

# Teacher and Students: Setting Up the Transference

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The interplay between psychoanalysis and mathematical education has come to the surface over the last decade and is a subject of growing interest (Blanchard-Laville, 1992; Brown *et al.*, 1993; Blanchard-Laville, 1997; Baldino and Cabral, 1998, 1999; Cabral, 1998; Berdot *et al.*, 2001)

Blanchard-Laville (1997) observed unconscious phenomena which are present in the classroom to give a frame from a psychoanalytical perspective based on what she calls “didactic transference” The idea is to describe the way that the teacher establishes his/her relation to knowledge in a didactic context, within the transference situation he/she promotes. Blanchard-Laville concludes that the teacher transmits to the students the trauma suffered during his/her own mathematical learning, without being aware of it. Berdot *et al.* (2001) also explore the idea of improving teachers’ performance in the classroom, by focusing on the institutional demands and on mathematical knowledge in relation to the teacher’s knowledge. They conclude that:

teachers can feel assaulted in the foundations of their relation with knowledge by certain institutional choices (p. 5)

We can see that considering not only the cognitive aspects but also the subjective processes that are present in the classroom provides a new dimension of research, one bringing out another vision about learning phenomena. It is our intention to look into the classroom to observe the learning process by relying on information from psychoanalytical theory. We emphasize that, as teachers, we are not trying to play the role of ‘the analyst’, nor are we trying to analyze the students. Our intention is to have psychoanalysis in the background, supporting our view of the learning process and providing us with a framework through which to interpret it.

It is a characteristic of traditional teaching, especially in mathematics, that the teacher assumes the position of the master, the one who knows, and the student takes the position of the one who learns (Baldino and Cabral, 1998). This view induces us to consider *transference* [1] in the classroom and to scrutinize the transference process with the help of psychoanalytical theory, in order to elicit some features of the didactical-pedagogical process.

Initially, transference has its common-sense meaning, “[it] is usually represented as an affect” (Lacan, 1979, p. 123). Lacan subsequently points out that:

The transference is a phenomenon in which subject and psycho-analyst are both included [...] The transference is an essential phenomenon, bound up with desire as the nodal phenomenon of the human being – and it was discovered long before Freud (p. 231)

Lacan observes transference had already been written about in Plato’s *Symposium*, when Plato reports Socrates as never claiming “to know anything except on the subject of Eros, that is to say, desire” (p. 232). Not being refuted by others, Socrates is thereby put in the position of the one who knows. Lacan continues:

As soon as the subject who is supposed to know [*le sujet supposé savoir*] exists somewhere [...] there is transference [...] Who can feel himself fully invested by this subject who is supposed to know? This is not the question. The question is, first, for each subject, where he takes his bearings from when applying to the subject who is supposed to know. Whenever this function may be, for the subject, embodied in some individual, whether or not an analyst, this transference, according to the definition I have given you of it, is established (pp. 232-233)

The atmosphere of the class encourages the teacher to take the position of the one who knows (or who is presumed to know), the *sujet supposé savoir*; the one whose knowledge is not restricted to the topics of the discipline in question, but extends to proper procedures for dealing with them, how to speak about them, how to study them and even what *cannot* be said about them. This imposition on the language, typical in early mathematics courses, surpasses its field, pervading students’ other attitudes. After the first moment, everyone takes their expected places in the scene – the teacher speaks, the students listen – the transference is already taking place.

According to Lacan, the unconscious is not a hidden dimension inside the individual as common sense would have us believe: “The unconscious is constituted by the effects of speech on the subject” (p. 149), it has to be looked for ‘outside’, it is:

the dimension in which the subject is determined in the development of the effects of speech on the subject, consequently the unconscious is *structured like a language*. (p. 149; *our emphasis*)

Then the transference is said to *function through the unconscious*, because it allows access to the unconscious, it regulates the opening and shutting of the hatch through which the subject’s unconscious dimension manifests itself.

The subject of the unconscious, that Lacan indicates in the function of the French pronoun *Je*, as distinct from *moi*, manifests itself when the subject speaks: that is, in transference. The unconscious manifests itself in default of, and beyond or in opposition to, what the subject would like

his or her listeners to understand. Such manifestations point to a subject who is indeterminate because s/he oscillates around her/his desire, generally between what s/he says and what s/he does, as if there were something lacking in her/him: “the transference is the enactment of the reality of the unconscious” (p 146).

In order to focus on the transference occurring in the classroom, we have further to consider what Lacan calls *imaginary* and *symbolic identification*. These identifications regulate the transference and, as concepts, allow us to recognize to whom or to what kind of listener the subject presumes he is speaking. The subject imagines that he is representing a party of particular regard to the Other and he acts in order to appear worthy of being loved in this regard. This presumed regard to which the subject tries to show himself as worthy of love is referred to as the imaginary identification trait. The subject’s commitments stated through his speech indicate to which group he is willing to belong and to strengthen. Such commitment is also a kind of regard: the subject tries to appear worthy of love to himself. The focus of such commitment is called the symbolic identification trait.

The relation between imaginary and symbolic identification – between the ideal ego [*Idealich*] and the ego-ideal [*Ich-Ideal*] – is [...] that between ‘constituted’ and ‘constitutive’ identification: to put it simply, imaginary identification is identification with the image in which we appear likeable to ourselves, with the image representing ‘what we would like to be’, and symbolic identification, identification with the very place *from where* we are being observed, *from where* we look at ourselves so that we appear to ourselves likeable, worthy of love (Zizek, 1989, p 105)

Lacan’s (1979) titular *Four Fundamental Concepts of Psycho-Analysis* are: *transference*, *instinct* (*Trieb* in German), *repetition* and *the unconscious*. Although these concepts are inseparable, in this article we will consider only transference, from the perspective of identification traits. We will illustrate our considerations with two examples. They are fragments from the same classroom, where the position of *sujet supposé savoir* was ascribed to the teacher

### First moment

This dialogue took place between one of the authors and a senior undergraduate mathematics student, Tomas. The author had been introduced to Tomas’ mathematical analysis class as a Ph.D. student in mathematics education interested in investigating how students develop proofs. The majority of Tomas’ teachers, as well as the tutor of this class, were mathematicians with Ph.D.s in mathematics, currently carrying out mathematical research. Tomas performs well as a student; he is being initiated into research in partial differential equations guided by a professor.

Ana: Hi! I missed the last two classes. Could you tell me what the subject was?

Tomas: I was absent also, but I got it from Jane. The teacher talked about uniform continuity and a little bit about derivatives

Ana: Ah! [He passes me his notes and I take a look at them.] This stuff about uniform continuity is a very important topic. [...]

Tomas: [Kind of surprised] Are you doing your Ph.D. in education?

Ana: In mathematics education

Tomas: But, you do have a masters degree in mathematics, don’t you?

Ana: [Casually] In partial differential equations.

### Interpretation of the first moment

A first and superficial impression could be as follows: with her remark about the importance of uniform continuity, Ana takes the position of the one who knows (*sujet supposé savoir*). Tomas checks whether Ana has a mathematics degree in order to make sure that hers is a legitimate position to which his image as a mathematics student may be worthy of love (imaginary identification). As a mathematics educator, she would not have such legitimacy. Ana assures Tomas that his expectation is granted, so that both can occupy the position of would-be mathematicians, committed to enhancing the community of academics to which they both belong (symbolic identification).

However, Zizek (1989) warns us against our inclination to think about identifications in a positive way as being “ideal models to be followed”, such as the model of the mathematics student and the model of the academic community. This kind of thinking leads us to two mistakes: first, we are led to ignore the fact that traits can be made on the basis of some deficiency, like a fault, a weakness, guilt or fear; secondly, we are led to ignore the fact that imaginary identification is always turned towards a certain regard of the Other.

So, apropos of every imitation of a model-image, apropos of every ‘playing a role’, the question to ask is: *for whom* is the subject enacting this role? (p 106)

This remark inverts the perspective of the interpretation above: to whom, to whose regard is Tomas trying to show himself? The one-who-knows is not the source of transference, it is not a pre-established position from which the transference would be a consequence. On the contrary, the one-who-knows *is a result* of the subject’s attempt to establish the regard of the Other to whom he wants to play a particular role.

We understand the caution in Tomas’ conversation, his care about who may give opinions about mathematics, within the *imaginary identification*: he thinks this is the behavior of one who ‘studies mathematics’, of one who ‘talks about mathematics’, of one who ‘knows mathematics’. This attitude will permit him to be loved in the ‘Other’s eyes’ – be it his teacher, the academic community or other students. He has incorporated this caution over the years, an attitude perceived in his teachers, which he shares with his colleagues.

On the other hand, the *symbolic identification* is apparent when mathematics is deified, ranked as a science inaccessible to most; this will leave Tomas at peace with himself, will justify his own pains and make sure he is on the right track. In his thinking, few can issue respectable opinions

about his adequacy. In order for Tomas to continue liking himself, he has to be certain that few can do what he can

Where is the transference? It reveals itself precisely in these attitudes that the subject will choose in the face of extraordinary situations. According to this interpretation, the imaginary identification trait is the potential failure characteristic of mathematical activity and the symbolic identification trait is the commitment not to expose this failure publicly. As we said, we are not interested in psychoanalyzing the student nor the situation, but only in showing how Lacanian theory can open doors for further investigation and provide a basis for pedagogical decisions.

## Second moment

We report on the same classroom, the same group of students, the same teacher and the same observer.

There is a result in calculus that guarantees when you give a two-sided cluster point  $a$ , if a function  $f$  has a positive derivative at  $a$ , then there is an interval containing  $a$ , such that for all  $x$  and  $y$  satisfying  $a - d < x < a < y < a + d$ , we have  $f(x) < f(a) < f(y)$ . The teacher looked excited when talking about this topic because *positive derivative* is usually thought to imply that  $f$  is increasing in a neighborhood of  $a$ .

Note that it is important that  $a$  be between  $x$  and  $y$ ; for without this condition, you cannot guarantee that  $x < y$  implies  $f(x) < f(y)$ . I will give you an example so that, if someone says ‘ $f$  has a positive derivative implies  $f$  is increasing’, you may reproduce it and show how clever you are.

If  $f$  is continuous at  $a$ , then one has  $f$  increasing in a neighborhood of  $a$ , but in general  $f'(a) > 0$  implies only that  $f(x) < f(a)$ , for  $x < a$ ,  $x$  near  $a$ , and that  $f(x) > f(a)$ , for  $x > a$ ,  $x$  near  $a$ . The discussion is subtle, especially for undergraduate students, who mostly do not care about the ellipsis in ‘ $f$  positive derivative implies  $f$  increasing’.

Our point is that this sophistication matters, not only *per se*, but also to classify students as performing well or not (that is, to ‘show how clever you are’).

## Interpretation of the second moment

The student’s first reaction was a moderate smile, amused at the opportunity to ‘look clever’ in the Other’s eyes, an evident situation of imaginary identification: “if I am like that, they are going to love me”. Identify himself with the master, become equal to him, be loved by him: this is the transference already established. The students’ attention is always fixed on what they believe should be the right answer in the face of the possible classification of being a *good* or *bad* student. According to Cabral (2001):

The student becomes a subject by identifying himself with a certain image, through traits that he perceives constitute the ‘good student’, who knows the answer the teacher wants to hear. (p. 115)

The student learns that the teacher has knowledge – and it is not restricted to mathematics. It also allows the teacher to tell ‘good’ from ‘bad’.

In a traditional classroom, the position of *sujet supposé savoir* is captive to the teacher and in this setting transference

and identification processes flourish. For it is the teacher who determines the sequence of theorems, proofs, examples and exercises. It is the teacher who chooses when it is time to speak and when it is time to stay quiet; it is the teacher who will invite someone to participate, who asks the questions and, most of the time, who gives the answers. The teacher says what one has to study and how: “when studying, you have to consider all possible cases”. The teacher speaks: *the teacher learns*.

Many students have the ability to give the answer the teacher was expecting. Though some may be aware that these students might not have understood the point, teachers do feel content in the face of these drillings.

## Final remarks

We think that the learning process rests heavily on the ability of speech, so we recommend placing students more and more in the position of speaking. Not happy with prompt, correct answers, we confront our students with further related questions trying to establish if they have fairly consistent knowledge. We rely on this strategy to judge whether right answers mean student understanding.

To conclude, we state how the transference process would take place in our classroom. At first, the teacher would not avoid the role of *sujet supposé savoir*, so that it can be established and identified by the students. Transference allows for confident communication from the student to the teacher, so that the former will feel capable of dealing with the mathematical objects without fear of making mistakes; of speaking, without searching for ideal models.

The goal, however, is change of status: the teacher would eventually leave his or her former captive position of *sujet supposé savoir*, leaving the students with the possibility of confronting their doubts, so that they can come to their own answers. From this perspective, the teacher is responsible for helping in the search for directions to *right* answers, but is not the provider of certainty at each step of the students’ thinking. Upon speaking, students have a chance to be actively involved in their learning.

## Note

[1] In this article *transference* refers to a Lacanian concept: in particular, its meaning differs from that of Blanchard-Laville, for whom *transference* involves something that is transmitted by the teacher to his or her students.

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