

Commentary on the Chapter by Richard Barwell, “Heteroglossia in Multilingual Mathematics Classrooms”

Bakhtin, Alterity, and Ideology

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Mathematics classrooms are sites of encounter for different voices, perspectives, and ideas. Those differences become even more visible when the object of difference is language. In his chapter, Barwell draws on Bakhtin’s concept of heteroglossia to explore the tensions that underpin multilingual classrooms. He enquires about how those tensions influence the teaching and learning of mathematics and the implications that they may have for equity in mathematics teaching. In my comments, I would like to dwell upon the question of language in the mathematics classroom and on some issues about equity.

1 Language in the Mathematics Classroom

One way or another, for one reason or another, since the time of Babylonian schools, institutional educations have always faced the question of linguistic diversity. However, the manner in which this diversity has been addressed and understood has not always been the same. Contemporary schools seem to be led to address this diversity along the lines of contemporary concerns about equity and social justice. These concerns, of course, are a token of social and political interests in coming to grips with cultural diversity, brought forward by unprecedented migratory movements of a global scale.

In his chapter, Barwell points out four “tensions” that are present in the mathematics classroom, considering them through the lenses of language differences—for instance, tensions between school and home languages or language policy and mathematics classroom practice. We can see, through the illuminating examples he discusses, how difficult it is for teachers and schools to “deal” with cultural diversity. How, in particular, to approach the multiple languages that the students bring

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into the classroom? Following Bakhtin, Barwell sees the classroom as immersed in the dynamics of unitary and diverging “forces.” Unitary (or centripetal) forces tend towards unified forms of language, often associated with conceptual, cultural, and political centralization. Diverging (or centrifugal) forces stress diversity, often associated with the speakers’ cultural, political, and economic background. In the conclusions, he suggests that one of the characteristics of language and communication is the tensions they entail, and goes on to assert “that rather than seeking to eliminate the tensions. . . a more productive approach would be to shift the tension more towards heteroglossia and away from a unitary perspective.”

Although I am in agreement with Barwell’s conclusion, it is my contention that the search for “productive approaches” requires us to better understand the interplay between unitary and diverging “forces” in multilingual classrooms and how to take advantage of these forces in school mathematics practices. In particular, I would like to suggest that it might be advantageous for multilingual research in mathematics education to examine the interplay of unifying and diverging forces against the backdrop of two central Bakhtinian ideas: *alterity*—i.e., the relationship of I and Other—and language as necessarily *ideological*.

2 Language as *Ideological*

Bakhtin’s concept of language is at odds with most concepts of language developed in the Western tradition—e.g. the empiricist view of Locke or the rationalist one of Leibniz, views that, although different, share nonetheless a common individualist stance: language is, in those views, something lodged in the individual. For Bakhtin, language is not *in* the individual. Language precedes the individual. Language is historical, social and cultural—something that instead of being neutral, is, from the outset, positioned within a larger political context. Thus, in one of Barwell’s examples, English appears as the language of elite classes in Pakistan. In general, language operates as a marker of differences in the social, political, and economic arenas of culture. Even more, language is *constitutive* of its subjects whose subjective existence can only be realized through it and the *worldviews* it conveys. To emphasize the fact that language always signifies within particular worldviews—something that makes language much more than a formal channel of communication—Bakhtin and his collaborators referred to the term *ideology*, understood not as a simple system of ideas, but as a social-cultural human activity (Vološinov 1973). All signs, language included, signify within the sphere of a super-symbolic cultural axis (the axis of *ideology*). And mathematics’ language and ideas are not the exception.

For instance, Lizcano (1993) has shown how the concept of number in Ancient China developed within the symmetries of yin-yang symbolic structures, thereby making it possible to imagine and talk about negative numbers, something that was tremendously difficult to imagine in the West. To come up with a concept of negative number, Western thought had indeed to invent capitalism and its quantifying practice of debts. A more contemporary example of language and *ideology* is provided by the investigation of forms of knowing in aboriginal communities in Canada. For

the Yup'ik people, problem solving is embedded in oral narratives that emphasize intuitions, visions, dreams, and spiritual interaction (Kawagley 1990)—components that are in deep contrast to the analytic rationalist ones that we inherited from the Enlightenment and its emphasis on rigor, deduction, and abstraction. As Barwell reminds us, it is misleading to think that students from other cultures “do not bring different mathematics, only different languages.” In the students of multicultural classrooms we already find mathematics (as a plural noun) that speak about different worlds, even if the mathematics is expressed in the same official language. We do not produce accents when talking only. We also produce accents when thinking. All of our thinking and talking is inevitably inhabited by the languages we use and the *ideologies* those languages unavoidably refer to. A greater sensitivity to the ideological nature of language seems to me to be an aspect to take into account to offer space for learning and to promote justice and equity in multilingual classrooms.

3 Alterity

Naturally, a greater sensitivity to the ideological nature of language is just a step, perhaps the first step to inclusiveness. We still need to know what to do with the various languages the students bring into the classroom. This question can only be answered within the larger context of multiculturalism. One of the imminent risks here is to consider multiculturalism as a benevolent form of tolerance. It might be this form of liberal multiculturalism that informs pedagogical actions that tolerate other languages in the classroom as a trade-in to subtly impose official languages. In this case, cultural and linguistic differences are conceived of as *natural* differences and become engulfed in the official mechanisms of order, centralization, and subjection. We end up forgetting that the differences under consideration have been forged to a large extent through a bloody history of colonialism and domination. Of course, we can *hear* that the person next to us is talking in a different language. But the question is: how are we going to react to this cultural difference? The manner in which we respond to our neighbor's language is not a natural act, but one that has been actively produced on the bases of historically formed social, cultural, and political understandings. This is why a greater sensitivity to the ideological nature of language and a worthy shift of the tensions produced by multicultural encounters towards heteroglossia may not be enough. There is something extremely important in Bakhtin's idea of language that needs to be taken into consideration in our understanding of multiculturalism and multilingualism. And this is the question of *alterity*, the place of the Other in the constitution of the I. Following the Hegelian-Marxist tradition, Bakhtin says:

All that touches me—beginning with my name and that penetrates into my consciousness—comes from the outside world, from the mouths of others... with their intonation, their affective tonality, and their values. At first I am conscious of myself only through others: they give me the words, the forms, and the tonality that constitute my first image of myself... Just as the body is initially formed in the womb of the mother (in her body), so human consciousness awakens surrounded by the consciousness of others. (Bakhtin 1984, pp. 357–58)

Bakhtin's view of the Other, I want to suggest, is extremely important to understanding multilingualism in the classroom. In this view, the Other is neither an object nor an exotic specimen, but someone who, through his/her languages and *ideologyas*, constitutes me as individual—someone who helps me get out of my tautological confined space.

But we are not out of the woods yet. The two Bakhtinian ideas I have mentioned (language as ideological and the Other as constitutive of the I) have still to be integrated in classroom practices that seek to promote equity and social justice. Such a task could hardly be carried out if we continue to think platonically, that is to say, if we think of mathematics as a discipline dealing with disembodied truths. We might be better off if we think of mathematics as a *situated* process where we come to the public space to think and talk about certain states of affairs. Barwell's heteroglossical shift may mean here the critical encounter of different voices and ideologies unfolding as a historical process against the set of various cultural centripetal and centrifugal traditions, each one becoming enlightened and modified by the others. Naturally, the challenges are colossal. For one thing, we have to cease seeing the mathematics classroom under the model of market economy—a utilitarian space of negotiations and personal promotion. The “banking model” of the classroom—to use Freire's term—should be replaced with a model of genuine human interaction moved by values of solidarity and cooperation. In this new model yet to be built, the language of the classroom would necessarily be collective and polyphonic. It would be a multifarious organ of collective and individual identity formations, a site of struggle and contradictions and, hence, of change and movement.

References

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