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“Statistics? Forget those old ladies!!”

Exploring the nonsense of Mathematics Education

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ABSTRACT: The objective of this chapter is to develop a reflection on mathematics education (ME) from a socio-political perspective, through the exploration of a parody of ME using episodes from a Mexican sitcom. Different vignettes from the sitcom, consisting of absurd, *nonsensical* dialogues and situations of a fictional mathematics classroom, will be described, analyzed and used as illustrations of socio-political issues previously explored in ME research (MER). These illustrations allow for a reflection on the public perception of ME as a social practice. Elements from Deleuze’s *The Logic of Sense* will be used to analyze the scenes. One of the conclusions is that this farcical depiction of the mathematics classroom constitutes both a critique and an acceptance of established ME practices, pointing towards an ambivalence in the way the general public perceives this school subject/social practice. Throughout the text, the value that this depiction of ME could have for suggesting new questions and insights for future research will be explored.

Keywords: socio-political dimensions of mathematics education, Deleuze, nonsense, humour, popular culture

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Introduction

In a column called “Religion as a Formality” (“The Illustrated London News” 1914), British writer G.K. Chesterton states that popular education is in fact extremely unpopular. This statement clearly applies to the specific case of mathematics education (ME), one of the most unpopular subjects of popular education. ME is a compulsory subject of compulsory education and has been so for most of the 20th century in much of the world. As a result, a significant portion of the worldwide adult population has personal experience with ME. This popular dissemination of mathematics has been documented in popular culture, through TV shows, films, popular science books, social networks and internet memes. In these depictions, mathematics is often caricatured, offering an image of this science different from the professional and scientific one.

The importance of considering mathematics education as part of a social network, beyond the walls of the classroom and the interactions between teachers and students, was first elaborated by Paola Valero (e.g. 2010). Valero’s work suggests that in order to have a rich and robust understanding of school mathematics, it is not enough to study what is happening inside the classroom. One needs to also pay attention to what she calls the *network of social practices of ME*, which include “mass media practices and the construction of public views and discourses of mathematics” (Valero 2010, p. 17). In this chapter I explore the way in which mathematics is represented in a comedic Mexican TV sitcom. In *The Logic of Sense* (1969), Deleuze (p. 145-146) suggests that humor can help us descend from the platonic Ideas to the pure display, by substituting the Idea with a designation. For MER, instead of ascending from the examples to the ideal model, discarding everything that does not fit in, a humorous approach can help us descend from ideal models to unrefined and uncompromised examples and cases. According to Deleuze,

humor is [*the coextensivity of*] *sense and nonsense*; humor is the art of surfaces and folds, the nomadic singularities and the random point always displaced, the art of static genesis, the savoir-faire of the pure event or the “fourth person singular”; *every significance, designation and manifestation is suspended, every deepness and highness abolished* (Deleuze 1969, p.151, my emphasis).

It is my contention that a humorous, farcical approach to ME from popular culture has the potential to disorder some of the dominant narratives in MER. It also offers the opportunity to confront MER with public perception(s) of mathematics education, which can be very different from dominant narratives in MER of “an imaginary world where mathematics can be an adventure into knowledge, the ultimate problem solving technology or the most crucial component of critical citizenship” (Pais 2017, p. 61).

Why should we pay attention to an exaggeration, a caricature of a mathematics classroom, proposed in a TV show, developed completely outside the established frameworks of MER? We can answer with another question: what can be said about the representations that mainstream MER proposes about the real classroom? Are they not also extremely inaccurate and simplified, or even more, invented and merely hypothetical? The “prototypical mathematics classroom” (Skovsmose 2011) and the “didactic triad” (Valero 2010) are prevalent and long-lived conceptual frameworks within MER. Many developments, regulations and innovations, and a large industry of literature have been based off of these oversimplifications of MER. Here I would like to entertain another oversimplification (that at least does not take itself so seriously).

In each section of this chapter I describe a scene or transcribe a selected dialogue of the Mexican sitcom, and then offer a reflection linking the farcical situation depicted with some of the prevalent ideas and perspectives proposed in the research literature on the socio-political dimensions of ME. The vignettes will be used as both illustrations of issues explored in research and as “food for thought” for addressing the challenge of understanding public perception of ME; and, more generally, the socio-political nature of ME phenomena. I suggest that addressing the way(s) that mathematics is depicted in popular culture could offer researchers fruitful insights and ideas. The artist, the comedian, and sometimes the “layman”—by simple common sense, and by not being bonded by theoretical assumptions and other societal norms—can have a broader view of the phenomena than the limited gaze of the specialist.

About “El Chavo del Ocho”

The TV sitcom called “El Chavo del Ocho” (roughly translated as “The Kid from n^o8”), originally from Mexico, was hugely popular during the 70’s throughout Latin America.

The credited author of the series was Mexican writer and actor Roberto Gómez Bolaños, popularly known as “Chespirito”. The series is a farcical show that centers on the humorous and touching adventures of an 8 year-old orphan boy, “El Chavo”, played by Chespirito, and the peculiar inhabitants of “La Vecindad” (Spanish word for “neighborhood”), a low-income housing complex. The series depicts different critical social issues, such as poverty and hunger, inequality, unemployment, and class struggle. The main comedic techniques that Chesperito employs are double-sense, literal (mis)interpretation, catch phrases, running gags and physical comedy. Much like *The Simpsons*, the characters never age, and situations stay largely the same over time. Both the children and adult characters are played by adult actors.

Several episodes are set in a fictional school, where all the child characters are students in the same classroom. The sitcom parodies the day-to-day situations of the public school, the relationships between students and teacher, the socio-economic and cultural differences, and also the contents of the different subjects. At the same time, “El Chavo del Ocho” makes more general humorous and self-deprecating commentary on the Mexican society and culture.

Besides El Chavo, the other main and recurrent characters are “Quico”, a 9 year-old boy, both a close friend and a frequent rival of El Chavo; “Doña Florinda”, Quico’s mom; “la Chilindrina”, a smart and mischievous 8 year-old girl; and “Don Ramón”, the jobless and widower father of Chilindrina. Recurrent characters who do not live in La Vecindad are “Señor Barriga”, the overweight landlord to whom Don Ramón is eternally indebted; “Ñoño”, the equally overweight young son of Señor Barriga; and “Popis”, a young girl, the goddaughter of “Doña Florinda”.

Last but not least, we have the teacher, “Profesor Jirafales”, which can roughly be translated as “Professor Giraffeson”, as he is indeed a tall and imposing figure, with a moustache. He is a cultivated person, with a good socio-economic status, and proud posture. Profesor Jirafales barely hides a certain disdainful and patronizing attitude towards the children, even if he looks caring, as well. His romantic interest is Doña Florinda, the mom of Quico, also one of his students. He also frequently smokes large cigars, even in the classroom.

“El Chavo” can be considered a mainstream television show, and its depiction of poverty and social inequalities has been criticized as being complicit to and revealing of the “ideological background of certain mercantile conception of mass media monopolies” (Buen Abad 2014). However, “El Chavo” has also been praised by others for its “universality” beyond its specific Mexican cultural traits (Rocha 2006) and considered a “faithful depiction of latin-american societies” (Bode 2014). Politically incorrect humor is very common in the show. The mocking of the physical features, the intellectual capabilities, or the socio-economic status of characters is commonplace, and the child/teenager characters frequently tease and disrespect the adults (see Álvarez Cordero 2004 and Álvarez Muñoz 2008 for analyses).

This ambivalent status as both mainstream humor and also as politically incorrect is an important trait of “El Chavo” that will be reflected in the farce about ME, and will be readdressed later in the discussion.

The atmosphere of the school

Mathematics lessons were mocked in different episodes and scenes of “El Chavo”. Chespirito’s portrait of the public school, and in particular of the mathematics classroom, is quite different from those that populate MER. The students are not curious potential mathematicians or “cognitive angels” (Greer & Skovsmose 2012), and the teacher is not an especially motivating figure. The lessons are not “an adventure into knowledge” and do not take place in a “community of mathematical thinking”.

The teacher himself is often the object of jokes; students typically call him “maistro Longaniza” (“maistro” is a misspelling and mispronunciation of “maestro”, i.e., teacher, and “longaniza” is a kind of long sausage). Profesor Jirafales usually reacts with anger, intimidating the children. Although he does not otherwise use physical punishment on the children, he often picks up a student by the ear and puts him or her “in the corner” as punishment.

The classroom is usually very noisy and the kids often misbehave. The explanations of the teacher are constantly interrupted by a large array of situations and conflicts. Very often, the causes of Profesor Jirafales’s anger or despair are not only disciplinary matters, but also the students’ absurd answers to his questions, and in general

the ridiculous commentaries they make during lessons. The show seems, on the surface, to depict the students as irresponsible and unintelligent. Yet a closer look reveals a somehow more nuanced picture, which the use of the Spanish verb “vacilar” (a verb that can be translated as “to tease”) can help us to understand. Indeed, one of the main characteristics of the show is its’ depiction of Mexicans as inclined to make jokes, mess with each other, and to “vacilar”. The students always seem ready to take the risk of provoking Profesor Jirafales’s anger by teasing him.

The spectator thus never really knows if the students are indeed so dimwitted, or simply take the school (maybe somewhat unconsciously) as an annoying and nonsensical obligation and just put the minimum effort, teasing the teacher and wasting time as much as possible. In these situations, the students usually keep a serious face and seem genuinely respectful and even fearful of the teacher, so ambiguity is plentiful.

I will analyze scenes and situations from different episodes (mostly set in the school), during which Professor Jirafales or another adult asks the kids, or tries to explain to them, something about mathematics. Beyond all the comedic elements described above, Chespirito’s primary comic strategy for mocking the mathematics lesson is the *nonsensical* answers of the students. Although this nonsense could be addressed from a purely cognitive or didactical approach (i.e., the teacher “doesn’t explain well” or “the students don’t understand the concepts”), I will try to reflect about and link those nonsensical situations to different ideas proposed in the socio-political developments on MER, both as illustrations and as “food for thought”. I argue that tensions that the nonsensical situations depict, in an exaggerated and comedic way, are rooted in socio-political issues about ME.

Scene 1: On the unimportance of arithmetics

In one of the episodes, Don Ramón, Chilindrina’s father, is in the class as one of the students. The reason for this is that he’s hiding from Doña Florinda, who wants to give him a beating (a running joke of the show) after an argument. The situation could be seen as only a writing device of the author to put Don Ramón (one of the funniest and more popular characters of the show) in the classroom and thus to maximize comedic possibilities. But the socio-economic and cultural contrast between the teacher and Don

Ramón will add another level of reflection, in a particular scene that we will analyze later.

The students in the classroom include recurring characters El Chavo, Quico, Chilindrina, Don Ramón, Popis and Ñoño; but there are also some minor ones such as Paty (the cute girl and romantic interest of El Chavo and Quico) and Godínez, another kid. At the beginning of the class, the teacher tries to justify the value of learning arithmetic for the students.

The teacher begins with the statement that “Arithmetic is one of the main courses, one of the most important ones, because...”, but is then continuously interrupted by some conflict, situation or stupid commentary, so that he never manages to complete the phrase. The only explanation he manages to say is that Mathematics is an essential part of the Mexican educative system and important for the future careers the students could choose, such as engineering. The teacher assumes very naively that becoming an engineer is something that anyone can choose, even if he is an orphan student that lives in the street (El Chavo). Life opportunities, attaining a professional career or a well-paid job... it’s just a matter of choice. “Equal opportunities for everyone” is a premise of the neoliberal paradigm of society and mathematics education (Sáenz & García 2015).

In the scene, this speech of the teacher is heard only in the background of some other humorous conflict or situation (for example, El Chavo looking at Don Ramón in disbelief). It seems that the students are not interested at all in the class and only go there on account of legal and social obligation. Very often, the students just disregard the teacher’s speech.

The teacher’s speech tries to sell the students on the goodness of arithmetic (see Montecino & Valero 2017 for the teacher as a “sales agent”) with a very blunt argument: arithmetic could be useful for your future job. Here, in a cartoon from the 70s, we can find a ME use-value discourse in the 70’s consistent with recent (2012-2014) OECD, PISA and European Commission recommendations, explored by Valero (2017, p. 4). Most notably, the teacher’s speech about the importance of mathematics is deliberately presented in the comedy as only “disregarded background noise”.

Scene 2: I will punish you with a Math problem

[The teacher cuts his explanation of the importance of arithmetic short and starts asking questions to test the level of his students. From now on, Profesor Jirafales will be labeled "PJ", for simplicity].

PJ: Godínez!

Godínez: I didn't do it, Maestro!

PJ: But I am not accusing you!!

Godínez: So?

PJ: I want to ask you a little arithmetic problem.

Godínez: Why me? I didn't do anything!!

PJ: [gives up] Just forget it, ok? Sit down.

Here, Godínez is the opposite of the "cognitive angel" (Greer & Skovsmose 2012) mentioned before. PJ's message about the importance of arithmetic for his future career has not reached him. For Godínez, math class is all about being tested and questioned about a school subject called mathematics. The words "arithmetic problem" convey different senses for PJ and Godínez: for PJ it's just a device for testing what Godínez knows; PJ is only exploring the "prior knowledge" of his student. For Godínez, studying mathematics is just an imposition and some kind of punishment for a wrongdoing. If we follow a Deleuzian approach, the nonsensical situation depicted here is due to competing senses of the words "arithmetic problem" and around the roles of teacher and student. The sense of both the words and the roles are "effect of surface, effect of position, effect of language"(Deleuze 1969, p. 89).

Godínez's rejection is so emphatic that the teacher does not want to go through the trouble, and skips the question.

Scene 3: Some real-life maths

PJ: Chilindrina! I will ask you a little problem. We will suppose your father earns \$20 a day.

Don Ramón: What!?! To earn a miserable \$20 a day?!

Chilindrina: He barely reaches \$15!!

Don Ramón: [to Chilindrina] What, only \$15? When have I given you less than \$25?

Chilindrina: Oh, come on...

[They start arguing but the teacher interrupts]

PJ: Quiet, please!! I remind you that this is only a supposition.

Don Ramón, Chilindrina: Ah, ok...

PJ: If your father earns \$20 a day, how much does he earn a month?

Chilindrina: Between \$1500 and \$1600 [*Don Ramón asserts by nodding his head*].

PJ: Hmm! \$20 a day, times 30 days, equals \$600 a month. But, of course, you don't know about multiplication.

Chilindrina: And you don't know about the affairs my father has...

Don Ramón [nervous, whispers to Chilindrina]: What? Shut up!!

PJ [surprised face]: Quiet, please. Let's go on...

The apparently simple daily activities of an unemployed man, and his ways of making ends meet, are out of the reach of school mathematics. For the teacher and his school mathematics, paying the monthly bills is only a matter of multiplication. Mathematics excessively simplifies too many of the complexities of reality, and that's one of the reasons it is apparently so universal. There is not a physical or metaphysical connection between how much Don Ramón earns a day, multiplication, and how much he earns a month. But the connection could be formatted and enforced by mathematics. For multiplication to work, reality has to be previously reordered with mathematics. Thus, mathematics ends up representing and modelling the reality that has been fabricated for its use.

The possible limitations of mathematical knowledge to represent reality are not addressed (Guzmán 1995, Sáenz & García 2015, found also in Ernest 2010) by the teacher; he just skips to another question. He's the most educated person in the classroom, and yet is very naïve about realities he does not live in. Social engineering through the formatting and modeling power of mathematics (Skovsmose 1994, also re-explored by Straehler-Pohl 2017) and ME can easily leave someone like Don Ramón out of the scope, because he does not fit the mold. His reality is too complex for (school) mathematics to grasp.

The mockery of this scene about a supposedly "real-life" problem can also be related to how Lundin (2012, p.77) has reflected on so-called "word problems", pointing to how ME does not really want reality, but a "realism" that is different from reality. ME needs to play "as if" it was about reality. As a result, the message is to forget what your

father really earns, just use multiplication, and you will understand better what your father earns.

Scene 4: Don Ramón takes command

[After continuous interruptions, punishments, arguments and noise, Profesor Jirafales looks through the windows and sees Doña Florinda. He forgets his speech on the importance of arithmetic and rushes out. Before leaving, he decides to leave Don Ramón, the only other adult in the classroom, in charge. The kids start to laugh and joke. But Don Ramón is not there for jokes, and with a few strong shouts, a hit in the table and some intimidations, he quickly is in control of a startled classroom. Afterwards, he starts to ask questions to the students, about HIS very real life mathematics, as the widower, unemployed and street-wise father of Chilindrina].

Don Ramón: Popis!!

Popis: Present, teacher!

Don Ramón: What's more expensive, a kilo of tomatoes or a kilo of onions?

Popis: I... I don't know...

Don Ramón [hitting the table]: FAILED!! Let's see, Ñoño!!

Ñoño: Present, teacher!!

Don Ramón: What's a bigger score, a field goal or a touchdown?

Ñoño: I don't know...

Don Ramón: FAILED!! Godínez!!

Godínez: Present, teacher!!

Don Ramón: What's more, a straight or three of a kind? [Poker hands]

Godínez: Draw or flop?

Don Ramón [surprised face, doubting] Well... you got a 6 [a good grade]. I say, no?

[Godínez smiles proudly and brags to the class. The scene fades to black.]

Evidently, Don Ramón could say that in school kids do not really know too much about (his) real-life mathematics, as they ignore even very basic knowledges of “every-day life”, to the point of not being capable of joking about it. Don Ramón's mathematics is not The Mathematics of the school. When, finally, students are asked some “real life” and extremely simple mathematics, they fail even worse than they had with the “fictional-real world” problems.

What would a ME curriculum designed for the necessities and interests of Don Ramón look like? And so, WHO decides, or determines, mathematics education curriculum, contents and lines of research? Some of the usual suspects, mentioned and analyzed in different degrees by many researchers on the socio-political field, are OECD+PISA (Jablonka 2010, Llewellyn 2017, and many others), Unesco+ICME5 (Gellert 2017), European Commission (Valero 2017), World Bank (Llewellyn 2017), NMAP and NTCM (Greer 2012), among others. One point of agreement within the socio-political research on ME seems to be that there are many bodies and agencies of political and economic power with a strong interest and influence on ME and MER, and that neoliberal-capitalist ideals and agendas make ME one of its priorities (I will label these “bodies and agencies” as “power networks” in the remainder of the text). The other agreement seems to be that ignoring or minimizing that fact is a serious issue on MER. The influence of those power networks, and the meanings of and purpose(s) for ME that they promote, travels through all the nodes of the ME network of practices. This idea will be useful later in the discussion section.

It seems likely that Don Ramón’s questions, related to his very real-life, somehow make more sense to the students than math questions related to the school practice and the far-reaching agendas of the power networks mentioned before. So, the students give the most non-nonsensical answer so far: “I don’t know”. Even the rascal Godínez, gently disregarded by Jirafales, can now answer and even out-fox Don Ramón, showing that he might know more mathematics than previously believed. Again, this can be related to the issue of the falsified “real-life” in school mathematics explored by Lundin (2012). It can also be related to the reflection of Pais (2013) describing the research of Jurdak (2006): decision-making (even when using mathematics) in actual real-life, is fundamentally different to the situated problem solving of the school.

Scene 5: The yellow geometry and the lost area

PJ: Well, we will have to start by reviewing all that we studied the last course. We will remember what arithmetic and geometry were about. Can someone tell me what is geometry?

Popis: Geometry is a yellow book! [*PJ looks confused*] ... It is sold in bookstores...

PJ: What I want to know is what does Geometry study?

Popis: Ah, nothing! Books don't study anything; the ones who study are the pupils. Books only let themselves be studied.

PJ: Ok, Popis, better just sit down. Geometry is the science that studies space, figures and shapes that can be made. Hmm... First, we will try to find the area of the triangle.

Don Ramón: How have they not found it yet? They have been looking for it since I was a little kid.

[PJ surrenders, sits down shaking his head, the scene fades to black].

Considering that what “mathematics” *is*, is a matter of intellectual dispute (e.g. Buijsman 2016), Popis’s answer about geometry is far from absurd. For Popis, geometry is something invented and produced by someone and that she must study: a finished product, ready for consumption. While for PJ, “geometry” is a “science” that studies something, certain objects, shapes, figures, for Popis “geometry” is a yellow book that has been printed by someone, with contents that someone else has decided, that she must study for some unknown reason (for her).

On the other hand, Don Ramón’s comment (we do not really know if it’s ignorant, ironic, or both) reminds us that, with all the supposed or expected advances and developments in mathematics teaching, with the vast amount of literature and the positioning of mathematics education as a science and field of investigation on its own, with the multiple branches, divisions and subdivisions of specialized papers, publications, journals, PhD works, documentaries, congresses and meetings, all around the world, in different languages, national and international assessments, rankings, etc., in real mathematics school practice, at the end of the day, not so much has changed since the beginnings of the 20th century. Many innovations (and miracle stories, such as some of the “Global Prize Teacher” organization) remain at the margins of a massively standardized practice all over the world. The school practice has not evolved as much as the “evolutionary discourse” of MER would suggest.

Baldino and Cabral (2006), Pais (2012, 2017) and Gellert (2017) have previously addressed this “evolutionary discourse” by discussing the question of equity and failure in ME. In my own experience with mathematics, as a student and as a teacher-researcher, I have been exposed to many MER discourses (didactic triad, didactic situations, transposition theory, competences, social justice, etc.) but the scholarly routines, practices, schedules, curriculum, exercises and word problems, teaching strategies and, of

course, assessment methods, have undergone solely cosmetic changes. Today, the mathematics teacher seems to be “nicer” towards the students than, for example, Profesor Jirafales. But he is just as capable of assigning bad grades to the students as ever before, and the exercises and manuals are as awful as ever, if not more. And my students seem to hate mathematics as much as ever.

We could reason that if public school is an important ideological apparatus of modern capitalistic societies or states and key for sustaining certain socio-political orders, then the changes of ME would be mostly cosmetic. A substantial change in mathematics school practices would be counter-productive, or at least an unpredictable risk, for the same system. In other words, the successful/miracle stories of innovation are a fundamental element for preserving the status-quo of ME and to prevent significant (or dangerous) innovation.

Scene 6: Donkeys equals Rabbits equals Lambs

PJ [to the whole class]: We will start with a little problem. Let's suppose I have 14 donkeys...

Chilindrina: Not me!

PJ: Chilindrina, when I say “14 donkeys”, I'm not referring to my students... Although there is indeed some similarity...

Don Ramón: Come on, come on...

PJ: Well, well, ok, order. We said before that I have 14 donkeys...

[The students start to argue and mock each other]

PJ: ORDER!! I repeat, when I say that I have 14 donkeys, I'm only proposing an arithmetic problem!

Don Ramón [referring to the conflict]: Well, but it's your fault, maestro, for using donkeys in the problem. Why you don't try a different animal?

PJ: Ok. To prevent any further discussion, we will use lambs, or rabbits, or whatever... agreed?

The class, chit-chatting: Ok, ok.

PJ: Godínez, let's suppose that we take out 8...

Godínez: Lambs or rabbits?

PJ [annoyed]: It's the same!!

Godínez: No, rabbits have larger ears...

PJ [outburst]: But what's important here IS THE NUMBER!!

Godínez: Ahh, ok ok...

Chilindrina [mocking Godínez]: Ahh, ok ok... But of course, you are dumb!

PJ [ironical]: You did understand the problem, Chilindrina?

Chilindrina [bragging]: Ohh, of course...

PJ: Let's see...

Chilindrina: If we have 15 donkeys, and we take out 8 rabbits, we have 7 lambs left.

PJ [sighting]: Well, yes, the subtraction is correct, but you can't mix different animals.

Chilindrina: Oh, who can understand you? You said that it was all the same, donkeys or lambs or rabbits...

PJ: Yes, but from donkeys you can only take out donkeys!

Chilindrina: No, that's not true...

PJ [annoyed]: That's not true!?

Chilindrina: No, from donkeys you can also take out ticks.

PJ [closing his eyes]: Well, look, we'd better propose a different problem.

One of the most important things in the mathematics lesson is to avoid being ridiculed. And one can be ridiculed for not knowing the answer to a question, but in Mexican culture at least, also if the animal in the problem is related to you. By now, Professor Jirafales has clearly renounced students' relations of arithmetic problems to real life, and the only important thing is THE NUMBER. But the kids do not renounce their previous knowledge so easily, and they keep relating the questions of the teacher to their previous experiences, even if in an absurd way. The emphasis of the teacher is on the procedures and the rules, so he uses donkeys but donkeys are not important, nor lambs, nor rabbits. Only the procedure is important. This is yet another example of the use of simulated "real-life" as an excuse for mathematics.

The kids must learn to separate and decontextualize their world of experience, instrumental reasoning, objectification, and to defer any meaning or value to the operations (Ernest 2010). This is nonsense served on a plate. The unanswered (by the teacher) objection of the kids seems to be: "How is it the same and also not the same? What do you really want?" The use of some animal in the problem is merely a language device to facilitate the students the acquisition of a certain mind frame and subjectivity, to mold their intelligences (Andrade-Molina & Valero 2017). For what reason, either

nobody knows, or it is not interesting to speak about it in the class. At this moment we can also consider that the prevalent assessment style (discourse) of the teacher, towards the answers of the students, is what Boistrup (2017, p. 216) calls “do it quick and right”. And then, he does not explain or answer the objections, he just skips to another question.

Scene 7: Statistics, those old ladies...

[This scene is from an episode that is not set in the school, but is interesting nonetheless due to the absurd discussion about statistics, its meaning and language. Quico and El Chavo discuss going to play football on the street. Doña Florinda (Quico's mom) and Profesor Jirafales intervene].

Quico: Mom, why can't we play in the street?

Doña Florinda: No, dear, the street is very dangerous! Don't you know that in this city, a man is run over by a car every 20 minutes?

El Chavo: Oh, my, he must be tired of being run over so much! Poor man, how is he doing?

Doña Florinda: No, Chavo, what I mean is...

El Chavo: I wouldn't go out anymore if I were him!

[PJ intervenes]

PJ: Ok, ok, wait, I will explain it. What Doña Florinda means is that for every 20 minutes, a person is run over by a car, but it's not always the same person.

Quico: Exactly. So, we can wait until some person is hit, and then we can go play for 19 minutes.

Doña Florinda: No, dear, it's not like that, either...

El Chavo: But I have played in the street many times, and it's not true that there are so many people hit by cars...

PJ: No, Chavo, it's not because we say so... It's because Statistics say so!

El Chavo: I don't even know those old ladies!

PJ: Statistics are not old ladies...

Quico: Of course not, they are still pretty young!

Doña Florinda: No, dear, wait... Statistics are... hmmm... how can I explain it so you understand...?

PJ: Let me explain to him, Doña Florinda. [*To Quico*] Statistics are a set of facts, numerically valued, that correlate to... [*Looks down to Quico, giving him a gentle touch on the cheek*]... No, you don't understand this...

Doña Florinda: Well, he's just too young...

PJ: No... this one, not even when he's grown up.

Doña Florinda: What?

PJ [*embarrassed*]: No, I mean... Doña Florinda, maybe it would be better if I explain it to them another day.

Doña Florinda: Oh, yes, please! [*To Quico*] I'll be back soon, my dear. I will just take a walk with Professor Jirafales [*smiling*].

El Quico: Yes, mom!

Doña Florinda: And don't try to play in the street. I don't want you to be hit by a car.

Quico: Yes, mommy.

Mathematics has the capacity to standardize and normalize daily routines and procedures, even for the simplest and most intimate social interactions (see Skovsmose 1994 for the key notion of the *formatting power* of mathematics). But the effective use of statistics for such ends is a capacity that only a few specialists possess, and the conceptual and procedural frameworks to reach and justify a result such as “for every 20 minutes, a person is hit by a car somewhere in Mexico” are beyond the capabilities of most people.

For kids, the reason that they can't play in the street is because “statistics” says so, even if nobody seems capable of justifying that to them. Maybe they do not learn or understand statistics, or they understand something absurdly inaccurate, but they learn that when those old ladies say something, it's objectively true. The mom, the teacher, and society can domesticate the behavior of the children with the authority of mathematics.

The adults themselves do not seem to deeply understand statistics, either. Sáenz and García (2015) explore the issue that mathematics is publicly perceived as mysterious, a hidden knowledge (in contrast to the “mathematics-for-all” ideal), highly valued as objective and trustworthy, and useful for constructing authoritative arguments. They call this the “symbolic power” of mathematics (similar to the notion proposed by Skovsmose 1994): a legitimate yet unreachable knowledge with the power of making the subjects accept the validity of that subjection. We do not understand it but we accept its

judgement as truth. It could be a difficult but interesting research question to try to understand how/why has such a socio-cultural phenomenon come to be (in a similar way as, for example, Pais 2012, Gellert 2017, and Valero 2017 have approached the now common-sense statement “mathematics for all”).

Trying to make sense of the nonsense

“El Chavo” portrays real socio-political issues about ME in an intuitive way (the intuition of a comedian or poet), allowing us to establish a valuable dialogue with this “non-scientific” popular culture expression within the network of MER practices. The core reason behind many of the nonsensical answers analyzed seems to be the disconnection between different worlds of meaning around mathematics; between the sense and purpose designed by the power networks and the day-to-day endeavors of people who are required to pass mathematics tests. Between these, there is an abyss that neither the teacher nor the ME research communities seem capable of closing. Even more, according to some authors (Pais 2017, Gellert 2017, Jablonka & Bergsten 2017) MER can indeed be used to support and justify the discourse and designs of the policy-making spaces. I will label this alliance the “MER+Power networks”.

So far, I have used the term “nonsense” as a synonym for “absurd” and “incoherent” in many of the scenes and dialogues analyzed. But it could be argued that the answers of the students and the jokes are not absurd per se. Rather, it is the collision of different senses (at least, those of the students and those of the teacher, but perhaps more) that creates the absurd situation. Following Deleuze (1969, pp. 88-90), a twist can be proposed to what we commonly mean by “nonsense”. ME can be characterized as what (Deleuze 1969, p. 89) calls a *zero phoneme*, because it is devoid of any particular sense, where, and (following one of the reviewers of this article), every actor in the nodes of the network generates sense (and/or meaning). The actors compete to fill the void “ME=x”. In most of the scenes analyzed, the absurd seems to come from an overabundance; from an excess of senses competing for the nonsensical ME. This is also the case in scene n° 5 for “geometry”, and, in general, for the same contents of mathematics and the word “mathematics” itself.

The sense intended for ME from the power networks does not emerge from the immediate social context of the school, but from a “pre-designed reality” different from the one the students live in. The school practice and its different actors give ME a sense, for their context, that is possibly at odds with the sense (designs, agendas, expected results) of MER+Power networks; in the middle, we have the teacher as social agent AND product of the network of practices, who is supposed to acknowledge the sense of the power spaces and somehow expected to implant this sense on the students.

As Pais (2017) proposes, the “reality” of MER is an artificial one, MER lives in a world of its own making. Its results do not work (in some sense) for an actual teacher, or for overcoming failure. And at the same time, the MER results have huge effects (for example, as justifying discourses for policy making, at national and international levels) on schools and on the most intimate of teaching practices (especially, through the political influence in the “gatekeeping dispositive”, assessment at its various levels; see Boistrup 2017). And at the same time, the historical school practice changes very little. In an MER conference, a participant could get the impression that ME is a field that has changed a lot, and discourses seem to have changed immensely. But practice remains, historically, very static.

At the end, the nonsense of the school classroom should not be a surprise, considering these internal, apparently paradoxical, relations between the social practices of policy-making, MER and ME school practices, and all the different actors involved.

Another ingredient we should consider in this reflection is the particular position of Mexican and Latin American societies in the western world. Mathematics education is for some authors a device of cultural colonization, a mechanism for the establishment of a foreign societal norm and order (this idea is explored by Apaza 2017 and Fasheh 2012). ME not only distinguishes people as being either producers or consumers of mathematics (Skovsmose 2006), it also separates and categorizes entire countries, societies and cultures with those labels. Even in the societies where mathematics and ME developments flourish the most, they function as mechanisms of selection and accreditation. So, in Latin American societies, for their particular position in the global frame, the divisive effect of ME is boosted by an extra ingredient of cultural domination.

And all of this could further fuel the nonsense in Mexican and Latin American classrooms.

There is a final scene where Don Ramón asks PJ why he still does his job, despite all the problems he experiences. PJ answers by saying that “in spite of everything, I have faith in the children. And if we want to build a better world, here are the foundations, look [points to the students]”. This scene depicts an example of the *ambivalence* within public perception of ME (Lundin 2012, 2017; Kollosche 2017; Sáenz & García 2015). It is a mixture of critique, objections, dislike; lack of understanding; excessive difficulty and abstraction; and somehow, acceptance and validation. In “El Chavo”, ME is useless, compulsory, and the teacher is not very good; yet still, he has “Faith in the children” and goes on.

This ambivalence is, in my experience, similar to that of the parents of my private students: “s/he must study and improve his/her grades, mathematics are very important for their future, it’s his/her responsibility to study, etc.”; bad grades threaten summer and holidays. But, once they become more confident with me after a while, they confess that they do not really understand what mathematics is useful for, it is awful and boring, and they have never used mathematics in their adult lives beyond very basic knowledges. But “s/he must put an effort and pass the course”. In these sincere moments ME reveals itself as “social ritual” for us, allowing us to gain a certain soothing distance from it (an idea explored by Lundin 2017). So, I see “El Chavo” more as a sophisticated expression of the “subjects” ambivalence, than as a *standard critique* of ME (Lundin 2012).

Final thoughts

El Chavo presents a comic, absurd, and exaggerated portrait of the reality of ME classrooms, but nonetheless, a portrait that a teacher could relate to. Social unrest about ME is far reaching, and a farce such as “El Chavo” could constitute a wake-up call. Moreover, the scenes analyzed in this chapter show that a popular culture sitcom portrayed nonsensical issues of school mathematics (not always noticed by ME researchers) 40 years ago. In other words, the disregarded common sense, or the intuitive approach of a comedy writer, was observing issues that a large portion of MER seems unable to properly address, even today.

In the field of Astronomy, the professional has the most specialized instruments and the focused gaze. But the amateur has the less specialized tools and, thus, the broader view. So, very often, the amateur has the opportunity to discover “unpredictable things” like comets, which sometimes escape the narrow view of the professional. To my knowledge, professional astronomers will not disregard the amateur’s discoveries. In MER, perhaps valuable insights could be gained if we pay attention once more to common sense and to unofficial, “nomadic” depictions of the school mathematics, or of mathematics as a science. Today, MER is mostly a self-contained social practice that speaks a lot about its own idealized classrooms, but little about the actual ones.

So, following the ideas of Pais (2017) mentioned in the introduction, it could be interesting to continue exploring “unclean” examples of ME (real experiences and fictions, both from MER and from popular culture) to combat the narcissism of MER. In my own teaching experience, I remember certain suggestive nonsenses: a student classifying binomial distributions as “negative” and “common or positive”; a student trying to bribe me with the drawing of a giraffe; “ $a > b$ and $b > c$ equals parenthesis $a > c$ ”; and a student refuting the axiom of parallelism. A way of addressing these nonsenses is giving them a voice in MER instead of simply trying to remove them (many times by the force of assessment) or disregarding them, “skipping to another question”.

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References

- Álvarez Cordero, R. (2004). *Me caes gordo! La discriminación light*. Madrid: Plaza y Valdés.
- Andrade-Molina, M., & Valero, P. (2017). The Effects of School Geometry in the Shaping of a Desired Child. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 251-270). Switzerland: Springer International Publishing.

- Apaza, H. (2017). *La Yupana, material manipulativo para la educación matemática. Justicia social y cambio educativo en niños de las comunidades quechuas alto andinos del Perú*. (Unpublished doctoral dissertation). Universidad Autónoma de Madrid.
- Ávila Muñoz, P; (2008). Importancia de la mediación de los padres ante la exposición de sus hijos a los medios masivos de comunicación. *Sphera Pública*, 8, 83-102. Recovered from <http://www.redalyc.org/articulo.oa?id=29713032006>
- Baldino, R., & Cabral, T. C. (2006). Inclusion and diversity from Hegel-Lacan point of view: Do we desire our desire for change? *International Journal of Science and Mathematics Education*, 4(1), 19–43.
- Boistrup, B. L. (2017) Assessment in Mathematics Education: A Gatekeeping Dispositive. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 209-230). Switzerland: Springer International Publishing.
- Bode, J. (2014). El Chavo del Ocho, el reflejo de una cultura. Retrieved July 28, 2017, from <http://www.veintemundos.com/magazines/45-de/>
- Buen Abad, F. (2014). Para leer "El Chavo del Ocho." Retrieved July 28, 2017 from <http://www.telesurtv.net/blog/Para-leer-el-Chavo-del-Ocho-20141130-0043.html>
- Buijsman, S. (2016). *Philosophy of Mathematics for the Masses: Extending the scope of the philosophy of mathematics* (Doctoral dissertation, Stockholm University).
- De Guzmán, M. (1995). Impactos de la matemática sobre la cultura. *La Ciencia ante el siglo XXI. Ciclo de conferencias de la Real Academia de Ciencias Exactas, Físicas y Naturales* (pp. 21-54). Madrid: Fundación Ramón Areces.
- Deleuze, G. (1990). *Logique du sens*, trans. Miguel Morey. Barcelona: Ediciones Paidós Ibérica.
- Ernest, P. (2010). The scope and limits of critical mathematics education. In H. Alrø, O. Ravn & Paola Valero (Eds.). *Critical mathematics education: Past, present and future: Festschrift for Ole Skovsmose* (pp. 65-87). Rotterdam: Sense Publishers.
- Fasheh, M. J. (2012). The role of mathematics in the destruction of communities, and what we can do to reverse this process, including using mathematics. In O. Skovsmose & B. Greer (Eds.), *Opening the cage: Critique and politics of mathematics education* (pp. 49–91). Rotterdam: Sense Publishers.

- Gellert, U. (2017). Revisiting Mathematics for All: A Commentary to Pais's Critique. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 67-87). Switzerland: Springer International Publishing.
- Greer, B. (2012). The USA mathematics advisory panel: A case study. In O. Skovsmose & B. Greer (Eds.), *Opening the cage: Critique and politics of mathematics education* (pp. 107-124). Rotterdam: Sense Publishers.
- Greer, B. & Skovsmose, O. (2012). Seeing the cage? The emergence of critical mathematics education. In O. Skovsmose & B. Greer (Eds.), *Opening the cage: Critique and politics of mathematics education* (pp. 1-19). Rotterdam: Sense Publishers.
- Jablonka, E. (2010). Reflections on mathematical modelling. In H. Alrø, O. Ravn & Paola Valero (Eds.), *Critical mathematics education: Past, present and future: Festschrift for Ole Skovsmose* (pp. 89-100). Rotterdam: Sense Publishers.
- Jablonka, E., & Bergsten, C. (2017). Installing "good mathematics teaching": Hegemonic strategies and alliances of researchers. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 107-120). Switzerland: Springer International Publishing.
- Jurdak, M. (2006). Contrasting perspectives and performance of high school students on problem solving in real world situated and school contexts. *Educational Studies in Mathematics*, 63(3), 283–301.
- Kollosche, D. (2017). A Socio-critical Analysis of Students' Perceptions of Mathematics. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 173-189). Switzerland: Springer International Publishing.
- Llewellyn, A. (2017). Technologies of (Re) production in Mathematics Education Research: Performances of Progress. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education* (pp. 153-169). Springer International Publishing.
- Lundin, S. (2012). Hating school, loving mathematics: On the ideological function of critique and reform in mathematics education. *Educational Studies in Mathematics*, 80(1), 73–85.
- Lundin, S., & Christensen, D. S. (2017). Mathematics Education as Praying Wheel: How Adults Avoid Mathematics by Pushing It onto Children. In H. Straehler-Pohl, N. Bohlmann & A

- Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 19-34). Switzerland: Springer International Publishing.
- Montecino, A., & Valero, P. (2017). Mathematics Teachers as Products and Agents: To Be and Not to Be. That's the Point! In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.) *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 135-152). Switzerland: Springer International Publishing.
- Pais, A. (2012). A critical approach to equity in mathematics education. In O. Skovsmose & B. Greer (Eds.), *Opening the cage: Critique and politics of mathematics education* (pp. 49–91). Rotterdam: Sense Publishers.
- Pais, A. (2013). An ideology critique of the use-value of mathematics. *Educational Studies in Mathematics*, 84(1), 15–34.
- Pais, A. (2017). The Narcissism of Mathematics Education. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.), *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 53-63). Switzerland: Springer International Publishing.
- Rocha, R. (2006). Mantiene El Chavo del Ocho éxito de audiencia en Chile. *El Universal*. Retrieved July 28, 2017 from <http://archivo.eluniversal.com.mx/notas/346128.html>
- Sáenz, C., & García, X. (2015). *Matemáticas: placer, poder, a veces dolor: una mirada crítica sobre la matemática y su enseñanza*. Madrid: Universidad Autónoma de Madrid.
- Skovsmose, O. (1994). *Towards a philosophy of critical mathematics education*. Dordrecht: Kluwer Academic Publishers.
- Skovsmose, O. (2006). *Travelling through education: uncertainty, mathematics, responsibility*. Rotterdam: Sense Publishers.
- Skovsmose, O. (2011). *An invitation to critical mathematics education*. Heidelberg: Springer.
- Straehler-Pohl, H. (2017). De|mathematisation and ideology in times of capitalism: Recovering critical distance. In H. Straehler-Pohl, N. Bohlmann & A Pais (Eds.) *The Disorder of Mathematics Education. Challenging the Sociopolitical Dimensions of Research* (pp. 35-52). Springer International Publishing.
- Valero, P. (2010). Mathematics education as a network of social practices. In V. Durand-Guerier, S. Soury-Lavergne, & F. Arzarello (Eds.), *Proceedings of the Sixth Congress of the European Society for Research in Mathematics Education* (pp. LIV-LXXX). Lyon: Institut National de Recherche Pédagogique.

Valero, P. (2017). Mathematics for all, economic growth, and the making of the citizen-worker.
In T. S. Popkewitz, J. Diaz, & C. Kirchgasser (Eds.), *A political sociology of educational knowledge: Studies of exclusions and difference* (pp. 117-132). New York: Routledge.