradually. 'Four-and five-year-old children … are still not subjugated to social habits and objective thinking.'[73] But this socialization will only lead to a personal thought if, as Piaget later wrote,[74] the child is 'reared in function with the cooperation of minds and not (in function) with the respect of the word'. Certainly society can impart opinions and beliefs, but it cannot provide the subject with understanding itself. The latter requires some kind of *personal enlightenment,* an inner conviction that gives a sense of balance. The only 'constraint' is intellectual coherence, which can be attained through a particular type of social cooperation: verification by peers free of all hierarchical pressure.

The social as constraint

Piaget always rejected any kind of constraint. His rejection of impersonal thought could on occasion, be surprisingly violent, for example in the writings of his youth,[75] or as a young professor when he refused not only dogmas and static views of knowledge but also the implicit constraint on the child by teaching him a language:

> From his first smile, and especially his first words, the baby is subjected to social influence, at first very lightly but then with more and more coercion, which begins by channelling his mind, but then goes on to shape, and maybe even, alter him entirely. It is, particularly, a system of ideas, of implicit judgements. It is made up of crystallized thinking and impersonal thought inherited from preceding generations. An infinitely tyrannical thought will weigh on every state of individual conscience, however intimate it may be. [76]

We can wonder how Piaget came to reject a certain kind of heritage. His elder, the professor Arnold Reymond, in commenting on the competitive essay mentioned above, suggested an interpretation: this work is 'directly inspired by an ever present circumstance…the war…raises once again and in a painful way the old problem of the relation of the individual with the social organism of which he is a part'.[77] Jean Piaget was a young adult when the war of 1914 broke out. His generation were the heirs (and potential soldiers) of an untenable situation. Still other aspects of the socio-historical context shaped the framework in which Piaget found himself: the Russian Empire, with which Neuchâtel was closely associated through its watch industry, was in the throes of the violent repressions of the tsarist regime. Locally, the ideological ambiance of the canton was coloured by the relatively recent rejection of the feudal heritage from which Neuchâtel had only a few decades earlier freed itself completely. What sense could be given, under such circumstances, to the relation between the individual and society?

In searching for the meaning of life, the young Piaget found an answer in individual free thinking, which he raised to the level of a mission of salvation. Here he allied himself with the values of the Protestant ethic that scorned social meddling and favoured the absolute responsibility of the individual as the sole judge of one's conscience. Was Piaget giving himself a sort of religious *mission,* in promoting the understanding of the importance of individual thinking? For Piaget, the meaning of life was to be found in freedom of thought, in the protection of essential values, and in the struggle against ideological allegiance and involvement in war. For him, such a commitment was the same as the quest for greater social justice.

Piaget obviously took from his youthful experience the importance of peer interaction. Knowledge, including religious knowledge, grows from intellectual contacts governed by an

ethic of discussion.[78] Piaget neglected the intergenerational dimension of access to knowledge. On this point, he was in contradiction with his Russian contemporary, Vygotsky,[79] who based his paradigm of research on the co-existence of the elder's elevated social position and expertise.[80]

In this paradigm, the view of knowledge that results cannot be static. Knowledge cannot be pre-shaped either in the object or in the subject; it emerges from a living development, owing as much to historical evolution as to an ontogenetic development. The categories of thought are not immutable. They evolve in function with the subject's *experience*, which, containing concrete facts, is necessary for thought because it is not by pure speculation that thought is ennobled. Piaget, the biologist, concentrated on the dynamics of living beings and sought to observe the processes by which the creative spirit - he had read Bergson - allows intelligence to construct itself.

In following Piaget, one realizes that by concentrating on the dynamic of individual intelligence, he was also looking to affirm the autonomy of the person and to discuss the possible development of a person through the freedom of independent thinking in the social context and especially under the pressure of elders. But he hardly ever uses the word 'person' to designate the subjects he studied.

He courageously opposed, at different levels, anything that he felt to have an illegitimate social ascendancy, particularly institutions. This *social*, which Jean Piaget so greatly mistrusted, seems to be collective opinions (reminiscent of the 'collective representations' of Durkheim?) which lack the means to justify themselves: institutions such as the State and the Churches, and all the sources of coercive ideological thought. Also included here are social practices that do

not assure social justice for the deprived or for the role of women (Piaget, like his parents[81], in a country which only of late recognized the woman's right to vote and constitutional equality for men and women, was ahead of his century). Piaget refuted the value of education that constrained the intellect rather than awakened a spirit of researching and questioning. He thrashed out against preceding generations, who, by exercising their authority, prevented the growth of personal judgement. Instead, he pleaded in favour of contacts between peers, who alone would be likely to respect the autonomy of thought and to enrich it by reciprocity and unconstrained agreement.

How does one account for a young Piaget, barely out of an adolescence that he himself described as a period of 'freedom, because it was a period of primacy for exchanges between peers about obedience towards adults, "as well as a" kind of intellectual revolt of each generation against its predecessors', as a step that allows 'an adolescent to escape, at least internally, adult authority in order to seek in his relationships with his contemporaries the living source of his future activity',[82] how could this former adolescent be the object of the magnificent praise of his elder, Arnold Reymond, who saw in him the *'the genial continuation of his elders'?*[83] Added to this one ought not to forget the fair treatment of his masters, who seem to have been able to recognize and support the competence of their junior without holding his outbursts against him.[84]

Piaget and discussions with his elders

Was Jean Piaget moving ahead in constructing his personal theoretical thinking, by essentially taking positions that broke with his background, like a game made of cognitive conflicts with his elders? Or was he, as Reymond said, a young thinker who distinguished himself in

discussions with his elders by using their own critical historical methods? Our working hypothesis in this chapter will be that Piaget first absorbed, little by little, the concepts and ways of the intellectuals around him in Neuchâtel and French-speaking Switzerland before changing them to his own ways.

Owing to family ties, Jean Piaget was first exposed to the field of history. From his experience with the new science of history developing in France, his father maintained the 'constant care to go to the sources themselves' and a 'critical attitude that never accepted non-verified opinions'.[85] This critical-historical method had not been unanimously received. In particular, one wonders 'if it is judicious to give credit to all the doubts that critical history casts on documents'.[86] Châtelain[87] relates the remarks of Alexandre Daguet in the pedagogical journal *L'Educateur*[88]:

> One ought not to play with the sacred feeling (patriotism) as a great reserve is necessary in rectifying certain facts in the field of historical literature that is aimed at the youth and the wide public. Once one has destroyed the belief of the young and of the people in a few of the traditions that are dear to them and that symbolize in their eyes freedom, independence, republican virtues, one will have destroyed all historical and patriotic faith […].

Châtelain remarked that in Switzerland 'the historians were running up against this obstacle: on one hand, the objectivity aimed at by the historical method, and, on the other, the need to win over the vast public to the values of the Republic'.[89] Was Piaget following the path of a critical historian as his father had? It would not seem so, and in fact he never did any work of a proper historical nature. However, it must be noted that he was keenly involved in courses in

the history of science taught by his professor of philosophy, Arnold Reymond, and from which he kept the 'historical-genetic attitude';[90] like his father, Piaget cultivated a critical scientific spirit seeking the facts especially (maybe even) if they went against accepted ideas.

Arnold Reymond also taught him to read critically. In reading Kant, for example, he showed how much this philosopher had been dependent on the state of science of his day and how much it had evolved since then. Piaget raised the question of the historical relativity of ideas, and in particular of the philosophical debate on the nature of scientific knowledge. He continued his training in this direction during his stay in Paris. Some years later, succeeding Reymond at the University of Neuchâtel, he would say:

> History has shown that the categories of the mind are not fixed and immutable, and contemporary thinkers are so convinced of this idea that, by a curious reversal of values, mobility seems to be … the criterion of proper work on intelligence.[91]

Did Jean Piaget borrow from his elder, Pierre Bovet, the methods of 'observation and testing by questioning',[92] which he then developed further in his work?[93] Usually the method of clinical questioning is cited as having been adapted by Piaget, who borrowed it from psychiatry.[94]

Piaget studied psychological growth, in different fields, as Bovet (1912 and 1925)[95] had done in the development of religious feelings, and like Claparède (1915)[96] in his studies of the evolution of interests and the role of play for the child. But Piaget systematized these kinds of observations and theorized further than his elders the processes themselves of the psychological genesis, historical as much as individual, of knowledge. It is interesting to see that his historical and genetic relativism caused, in a certain measure, the same kinds of resistance as his father's

critical-historical relativism. Piaget thus recounted that his colleague P. Godet, professor of philosophy at the University of Neuchâtel, would often tell him, without beating about the bush, that his 'psycho-genetic point of view in epistemology would suit him fine if he confined himself to the intellectual aspects, but socially these views are dangerous because man needs a stable and absolute reality'.[97] Even his dear schoolmate and friend, as a student of science and philosophy, Gustave Juvet, told Piaget: 'I am ontogenetic because a permanent Order is as necessary for intelligence as for Society.' Piaget commented: '…a Maurassian (right-wing) air was disturbing the metaphysics of elite individuals in French-speaking Switzerland, who had, however, been brought up as democratic Protestants'. In spite of the reactions of his peers, Piaget stayed faithful to his father's rigorous intellectual attitude, i.e., Protestant, democratic, and critical. The genetic approach became central to his work for decades, throughout which he would try to draw parallels between the history of ideas and individual intellectual development. In his search for phylogenesis and ontogenesis we see the biologist at work.

Because of his studies in biology, Piaget was, especially drawn by the important post-Darwin controversy on evolution. The question of the respective parts of the innate and the acquired in the adaptation of the individual to his milieu remained with him forever. Piaget had been involved with malacology for a long time. He continued to experiment on the adaptation of molluscs transferred from one lake to another[98] by asking if there was a possible hereditary transmission of what is acquired. This is the same question he asked, by extension, in examining the processes of adaptation on the psychological level.

Pierre Bovet had studied 'the social instinct and tried to understand under what circumstances it could be taught.[99] Piaget was not particularly interested in the social instinct. He mistrusted the social and sought, in reason, its opposite. But he presented a model that ascribes to instincts

the role of biological premises for the development of adaptation processes. These, according to Piaget, extend on the level of thought into a process of self-regulation and equilibration. According to him, reason does not 'educate instinct' but supplants it. The social can contribute only by learning how to regulate exchanges between peers.

One can see that while he engaged in discussions with his elders and stayed mindful of the issues discussed, Piaget was nevertheless systematically pursuing his own views. The positions he defended on the sources of knowledge and of faith gave him occasion to express his differences.

Self-autonomy in relation to his elders and the idea of transcendence

Piaget clearly took a position in discussions on the sources of knowledge and of faith in favour of immanentism, which, for him, 'in different societies supplants the notion of transcendence little by little [… because], in the measure to which reciprocity and mutual respect develop unilateral respect diminishes in importance and, with it, the source of belief in transcendental gods'.[100] For Piaget, knowledge is neither a revelation progressively conceded by the Creator to the mind of His creature, nor an adaptation of the creature to the Creation that would enable it to understand the latter. The source of knowledge is in the evolution and even in the dynamic of thought: 'Thought explains being but, to the degree to which we learn to know it, being explains thought.'[101] Meaning and understanding identify with each other. Like his predecessors and contemporaries, Piaget was looking for the 'meaning of life' (wich is, by the way, the title of Bridel's lecture at the same meeting in Sainte-Croix in 1922)[102] and, with them, he gave an eminent place to ethics in individual thinking. His religious questions were not original to him:

> It is no mystery to no one that most of the French-Swiss philosophers began by doing studies in theology and, all things considered, that is an excellent beginning, *under the condition of leaving it* and being formed, as are ours, in *the spirit of free research and respectful independence,* declared Reymond in 1931.[103]

In these discussions, the place that Piaget attributed to God seems to be his own, even if he tried to show that it was not completely in opposition to that evoked by his challengers:

> The two great ideas of God the creator and God the guarantor of truth retain their importance if one translates them into immanent language […]. Neither perception, nor notion, nor judgement is possible in any of us without there being implied in those acts a supreme Ideal, a norm at once intellectual and moral that enlightens our thinking like our conscience. If God is not there, the source of intellectual light and love, then where is He? […] Limited by the given, on one hand, and by the laws of thinking, on the other, we delve thus into Being and Spirit, in the hope of seizing one day the Unity. […] Where does human thinking end; where does God begin? The problem is above all moral: God steps in when we give up our self, when we renounce intellectual egocentrism as well as practical egocentrism. […] Immanentism is as much entitled to the spiritual food as he who said: 'the Realm of God is inside of us'.[104]

A thought that distances itself from action

To summarize, we think it can be said that after the elders whose authority he feared, and in a social world that he found repressive and constraining, the young Piaget carried out intrepid

research to discover a meaning that would make the individual the source of his own reflected action, an individual endowed with a kind of divine guarantee of a rational nature. He developed a system from that premise that, starting with the problem of meaning, ended up with a *logical, abstract model* of coherence.

We can ask *why*? Piaget, who was particularly active in those discussions, gave such priority to *thought* that he probably did not notice to what extent this underlay, at least with certain masters - Bovet, in particular - concrete and committed *actions.* Piaget spoke in terms that could lead one to believe that he was concerned only with discussion. Yet the political and educational stakes to which his elders were committed were loaded with meaning. Their epistemological models had immediate direct social and pedagogical implications. For example, the positions of the pastor Pettavel marked him politically and ecclesiastically in a very precise way in highly fraught matters. Pierre Bovet certainly set forth interesting ideas in the field of psychology and pedagogy, but they owed their meaning to the long tradition of the Bovet family, who, just a few kilometres from Neuchâtel at Grandchamp, were actively involved in social foundations.[105] Let us remember that it was this same Pierre Bovet who not only reflected on the education of youth but who also created and supported the Club of the Friends of Nature where Piaget spent much valuable time. It is certain that Piaget assigns a fundamental place to *action* in his system. He presents it even as the basis of thought. But in his developmental view, he leaves action at a stage so primitive that he does not even study its adult forms. As a consequence, in his psychological study, Piaget leaves the field of action in order to concentrate principally on the study of *judgement* and *rational thought* in a movement that ends finally by detaching thought completely from action. Piaget explicitly favours this detachment towards abstraction, without reflecting, it seems, on the practical consequences of his position. This detachment results in

favouring logic over an understanding of the problem of meaning, such as it is psychologically experienced, i.e., in direct contact with individual and collective daily life.

Where does this detachment come from in Piaget? In his novel *Recherche,* he lets Sébastien say in his mystical quest:

> If (the thinker) renounces action, it is to render a greater service, to give to those who act a purer truth. Because action necessarily distorts the ideal, mixing fact with right. It is not for thought to throw the stone, to be sure, but nor is it for thought to take part in this distortion. If not, progress is no longer possible. Progress is made by individuals strong enough to ignore action and to lean, in spite of the fact, towards the ideal of the right.[106]

Is the adolescent interpreting in his own way the traditionally Protestant mistrust of 'salvation by works'? He goes on to say a few lines later:

> It is true that the thinker must not lose sight of reality. 'They are not of this world, says Christ, but I send them into the world.' If the truth is not reality, not floating above it, then it is interior to reality, driving it. Thus the soul of the thinker must be open to all the surrounding miseries. It explains them without remedying them. This work is for others, once evil has been identified.[107]

The 'interior truth', that Piaget describes, seems to appear only in the breath of inspiration, producing thought and speech but not action. Christ is evoked for his words, but they are placed

neither in the context of his actions (feeding, caring, consoling, etc.) nor in the concrete contexts of his living interlocutors.

Piaget and his cultural heritage

At a time when one seeks to liken by comparison the works of Piaget and Vygotsky, it may be worthwhile to recall the specificity of their socio-cultural heritages and the historical contexts at the heart of which they forged their positions and their thoughts.

One sees that Piaget grew up at the crossroads of social influences that were very different from his Russian contemporary.[108] He belonged to a political entity at the heart of what one may describe as a 'confederation of minorities' (and not an empire) that offered the possibility of identifying neither with the ruling members of the nation nor with a dominant culture. The Neuchâtel citizen was not out to 'civilize the world' by his culture - but perhaps by his religious ethic. The transactions that would have been familiar to him were rather commercial.[109] He was not a citizen of a colonial power but of a country of farmers, watchmakers, engineers, mercenaries, tradesmen, and bankers. Nor was he from a Catholic region that might consider instruction a good to be distributed from a central entity in the interest of the coherency of the social body. Rather, he grew up in a traditionally Protestant state where the religious atmosphere tended to emphasize the dignity of the individual (and not that of the Church) in direct contact ('democratically' so to say) with God. Personal experience - and in particular the highest part of that: religious experience - was seen as unique and intimate, like a kind of incommunicable premise.

Piaget was also the child of political, cultural, religious, and parental traditions that cultivated a critical distance from authority. His indifference to social factors in his development, apart from its roots in his biography and his personal inclinations, was perhaps also due to the ideological atmosphere of his background, where authority was generally seen as foreign, repressive - at best protective; where institutions had for a long time needed to find their place under the threat of foreign takeovers.

But Piaget would go further in his ideas of a quasi-egocentric individualism,[110] considering the development of one's own thinking as a primary and universal task. As a result his system recognizes neither the importance of social solidarity nor the relational interdependence that makes possible not only psychological growth but also access to knowledge gathered by preceding generations. This 'egocentrism' led Piaget to underestimate the role of his elders as much as that of his peers.

REOPENING THE DISCUSSION FROM THE PREMISES OF THE MODEL

Based on the present (unfortunately still limited) 'case study' of the thought of this future scholar, numerous questions can be asked or reopened. His premises are not necessarily those of today's researchers, yet should not stay implicit. The same certainly goes for the underlying postulates of the hypotheses of other 'grandfathers' of contemporary psychology, especially Vygotsky.

It is important to see the historical and social situations of today, while asking ourselves if the great theories, especially of those two predecessors, are not only for us instruments of thought, but also *distorting filters* owing to their socio-historical choices (perhaps ill-timed for our

current situation), the importance of which we ignore because of our lack of appreciation. Returning to those implicit *a priori* can also be an occasion to work out the construction of new psychological, social, and cognitive insights by drawing on the experiences and reflections of very different schools of thought.

In particular, in the circumstances that were ours at the turn of the 20th century, it seems important to us to reconsider the imparting of knowledge and the development of know-how by looking with new terms at the political and technological changes (that pose problems of freedom, identity, and relations between age groups) that underlie them. Entering into the mould of the preceding generations can hardly suit the young confronted by considerable social and ideological upheavals. Yet denying cultural heritage leaves future generations without references, tools, acquired experience, or memory.

How should one rethink relations between adults and youth, between expert and novice, between those committed to actions based on different responsibilities? Cultural context structures in part ways of reacting and thinking, and the search for abstraction - outside of action, relations, and time - is not necessarily the most adequate norm in every circumstance. The universality of thought is perhaps not where one should seek the answer. Contemporary research has made evident the dimensions of the problems different from those Piaget treated.[5] It seems to us that the 'case' study of the adolescent Jean Piaget, of such vivacious thinking, may be used to illustrate a certain number of characteristics of cognitive activity that can be understood with the theoretical tools currently available, which we shall now briefly recall.

Cognitive activity begins in relational spaces that make it possible, while at the same time this activity contributes to structuring these spaces.[112] The epistemic quest is not just motivated by

cognitive activity. The learning subject mobilizes and constructs different strategies according to what he perceives, at stake in the situations that he meets. Thinking does not take place in a void, without relations or social actions.

Recent research on learning has also brought to light the importance of considering the specificities of the different domains of knowledge and the forms (conceptual or procedural) of cognition in order to improve the study of psychological development.[113] It would be interesting to look at what forms of knowledge Piaget was exposed to as a child. Since the learner is not merely confronting a feeling of logical necessity and a feedback of physical reality, but also the actions and interpretations of other social actors. These take place in institutional contexts that legitimize (or not) certain approaches and certain memories. Memory and action sometimes work towards contradictory aims and in somewhat contorted organizational schemes and conscious plans. We also know better how the 'micro-history' of the subject influences how one will interpret new situations on the basis of the elaborations already made of those previously encountered. This transfer of earlier psychological experiences not only concerns the cognitive aspects but also, certainly, the emotional and affective dimensions, particularly connected to the meaning that the learner gives to events that he has experienced, in social fields marked by institutional and ideological traditions and by emotional bonds within the family. How did the personal history of Jean Piaget, somewhat of a loner himself, create in him a need to so greatly value abstract thinking, which he placed above action and to which he entrusted a superior social role? One cannot forget here the words of Sébastien and can hardly wonder about the experiences that led him to say:

> The thinker begins with an attitude of revolt. He must be free, intensely free; he must dare to see all the turpitudes and all the cowardice. […] It is the action of practicing

> with the adversary for the needs of the cause: thought has nothing to do with compromises. It is independent and sufficient unto itself. This independence is only won at the cost of extreme struggle and outward revolt. […] Revolt against his own who tried to tie him down, against orthodoxy that tried to divert his thinking, against politics that tried to nationalize him, against fellows and enemies, against those who wanted his good and those who would diminish him. And, after the revolt, solitude […]. 'Solitude is holy', so the poet says.[114]

The *mediation* between the object of knowledge and the learner, since the invention of printing and with the growth of modern means of communication and of information, seems (rightly or wrongly…?) no longer direct. It is no longer given through words, facial expressions, or hands of the elder, the master, or the expert. It appears more often indirectly, coming from a teaching 'transmitter' (and not 'creator') of knowledge or from semiotic tools that reify the word: books, audio and visual recording, computerized data, etc. What is the psychological impact, in relation to knowledge, of this symbolic mediation? This question begs another with respect to Piaget's experience: what would happen to Jean's experiences of hearing directly the combative stories of the historian Arthur Piaget, of working at the Museum with his old naturalist friend, of witnessing the action of the pastor Pettavel, to practicing philosophical inquiry with his master Reymond or his godfather Samuel Cornut, and scientific research with the experts who supported the Club of the Friends of Nature? What would happen to the person-to-person contacts that served as levers in Piaget's development? Are they accessible to today's students?

Returning to the philosophical and theological discussion that was at the heart of the beginnings of Piagetian psychology, one can see - at least among many contemporary Neuchâtel adolescents - that the question of meaning is no longer asked in the same terms as at the time

of Piaget's youth: these terms are no longer those of *history* (which adults perhaps fail to pass on); nor are they about *the meaning of the relation between the person and his/her Creator,* nor whether the ways of conceiving these relations are intellectually and morally adequate. Maybe the contemporary period has taken seriously the human being as in the image of God, of which he is also the Creator, that it finds itself greatly challenged in its search for understanding not only Creation but also the effects of its own material, relational, ecological, social, and intellectual activity. Do older generations still know how to talk to the youth and encourage them to discuss? Or are these generations no longer able to do so because they have been so affected by the war of 1940-1945, even more violent than the preceding one, by the revolutions of their colonies and other collective trials, by 40 years of a divided Europe, that they have conflicting relations with the heritage of their past that makes it difficult for them, as for Piaget, to accept and transmit the memory?

Has the fall of the Iron Curtain opened for Europe, less divided, other areas of action and thought to take on these questions. And towards ends other than theological, ideological, or scientific?

Anne-Nelly Perret-Clermont

Notes

[1] A partly similar version of this chapter has been published under the title: 'Revisiting young Jean Piaget in Neuchâtel among his partners in learning' (pp. 91-121), in L. Smith, J. Dockrell & P.Tomlinson (eds). *Piaget, Vygotsky and Beyond*, London & New York, Routledge, 1997.

[2] J. Piaget, 'L'orientation de la philosophie religieuse en Suisse romande', *La semaine* littéraire, 1921, 29, p. 410.

[3] Piaget, op. cit., p. 412.

[4] We will concentrate principally here on the context of Jean Piaget's youth. To follow the examination of the international framework of his early scientific activities in child psychology and pedagogy, consult S. Parrat-Dayan, 'Le texte et ses voix: Piaget lu par ses pairs dans le milieu psychologique des années 1920-1930.' *Archives de psychologie,* 1993, 61, pp. 127-152, and 'La réception de l'oeuvre de Piaget dans le milieu pédagogique des années 1920-1930', *Revue française de pédagogie,* 1993, 104, pp. 73-83.

[4] …and socio-cultural - but it is we who are making this distinction, because Piaget hardly ever labelled these aspects except in the vague and pejorative terms of 'social constraints'.

[5] J. Piaget, *Recherche,* Lausanne, La Concorde, 1918.

[6] J. Piaget, *La mission de l'idée,* Lausanne, La Concorde, 1916.

[7] Thought seems here to take the place that, in Protestant theology, is filled by a transcendental God and salvation by faith.

[8] Piaget, op. cit*.,* p. 65.

[9] Ibid, p. 80.

[10] J. Piaget, 'La psychologie et les valeurs religieuses', Christian Association of French-Swiss students, *Sainte-Croix*, 1922, Lausanne, La Concorde, 1923, pp. 38-82. [Present author's italic.]

[11] J.-J. Ducret, *Jean Piaget, savant et philosophe, Les années de formation,* Geneva, Droz, 1984; and in the present work.

[12] F. Vidal, *Piaget before Piaget,* Cambridge (MA), Harvard University Press, 1994; and in the present work.

[13] A. Reymond, 'La pensée philosophique en Suisse romande de 1900 à nos jours', *Revue de théologie et de philosophie,* 1931, 81, October-December, Lausanne, pp. 5-20. In this report on the activities of the philosophy society in French-speaking Switzerland, one can read, for example, the questions that were raised by the work of Edouard Claparède on *The right to educate:* 'In view of what or whom does one educate the child? In view of a particular society (nation)? But what right has this society to do so? In view of an ideal? But on what basis is this ideal founded and how is it justified?' (p. 7).

[14] For example, J. Bruner, *Acts of meaning,* Cambridge, Cambridge University Press, 1990; and B. Rogoff, *Apprenticeship in Thinking: Cognitive Development in Social Context,* New York and Oxford, Oxford University Press, 1990.

[15] For a discussion of these questions (among others): A.-N. Perret-Clermont, *Social Interaction and Cognitive Development in Children,* London, Academic Press, 1980; and A.-N. Perret-Clermont and M. Nicolet (under the

direction), *Interagir et connaître,* Cousset (Fribourg), Delval, 1988; also C. Pontecorvo (under the direction), *La condivisione della conoscenza,* Florence, La nuova Italia, 1993.

[16] See specifically : L. Resnick, J. Levine, and S. Teasley (eds.), *Socially Shared Cognition*, Washington, American Psychological Association, 1991.

[17] Also: J. Lave and E. Wenger, *Situated Learning: Legitimate Peripheral Participation,* Cambridge, Cambridge University Press, 1991.

[18] Ch. Gilliéron, *La construction du réel chez le psychologue,* Berne, Lang, 1985.

[19] Piaget had a practice of thinking as a *response,* for he would often tell his students in Geneva: 'To develop an idea always choose one or two scapegoats with whom you can imagine a response.' Following this advice, for the present article, I shall try not to lose sight of two 'scapegoats': Vygotsky for one, whom I shall reproach for a model of the development of thought which makes the cultural expert the ultimate reference, with, as a result, quite a weak accounting of the creative initiative and commitment of the individual as a person, and an over-estimation of the need of asymmetry in the roles of expert and novice in the construction of understandings; my other 'scapegoat' will be Piaget, whom I shall try to get to show how the model is an abstraction of the affective, relational, and cultural processes intrinsically connected to the development of the fruits of thought, including Piaget's own.

[20] J. Piaget, 'Discours de Jean Piaget', *Stichting Praemium Erasmianum,* Amsterdam, 1972, pp. 27-32.

[21] J. Piaget, *Sagesse et illusions de la philosophie,* Paris, Presses Universitaires de France, 1965, p. 22. [English translation: *Insights and Illusions of Philosophy*. New York, Cleveland, The world publishing company, 1971.]

[22] J.-M. Liengme, 'Le sens de la mesure. L'émergence d'un discours historique centré sur l'industrie horlogère neuchâteloise', *Cahiers de l'Institut* d'histoire, 1994*,* 2.

[23] Notice how Piaget's emphasis here is not unlike those of another Neuchâtel personality who also greatly reflected on the areas of Europe, Denis de Rougemont. He was among Piaget's first students at the University of Neuchâtel in 1925 (cf. B. Ackermann, *Denis de Rougemont: une biographie intellectuelle,* Geneva, Labor & Fides, 1996, 2 vol.).

[24] Piaget, *Stichting Praemium Erasmianum*, op.cit., p. 27.

This reading of social reality by Piaget is not without humour and says more about the role of certain identity myths…when one knows the importance of the *school* of psychology which Jean Piaget himself founded in this small country.

[25] J. Piaget, 'Autobiographie', *Revue européenne des sciences sociales—Cahiers Vilfredo Pareto,* 1976,14, 38-39, pp. 1-43, p. 2.

[26] He was director of the State Archives, the first rector of the University, an influential member on the commission for the grammar school, etc.

[27] Ducret, op. cit.*;* Vidal, op. cit.

[28] Piaget, 'Autobiographie', op.cit., p. 2.

[29] See Reymond, 'La pensée philosophique', op. cit.

[30] Ph. Muller, *Approches de l'homme contemporain*, Neuchâtel, Messeiller, 1976, pp. 23-28.

[31] Philippe Muller, personal communication

[32] Piaget, *Sagesse et illusions,* op.cit., p. 14.

[33] Piaget, *Stichting Praemium Erasmianum,* op.cit., p. 27.

[34] See Vidal, op. cit.*,* and in the present work.

[35] Pierre Bovet had translated into French Baden-Powell, the founder of scouting.

[36] N. Guinand and R Lüscher, *Amici Naturae: un siècle, une histoire,* Neuchâtel, Club des Amis de la Nature, 1993. Published in 70 examples for the 100th anniversary of the Club of the Friends of Nature (without indication of the place of publication).

[37] Piaget, op. cit.*,* 1916.

[38] M. Donzé, *La pensée théologique de Maurice Zundel,* Geneva and Paris, Editions du Tricorne & Editions du Cerf, 1980, 335, p. 62.

[39] M. Zundel, 'La clé du royaume', *Choisir,* 1976, 200/201, pp. 3-7. We are grateful to Rev. René Castella, former chaplain of the University of Neuchâtel, for this reference.

[40] But if the inter-confessional relations were stagnant and the formulas stale, there remained however interpersonal contacts. Zundel in effect continues his remarks by adding: 'In the second class, I met a comrade who was not Catholic. He approached the Gospel in a new way; intelligent and passionate, he took to the Gospel and to the thinking of Pascal. He was that admirable instrument who made me feel that the Gospel was not a collection of speeches and formulas, but a presence that I perceived by the way he read the Sermon on the Mount…'

[41] Published subsequently: M. Zundel, *Quel homme et quel Dieu,* Vatican retreat, Paris, 1976.

[42] Piaget, *Sagesse et illusions,* op.cit., p. 12.

[43] Ibid.

[44] J. Piaget, 'Immanentisme et foi religieuse', Geneva, Swiss-French Group of former members of the Christian Association for Students, 1930a, pp. 8-54, cited by L. Barbey in 'La pensée religieuse de Jean Piaget', *Nova et vetera,* 1982, 4, pp. 261-314. We are indebted to Georges Panchaud, honorary professor at the University of Lausanne, for this reference. While Professor Panchaud was visiting professor at the University of Neuchâtel, he drew our attention to the theological stakes in Piagetian positions.

[45] M. Donzé, *La pensée théologique*, op.cit., p. 21.

[46] We would like to thank our colleagues Jacques Méry and Luc-Olivier Pochon, mathematicians, alias Synopipe and Bromure, honorary members of the Amici Naturae for information about the life and spirit of this still active club. We are indebted to Jacques Méry for reading these attendance records.

[47] But Piaget does not refer to these political and social events.

[48] Samuel Roller, personal communication. Laurent Pauli, personal communication.

[49] See Charles Thomann, in this work. Piaget, 'La psychologie et les valeurs religieuses', op.cit.

[50] F. Vidal, 'Sabrina Spielrein, Jean Piaget - chacun pour soi', *L'évolution psychiatrique,* 1995, 60, 1, p. 100.

[51] Attendance records of the Amici Naturae.

[52] Philippe Muller, personal communication.

[53] Piaget, 'Autobiographie', op.cit., p. 2.

[54] L. Appignanesi and J. Forrester, *Freud's Women*, London, Virago Press, 1992, cited by A. J. Soyland, 'Sabina Spielrein and the Hidden Psychoanalysis of Psychologists', *Newsletter of the History and Philosophy Section of the British Psychological Society,* 1993, 17, pp. 5-12. We are grateful to Irena Sirotkina for having brought to our attention this reference to this interesting study of the psychoanalysis of Jean Piaget.

[55] For the relation of Jean Piaget to psychoanalysis during his stay in Paris (1919-1921), refer to the study of P. Harris, 'Piaget in Paris: from "Autism" to Logic', *Human Development*, 1997, 40, pp. 109-123.

[56] See A.-F. Schaller-Jeanneret in the present work.

[57] These students, perhaps frequently (but not always) enrolled in the Department of Modern French at the Faculty of arts, were drawn doubtless to Neuchâtel by the reputation this region had for speaking 'good French' (that is, without much trace of regionalisms) and by the reputation of the number of emigrant tutors and governesses to Russia (Maeder, 1993). The Russian students were also numerous in other Swiss universities at the time, finding in this country a freedom of expression and study what was lacking in their tormented native cities owing to pre-revolutionary events (Neumann, 1987).

We are grateful to Professor Rémy Scheurer of the University of Neuchâtel for those remarks and references.

[58] P. Bovet, *Le sentiment religieux et la psychologie de l'enfant,* Neuchâtel, Delachaux & Niestlé, 1925.

[59] Op. cit*.,* 1916.

[60] Op. cit*.* , and 'Pour l'immanence. Réponse à M.J.D. Burger', *Revue de théologie et de philosophie,* 1929,17, pp. 146-152.

[61] J. Piaget, *Introduction à la malacologie valaisanne.* Thesis submitted to the Faculty of Science at the University of Neuchâtel with a view towards obtaining the degree of Doctor of Science, Sion, Aymon, 1921, pp. 1-3.

[62] See for example: J. Piaget, 'Problèmes de la psycho-sociologie de l'enfance', in G. Gurvitch (ed.), *Traité de sociologie,* vol. II, Paris, Presses Universitaires de France, 1958-1960, pp. 229-254.

[63] See M. de Tribolet in the present work.

[64] The Bovet family had been active there for several generations. Pierre Bovet was familiar with the hospital, school, Evangelical teachers' college, and spiritual retreats that gave birth to the Protestant congregation, the Evangelical Community of the Sisters of Grandchamp.

[65] See F. Vidal in the present work.

[66] J. Piaget, *Stichting Praemium Erasmianum,* op.cit.

[67] See M.-J. Liengme Bessire and S. Béguelin in the present work.

[68] Our italics.

[69] J. Piaget, 'Psychologie et critique de la connaissance', *Archives de psychologie,* 1925,29, 75, p. 210. (Inaugural lecture delivered 1 May 1925 for the chair of philosophy of science and psychology at the University of Neuchâtel)

[70] A. Reymond, 'Rapport du jury sur le prix de la société académique. Département de l'Instruction Publique 1917. Première partie: Enseignement surpérieur', pp. 53-63, cited by M.-J. Liengme et S. Béguelin in the present work.

[71] J. Piaget, *Biologie et connaissance,* Paris, Gallimard, 1967. [English translation: *Biology and Knowledge: an Essay on the Relations Between Organic Regulations and Cognitive Processes*. Chicago, London, The University of Chicago Press, 1971.]

[72] Piaget, op.cit*.,* pp. 414-415, the author's italics.

[73] J. Piaget, 'Psychologie et critique de la connaissance', op.cit., p. 207.

[74] J. Piaget, 'L'individualité en histoire', L'Individualité : 3ème semaine internationale de synthèse (Individuality: 3rd international week of synthesis, organized by the Centre International de Synthèse), Paris, 15-23 May 1931, p. 115.

[75] J. Piaget, *La mission de l'idée*, op.cit., and J. Piaget, *Recherche*, op.cit.

[76] J. Piaget, 'Psychologie et critique de la connaissance', op.cit., pp. 204-205.

[77] A. Reymond, 'Rapport du jury sur le prix de la Société académique', p. 53, cited by M.-J. Liengme Bessire and S. Béguelin in the present work. From the same perspective and in circumstances a little different, 30 some years later, Piaget would take on teaching at the Collège de France, in 1942, which he spoke about in these terms: 'The hour when academics feel the need to show their solidarity in face of violence, and their fidelity to permanent values' (J. Piaget, *La psychologie de l'intelligence,* Paris, Armon & Colin, 1947, p.5 [English translation: *The Psychology of Intelligence*. Totowa NJ, Littlefield Adams, 1972.).

[78] See in particular: J. Piaget, 'La psychologie et les valeurs religieuses', op.cit., p. 82.

[79] In 'Vygotsky and Piaget: A Collective Monologue', *Human Development,* 1996, 39, p. 237-242. René van der Veer shows that Piaget had known since the 1920s of how critical Vygotsky was of his theory but he did not want to take up the matter. Did he feel personally vulnerable on this point? Did he fear recognizing a formidable adversary? Or did he hold back because of his own political and ideological stance in the difficult post war period?

[80] For a discussion of this question that fundamentally divided Piaget and Vygotsky: A.-N. Perret-Clermont, 'Les partenaires de l'intelligence', *Vous avez dit pédagogie,* 1995, 40, pp. 10-17.

[81] See M. de Tribolet in the present work.

[82] J. Piaget, 'L'individualité en histoire', op.cit., pp. 96 and 99.

[83] A. Reymond, 'La pensée philosophique en Suisse romande', op.cit., p. 13.

[84] In 1925, in the preface of his work, *Le sentiment religieux et la psychologie de l'enfant,* Pierre wrote: 'The research undertaken in a completely independent manner by Mr Jean Piaget, and continued by him since 1922, at the Rousseau Institute, on the reasoning of the child, has opened new avenues in thinking.' Bovet took the precaution here to emphasize the autonomy of the one whom he had just named head of his institute. Why would Bovet have taken this unusual precaution: was it a respectful and laudatory attitude (protective even) or prudence in handling a revengeful attitude of the junior who allowed himself to be called 'boss' by his collaborators a few years later at the same institute?

[85] See M. de Tribolet in the present work.

[86] Ibid.

[87] P.-Y. Châtelain, 'Les manuels d'histoire Suisse dans l'école primaire neuchâteloise (1850-1900)', *Musée neuchâtelois*, 1994, 3, p. 238.

[88] A. Daguet, *L'Educateur,* 1872, pp. 211-212.

[89] P.-Y. Châtelain, 'Les manuels d'histoire suisse', op.cit., p. 139.

[90] J. Piaget, 'Post-scriptum à la "Pensée philosophique en Suisse romande de 1900 à nos jours" par A. Reymond', *Revue de théologie et de philosophie,* 1931,81, October-December, p. 20.

[91] J. Piaget, 'Psychologie et critique de la connaissance', *Archives de psychologie*, 1925,19, p. 196.

[92] J. Piaget often acknowledged that the *results* of Pierre Bovet had inspired him, particularly in his work on moral judgement (Piaget 1930, p. 185; Piaget 1932, p. 301 of the re-edition of 1957). The question that we are asking here is relevant to the *methods* of investigation.

[93] Cf. A. Reymond, 'La pensée philosophie en Suisse romande', op.cit., p. 13.

[94] For example: Vinh Bang, *Textes choisis,* Geneva, 1966/1988, Faculty of psychology and of science of education, p. 39.

[95] P. Bovet, 'L'éducation de l'instinct social', *L'Educateur,* 1922, 48, 10, pp. 145-150; and Bovet, *Le sentiment religieux,* op.cit.

[96] E. Claparède, *Psychologie de l'enfant et pédagogie expérimentale*. I: *Le développement mental.* Re-edition, Neuchâtel, Delachaux & Niestlé, 1946.

[97] J. Piaget, *Sagesse et illusions*, op.cit., pp. 23-24.

[98] This is not a matter of Piaget going from the banks of Lake Neuchâtel to those of Lake Geneva! In fact, Piaget sought to observe the processes of adaptation of molluscs from Neuchâtel thrown into the waters of Geneva: would they pass on to their descendents new characteristics that they had acquired, by necessity adapted, as a result of this uprooting?

[99] See especially: P. Bovet, 'L'éducation de l'instinct social', *L'éducateur,* 1922, 48, 10, pp. 145-150.

[100] J. Piaget, 'Pour l'immanence', *Revue de théologie et de philosophie,* 1929, 17, p. 149.

[101] Ibid., p. 150.

[102] Ph. Bridel, 'Le sens de la vie', in Christian Association of students in French-Switzerland, *Sainte-Croix 1922,* Lausanne, 1923. pp. 16-37.

[103] A. Reymond, 'La pensée philosophique en Suisse romande', op.cit., pp. 14-14 [Author's italics].

[104] J. Piaget, 'Pour l'immanence', op.cit., pp. 151-152.

[105] See note 65 and : P. Bovet, *Un siècle de l'histoire de Grandchamp: entre la fabrique d'indiennes et la communauté spirituelle.* Citta di Castello, Tiferno, 1965. J.-P. Mouchet, *L'école secondaire de Boudry-Cortaillod. Grandchamp, 1876-1967.* Boudry (Neuchâtel), La baconnière, 1967. We are grateful to Sister Irmtraud of the Evangelical Community of Grandchamp for this reference. See also G. de Rougemont and G. Bovet with the participation of M. Bovet, *La geste des Bovet de Grandchamp,* Boudry (Neuchâtel), Baillod, 1992.

[106] J. Piaget, *Recherche,* op.cit., p. 116.

[107] Ibid*.,* p. 117.

[108] But this fact should not let us forget the contacts between the two milieus. Claparède's wife was Russian and she may have contributed to Vygotsky's awareness of Jean Piaget's early works, which were quickly translated into Russian.

[109] Does one not find traces of intellectual transactions that bore the Piagetian model? 'Give me your point of view and I will give you mine; we will judge the respective values and reach an agreement'- one could say.

[110] Certainly Piaget recognized the importance of the socialization of individual thought through interaction with peers. But it is always the subject's own initial thought that evolves and is not a matter of 'collective interventions' or resolving 'socio-cognitive conflicts'. It is for this reason that we think that the Piagetian model remains centred on the *ego.*

[5] A.-N. Perret-Clermont et al, *Thinking Time : A Multidisciplinary Perspective on Time*, Paris, L'Harmattan, 2005.

[112] R. Hinde, A.-N. Perret-Clermont and J. Stevenson-Hinder (eds.) *Social Relationships and Cognitive Development,* Oxford, Oxford University Press, 1985. M. Grossen and A.-N. Perret-Clermont (direction), *L'espace thérapeutique, Cadres et contextes,* Neuchâtel and Paris, Delachaux & Niestlé, 1992.

[113]C. Hoyles and E. Forman (eds.), 'Processes and Products of Collaborative Problem Solving', *Cognition and Instruction,* special issue, 1995, 13, 4, pp. 479-587.

[114] Piaget, *Recherche,* op.cit., pp. 117-118.