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Identificatory Processes and Relation with Mathematical Knowledge

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"Amener à la lumière ce qui est voilé, ou aider l'autre à arriver à la lumière, transférer sa propre expérience analytique d'une autre façon dans l'abîme d'autrui, pour pouvoir réaliser, par l'intermédiaire d'un 'échange', un commerce d'expérience, expérience de l'inconnu. Chaque recherche vécue est pénible et douloureuse mais est aussi plaisante si elle devient une découverte, un nouveau point de départ, une nouvelle perspective à partir de laquelle on peut 'revoir' la même chose d'une autre manière. Cette découverte signifie 'être frappé', avoir une image de la chose 'dé-voilée' ... Voir signifie aussi acquérir une nouvelle perspective à travers laquelle on peut 'réfléchir' le 'passage' entre ce qui apparaît, et ce qui est caché, refoulé ou nié; voir signifie enfin retrouver les lieux où l'abîme, le 'vide' sans fond montre la présence d'une absence : le vide occupe l'espace de l'absence quand le manque de l'objet devient insupportable".

L'expérience psychotique Salomon Resnik

When Eva Bayer contacted me the first time, around six months ago, by telephone, I was immediately hooked by the request she made of me. Today, looking back, I can say that I consented on the spot, irreversibly, no matter what would happen after.

What had I consented to ?

At a manifest level, the fact that she had asked me, rather than any male or female psychoanalyst, attracted me, in that the path of my academic career intersects both mathematics and psychoanalysis. Her choice reinforced my feeling of having always been viscerally concerned with the issue "women and math". Through this exterior sollicitation, I have the opportunity to face this question directly, perhaps for the first time, without putting it off as I have been doing for the past twenty years. The time has come.

At another level, a latent one, which I can understand today, from a certain distance in time, I can say that the sound of Eva's voice had a lot to do with my consent.

A voice which said : "I am a mathematician" and, at the same time, sounded deliciously feminine. A voice that had no face yet for me. I had never met her before.

And then there was her over-feminized firstname : **Eve-a** . I think that was all it took for me to establish, in a few seconds, a relationship that I would call a **transference**, inside of which I could project, onto an idealized feminine image, that part of myself which has never come to existence, that part of myself which is "woman **and** mathematician". A relationship which allowed flexible circulation of the identificatory processes : projection / introjection; a link, a concrete metaphor, for which was the telephone line, which carried our two voices.

Now, this voice, coming back towards me, making this request, projected onto me the competence to respond to it. In other words, this voice, with this projection, allowed me to consolidate that part of me, "woman and researcher", which, I hope, I have brought to existence. Right from the start, a certain fluidity of the identificatory movements, back and forth, assured a creative, fertile dynamic. Meeting her in the flesh didn't change any of this. And then, there was Catherine ... but I need say no more.

This preface indicates that I think it's impossible to seriously consider the question of identificatory models without getting personally involved with it. Jean Florence, a French psychoanalyst who wrote a book about Identifications said : "Someone who speaks about identifications mobilizes his own identifications, and, at the same time, his ideals, with all their accompanying effects, which are sometimes tyrannical". Which made me think that, a theoretical or technical talk on this subject, disconnected from our own experience, would be meaningless for you. So, I will use a clinical case as an example; and, to avoid entering into complex ethical problems, this subject will be myself. Moreover, in my case, the destiny of the woman mathematician was not fulfilled - I have become only a math teacher, and I gave it up three months ago at that, I am now a professor of Education - if we follow a Freudian methodological approach, we will have a better chance of understanding the processes at work, by contrasting normal functioning with dysfunctional cases, and to discern the

underlying mechanisms involved. In the words of Jean Florence again, " it is completely impossible to have direct access to any representation of what's normal. The psychic personality only reveals its structure and the quirks of its development thanks to the cracks, disjunctments and dismemberments produced by pathological processes (...) from the tiniest daily slip ups to the most serious personality splits in psychotic experiences" or, as Philippe Jeammet, another well known psychoanalyst specialized in adolescence, said : "as always, in the field of psychopathology, we can discern mechanisms which are masked by the silence of normal development through deviant behavior".

Here, I would like to note that my methodology is not my own, that one of the characteristics of the clinical approach in the Human Sciences - and particularly in the field of Education - is to take into account the interaction of the researcher with the object of his research, his personal involvement with it, in the words of Georges Devereux, his counter transference. His reactions of anxiety or the setting off of his defense mechanisms is very common in these fields, where the object of the research is none other than a human subject, the other. And here, in working on the question of identificatory processes, which I was asked to speak about, this problem is even more intense. It seemed evident to me that I could only do this work in a concentric way, using myself as a starting point - the case which I know the best, as I have had the opportunity to reflect on it in the course of many years of psychoanalytic work - and expanding it to several close women friends at first and to other women later on. Only if I can gather adequate material for my purposes can I do this work. I need a minimum of one to three detailed interviews to reconstruct the history of the subject, on the one hand, the origin of her relation with mathematical knowledge and, on the other hand, the succession of the identificatory rearrangements, all this linked with the construction of her professional identity.

It just so happened that, about a year ago, I received my qualification to direct educational research, for which I had to write a report, summing up my last ten years of research. In this report, I included my own academic history. In preparing the oral part of my doctoral dissertation, I wrote the following.

I found the question of the search for a subjective sexual identity, with the succession of identificatory models and its dead ends, throughout the text. Starting in the primary school where my mother was the teacher of a class of young children, to the three highschools I attended : the highschool for young girls I had to leave to be able to really do math; and the two successive boys highschools where, as an alien feminine presence, I had come to study "mathématiques supérieures" (advanced mathematics) first, and "mathématiques spéciales" (post-advanced math) afterwards. There I did not understand anything anymore about math or rather, as I wrote in my report, I used math in a certain way and let a deep split develop in me which allowed only a false personality to be visible by a paradoxal success in math.

To give you an idea of what was happening, here is a sample of writing that I found in a little notebook from when I was seven. This notebook is filled with calligraphy exercises, in violet ink, where the teacher, my mother, had asked me and the whole class, I imagine, to copy the following sentences. A copying assignment involving question and answer at the same time :

"Why are girls afraid of addition ?

Girls are more afraid of addition because they don't manage as well ... ", and the teacher had written, in red ink, to complete the unfinished sentence "**as boys**". Which gives : "because they don't manage as well as boys". The teacher, my mother, had also underlined the spelling mistake which had visibly prevented me from finishing the sentence: the absence of an "s" for the plural of "elle" : I had written "elle réussissent moins bien", showing this singular "elle" was really me, the only girl, and I refused to lock myself into this written words.

Today, how can I not interpret this as an extraordinary summary symbolizing this challenge which I am still trying to meet or perhaps this forbidden zone which I couldn't cross, established by a woman who was also my mother. At the same time, it represents the unequalable power of a question which can end up mobilizing the energy of a lifetime of research.

How can I not see, that I had been a good student in math in the girlschool, specially when our teacher, miss M., walked with her long casual steps up to her desk, shaking off the dust of the girls highschool, to sit down on it. Her dynamism and her happiness made me think that being a woman **and** a math teacher could open a door to unlimited freedom. But, how can I

not see, at the same time, that it took only two years in the boys highschools and two male math teachers to erase this image of free femininity and to turn me into a sort of little goat as in the famous French tale : "La petite chèvre de Monsieur Seguin", who, not having been gobbled up at the dawn of the advanced math class would be eaten up little by little, invisibly, from the inside, in the course of the year. This class had a didactic scene resembling a three ring circus in which the teacher, Mr K., instead of using mathematical didactic science, used above all the tricks of a magician to train the intelligent animals that we had become for the circumstance.

And this is where the good student turned into an insufficient one, not good enough to compete with the boys.

Fortunately, college rescued me, and I had some successes in math there, paradoxal successes in that, at the same time, they deprived me of a voice. These successes, however, made others believe in me enough that I ended up teaching math in the same college, and here, I was oscillating between two role models of math teachers : Miss M. and Mr K.

To paraphrase Didier Anzieu, who doesn't hesitate to write openly about his so called "choice" to become a psychoanalyst : "I have become a psychoanalyst to treat my mother, I mean to treat my mother in me and in others, to treat in them this mother both threatening and threatened", as for me, I could say : I have become a researcher to treat the math teacher, the math teacher in me and in others, to treat in them this math teacher both threatening and threatened".

If I return once again to the anecdote of the primary school which I spoke about, beyond the particulars of my story, I can already see the phenomena which I'm interested in today unfolding through what could seem to be a simple writing assignment, according to the cultural and pedagogical norms of that time. These are phenomena of mutual dependence between teachers and pupils (today we would say teachers and students). The teacher, through a didactically reasonable and reasoned activity, which is offered to the student, communicates, **despite herself**, something entirely different : something that her will to transmit knowledge, here writing, **is not aware of**. I see in this will the grip characteristic of the pedagogical act of him or her who hopes to leave an impression, instill certain behavior and who, when positive

identification doesn't take, creates resistance in the student, resistance which is surely not cognitive. Even as the young pupil that I was, conscientious and serious, I couldn't finish the sentence, rebelling at the written words, but without any alternative, as a student, other than to do this written assignment badly and to make a spelling mistake, even though I was the best in the class at dictations. Of course, here, the dynamic of the exchange gets a little more complicated, only a little more than it already is, considering the parental link, more than symbolic which connected me to the teacher.

In this "mathématiques supérieures" class, which I spoke about earlier, there was no other alternative for the student, who rebelled against what it is that excluded her from her own identity, than refusing to understand, and playing a false role, at the risk of falling into dissociative pathology.

Today, I would suggest a new way of reading this history, in terms of identificatory conflicts : a conflict between paternal and maternal identifications, a conflict which masks, in fact, masculine and feminine identifications. I will hypothesize that Miss M. represented for me what Mrs Piera Aulagnier has called "an identificatory compromise". This compromise, which was acceptable for me during adolescence, unfortunately did not survive my entry into the extra-familial world. Everything shifted with Mr K. : the only solution was the pathological one, the split.

Math could no longer be the place where masculine and feminine identifications could meet, not even as the place of compromise.

This is how I became a math teacher. The investment in this object of knowledge has become sterile for me : I could pretend, and use it for a certain social valorization, but for me, its genuine creative aspect has died. The identificatory movements were stuck and I needed psychoanalysis to find my way out.

I will now move on to a more theoretical part of my talk and I'll come back to the case briefly at the end.

It's a challenge to want to enter psychoanalytic theory through this door, that of identification. "In all of psychoanalytic theory, there is no field which is more confused, more exasperating for the reader than that of the theory of identifications. You have the impression in reading the incredible proliferation of presumed technical terms that you see emerging in publication, that the list of labeled identifications will never end", according to G r me Taillandier, in his preface to the book "Identifications" published by Deno l. This collective book which brings together diverse articles, has an index at the end, which lists the occurrences of the term "identification", qualified by an adjective. They are fifty seven items in this list. Although, the book has "From Freud to Lacan" as a subtitle, he doesn't, at all, refer to the Anglo-Saxon movement of psychoanalysis, which is **my main frame of reference**. This school includes Melanie Klein, Hanna Segal, Donald Winnicott, Wilfrid Bion, Herbert Rosenfeld and Salomon Resnik. Florence B goin-Guignard, who's has worked on identifications in this point of view, for the past ten years, will be my main guide. Daniel Wildl cher, in opening the debate of the Metz'Conference, in March 1990, which brought together speakers from different schools of psychoanalysis, was looking for common themes in the different presentations. He went back to Freud for this and emphasized that identification is not a simple imitation. It consists of a movement of appropriation and tries to fulfill an unconscious aim. It constitutes a means of expression for unconscious fantasy. This is also what we understand from the fairly simple definition which the Vocabulaire by Laplanche and Pontalis gives us : "The psychological process through which a subject assimilates an aspect, a property, an attribute of the other and is totally or partially transformed, following this model. The personality is constituted and differentiated by a series of identifications".

This definition sets the tone. It is not a pathological process a priori, but, on the contrary, the structuring value of the process is brought to light.

According to Octave Mannoni, Freud considers the Ego as an onion composed of successive layers of identifications. But we must keep in mind that the identification process is an unconscious one and is therefore observable only in an indirect way. "It becomes conscious", as this author emphasizes, "only in a movement of disidentification". "At the moment of

disidentification, the subject remains, in a certain way of speaking, marked - for life - by certain personality characteristics".

This is where I will introduce the only differentiation - or simple typology - in the identifications taken from the theories inspired by the work of Melanie Klein (¹). I will speak about two kinds of identifications, **projective identifications and introjective identifications**. These movements are similar to the centrifugal and centripetal dichotomy.

In the Kleinian paradigm, this double movement, projective and introjective, constitutes the internal world of the subject. For Mrs Klein, the young child passes first through a position which she calls "the paranoid-schizoid position" in which the object, the breast, - essentially during the first four months - of life, is split into "good" and "bad". These two aspects of the object acquire a certain autonomy relative to each other, which permits the subject to project his love and hate.

This position is transformed later on into a position she calls "the depressive position", in which the split of the object diminishes and the introjection of a total object, at the same time good and bad, comes to constitute the ego of the subject. This ambivalence is more and more easily tolerated as time goes by, and the use of the splitting processes and projections becomes less frequent. But these two positions are never totally given up by the adult subject and can be reactivated according at very stages in life or when exterior elements trouble the subject. For Florence Bégoin-Guignard, "this interplay of introjections and projections constitutes right from birth, the breath of life of the psyche itself". But it is possible nonetheless to identify several key moments (seven, in fact, for a woman) in the evolution of the individual. In particular, she identifies what she calls "the space of puberty and primary adolescence", where a certain number of projective identifications linked to sexual identity and having remained "floating" until then, are probably transformed from that point on into introjective identifications, which enrich the character and the capacities of the Ego". Finally, every stage of life which carries the potential for change is one of these key moments. She thinks that each one of these stages of human life is an opportunity for the growth or

¹ I could have presented to you Freudian theory, then Lacanian theory and finally Kleinian theory but I thought that for a first approach to this subject, this would be confusing. Please note however that each of these theories has its own distinct typology of identifications.

regression of psychic space. It seems that adolescence is the period in which identificatory problems are the most decisive, concerning the formation of professional identity and where, at the same time, sexual identifications which are still floating at this point can consolidate. In fact, introjective identifications are the building blocks of psychic growth. Concerning the problems specific to adolescence, according to Philippe Jeammet, "adolescence acts as a revelation and an interrogation of the quality of our identifications". In particular, it's the moment when the subject, having to assume a determined sexual identification, must also find his independence from his parents. It's a period in which we see "a real resurfacing of what had been repressed with potentially traumatic effects. "

Up to this point, I have given you an overview of the identificatory processes. Now let's get to the core of our reflection. How are the choice of investing mathematical knowledge during the evolution of his identificatory processes and the choice of sexual identity linked ? For me, following the work of Jacky Beillerot, the relation of a subject with knowledge - le rapport au savoir d'un sujet - means "a creative process for thinking and acting, making every subject a creator of knowledge". According to this interpretation, the history of the genesis of the relation of a subject with particular knowledge, here mathematical knowledge, is interwoven with the entire development of his personality. The subject is formed at the same time as his relation with this knowledge is constructed. In the words of Jacky Beillerot, "the relation with knowledge of an adult is like a sort of summary of his psychic history". It is thus logical that throughout the temporal dynamic of a subject, if we retrace the history of his investment of the mathematical object and that of his choice of this object in the construction of his professional project, we inevitably encounter the history of his identificatory models.

First of all, it's possible to find in the genealogy of the family, the first models which were the identificatory supports, in other words, those men or women, who had the attribute of mathematical knowledge, which the subject was able to acquire in his movement of appropriation. We can also see how, during adolescence, at the moment of leaving the world of the family, this identification will become stronger or will slowly crumble and disappear, perhaps through certain encounters and pedagogical transferences on teachers. The crucial

question for us becomes : will this choice of identification cause a conflict at the level of masculine and feminine images, in other words, at the level of sexual identity, or, conversely, will there sufficient coherence ?

I will hypothesize that, for our generation of women, for us, we could, in most cases, only come to a situation of conflict, given the lack of female role models, women math researchers. When the role models who have the attribute of mathematical knowledge are masculine, a conflict situation results for us. I see three ways to deal with this.

- We can keep the investment of the mathematical object and in this case, take the risk of problems with feminine identity.
- We can give up math in a certain way, as the price to pay for the preservation of feminine identity.
- Or, fortunately, in certain cases, like your own I'm sure, we can find an acceptable balance in compromise. Analysing your histories is of the utmost importance in order to understand the bases on which this compromise was built.

With regard to teaching, given the feminization of the profession, it's a little less dramatic today. But, the conjuncture of being, at the same time, at the University, in the field of math, being a researcher and a woman, can only be relatively exceptionnal. In my opinion, this conjuncture implies that, in the family genealogy, there had already been women university professors, mother or grandmother, as in the cases of Eva and Dusa Mac Duff, if I'm not mistaken, and that, the identificatory supports having the attribute of mathematics don't cause too many conflicts between masculine and feminine images.

If I come back to my own case, regarding my school teacher parents and my lower class grandparents, the profession of researcher, one of creation, did not exist. Nor did the profession of University teacher, perhaps to a lesser degree, as it could be represented by extension while that of the researcher is irrepresentable for ourself and our family. It exists only for others. Moreover, mathematical knowledge having been characterised from the start, as masculine, by my mother, we can understand how it was impossible for me "to escape from

the fixation-trap in the identifications defined by my family structure", in the words of Jean-Yves Rochex, in his work, entitled "Learning Activities and Identificatory Processes".

Of course, above and beyond what I have told you, my story is a bit more complicated than it appears to be. Nevertheless, its underlying complexity does not invalidate the superficial schema I have tried to describe and which clearly illustrates the problematic of identificatory conflict about the object of mathematical knowledge for a woman, on this day, December 11th 1991.

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