# Toward an Ethical Attitude in Mathematics Education Research Writing

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*In this article, the authors propose a set of multi-level questions as a guide for developing an ethical attitude in researcher–participant and researcher–researcher relations during the research writing process. Drawing on the sociopolitical turn in mathematics education, the authors view these relations in terms of power and positionings, in the dialectic between the micro-level of research writing and the wider, macro-level context of mathematics education. The authors illustrate the use of the proposed questions through a back-and-forth dialogue. The dialogue draws on experiences from a writing collaboration in which the authors—"the researchers"—wrote up for publication research conducted in their respective contexts of the Political North and Political South. Both research projects focused on how mathematics students—"the participants"—narrate and hence position themselves and are narrated and positioned by mathematics education and sociopolitical discourses in research publications.*

KEYWORDS: ethical attitude, research writing, research relations, sociopolitial turn

Ara is a 17-year-old boy who repeatedly referred to his background in interviews that focused on his mathematical identities of failing in mathematics. He grew up with eight siblings in a Kurdish immigrant family in Sweden. At home he speaks (one of the) Kurdish languages; none of his parents speak Swedish. But Ara learns mathematics in Swedish. Ara says that he, after failing year nine mathematics, had to attend a compulsory summer school "*som min farbror undervisade*" [that my uncle taught]. With an improved grade, he qualified for upper secondary school. However, now in upper secondary school, he says that he also needs to work late nights at his brother's pizza restaurant. So, due to less time for homework and sleep, he says that he is failing again.

**Annica – Researcher, teacher, female, multilingual Swedish-speaking, middleclass, White, Swede**

Luthando, a university student who identifies as black African, talked in his interview about his home in an urban, South African "township," which was not "very advanced." He said his "coloured" high school was "disadvantaged" as it lacked computers and maths teachers and had large,

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noisy classes. He speaks isiZulu at home but learnt school mathematics in English. Using the community library, studying alone, and "cutting out" classroom noise, Luthando was the "top student" in his school. Furthermore, he claimed other students "knew me by my marks."

**Kate – Researcher, teacher, female, monolingual English-speaking, middle class, White, South African**

Recent mathematics education research publications point to a concern with power and positionings in relations between mathematics education participants in and across contexts characterised by social, cultural, racial, and other differences. This concern may focus on teacher–student relations (e.g., Amidon, 2013; Bartell, 2011), relations between teacher educators and future mathematics teachers (e.g., Herbel-Eisenmann et al., 2013), and researcher–participant and researcher–researcher relations (e.g., Adler & Lerman, 2003; Bartell & Johnson, 2013; D'Ambrosio et al., 2013; Foote & Bartell, 2011).

In this article, we focus on researcher–participant and researcher–researcher relations within mathematics education research, with a specific focus on the research writing process. Our discussion is presented at a period in history characterised by related ethnic, racial, class, and linguistic tensions between people within particular contexts. These contexts are foregrounded, for example, by the Black Lives Matter movement in the United States, by the Rhodes Must Fall movement and decolonization debates in South Africa, in anti-immigration sentiments in Europe and the United States, in the shift toward nationalist and populist parties such as the Sweden democrats [*Sverigedemokraterna*] in Sweden, and in recurrent xenophobic attacks across the globe.

In a time of internationalization and international conferences, the ease of communication in many countries provides enabling conditions for collaborative research relations across countries and continents. Indeed, a researcher's international collaborations in English, the lingua franca in the mathematics education research community (Meaney, 2013), convey a level of status. However, internationalization in mathematics education research brings with it conflicting discourses concerning equity, plurality, complexity, and values (Atweh & Clarkson, 2002). Ernest (2016) has problematized the effects of the global knowledge economy on education in terms of ideology, recruitment, appropriation, and dominance. Other researchers express reservations about what they have to offer participants in (e.g., Hand & Masters Goffney, 2013) and across (e.g., Ernest, 2016; Valero, 2014; Wagner, 2012) contexts. For some, collaboration requires publishing in English as a second or third language (Meaney, 2013).

Here, we pursue an argument that researchers can, in a powerful way, use theory to write about research participants and their experiences (cf. Gutiérrez, 2013; Valero, 2014), and to work with one another as writers. Following Walshaw (2013), we use ideas from poststructuralism as a language to talk about "ethical practical action" (p. 101) in mathematics education research relationships. In particular, we use concepts from what has been identified as the sociopolitical turn in

mathematics education (Gutiérrez, 2013; Valero, 2004); we explain our particular choice of using upper and lower case p/P in *socio-p/Political* in the next section. These concepts have been used to foreground researcher–participant relations (Chronaki, 2004; Meaney; 2004); we extend their use here to include researcher–researcher relations. We view these relations in terms of power (Fairclough, 2001; Foucault, 1977) and positionings in intertwined discourses as suggested by Andersson and Wagner (2016). We use the term positionings as it points us to the distribution of power within discourses (Harré & van Langenhove, 1998) in the dialectic between the micro-level of the research writing process and the macro-level of the wider research context. These concepts enable us as collaborating researchers to talk about and account for our political writing choices of what and how we write about participants in our research in and across contexts of social, cultural, language, and political difference.

Our contribution here is a theoretically informed set of multi-level questions that can act as an ethical guide for mathematics education researchers as they reflexively work with the challenges of power and positionings in researcher–participant and researcher–researcher relations during the research writing process. We illustrate this framework using experiences from a writing collaboration reported in Andersson and le Roux (2015) as we wrote up for publication our research conducted in our respective contexts: Annica in the Political North, and Kate in the Political South.[1] Both research studies (described later) focus on how students such as Ara in Sweden and Luthando in South Africa narrate and hence position themselves *and* are narrated and positioned by mathematics education and sociopolitical discourses as included and/or excluded.

The student interview and other data in our research projects offer a remarkably rich opportunity to listen to student voices on being mathematics students in the two contexts of Sweden and South Africa. However, as researchers we both experienced writing about the student data in our projects as deeply challenging. This writing challenge relates to power and positionings of the researcher and participants in mathematics education in our particular research contexts. Our different cultural, linguistic, and social experiences (suggested in the introductory quotes) have the potential for new or further stigmatizations or harm of certain labelled student groups.

As researchers, our common research interests and writing challenges pointed to the potential for research writing collaboration. However, the references for our introductory quotes point to differences in power and positionings within our writing collaboration itself.

Our concern about difference in and across contexts is not just technical but personal and contextual. In our writing collaboration—in which we communicat-

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[1] Our naming of these different geopolitical contexts draws on Janks (2010).

ed via written feedback on our writing and discussions in video conference calls—we aimed for an attitude of carefulness both in our writing about the students' experiences as represented in our data and in our writing with one another as researchers. The set of multi-level guiding questions for developing an ethical attitude in researcher–participant and researcher–researcher relations in contexts of difference that we present in this article emerged out of these efforts.

We begin by presenting the theoretical concepts underpinning our guiding questions, with a specific focus on research practice. We next present the questions that developed during our writing collaboration. We describe more about our individual research projects, and then illustrate an ethical attitude in use in a dialogue between us (Annica and Kate) about writing for these projects.

## Concepts from the Socio-p/Political Turn

The term *sociopolitical turn* in mathematics education has been used by Valero (2004) and Gutiérrez (2013) to describe the move beyond sociocultural theories to the use of explicit theories of *power* and *positionings* (also referred to as *identities* and *subject positions*). This move has recontextualized concepts from wider social theory, mainly from poststructuralism, critical theory, and critical race theory. Indeed, Walshaw (2011) has proposed these concepts as productive for understanding urban mathematics education. What or who is included in this move in mathematics education is not conclusive. Here, we present those concepts that we find productive for the challenges of research writing in and across contexts of difference, drawing on the work of mathematics education researchers and other social theorists as appropriate.[2] These concepts provide a framework for thinking about power, social relations, positionings, and ethical action in the micro-level activity of collaborative research writing. They also allow us to locate this writing activity in wider social systems and the power relations that sustain them, and to consider how our writing activity is both shaped by and shapes this macro-level context.

### *Power and Positionings in the Socio-p/Political Turn*

We view the macro-level context of mathematics education as a network of social practices as suggested by Valero (2007). School mathematics, university mathematics, assessment, policy, mathematics teacher professional development, urban schooling, mathematics education research, and students' homes and communities are examples of practices in this network (Valero, 2007; Walshaw, 2011), and we take the notion of research practice forward as an example in this section. According to Fairclough (2003), a practice is characterised by a relatively stable,

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[2] We refer the reader to the referenced work for more detailed exposition of the concepts and their antecedents.

recognizable combination of objects, activities, participants (e.g., researchers and research participants), social relations, values, time, space, and language use (e.g., written research papers and turn-taking in interviews). These elements of a practice are re-created in social, cultural, material, and discursive conditions (Valero, 2007).

Mathematics education practices are political as they (re)produce relations of power (Fairclough, 2001; Valero, 2007). In this use of political, *power* is viewed as situational, relational, and in constant transformation, and not as an intrinsic, permanent possession of a person or practice (Gutiérrez, 2013; Valero, 2004, 2007). According to Fairclough (2001), power is (re)produced at two levels of the social world and this distinction underpins our use of the terms *Political* and *political*. We discuss the macro-level power relations here and introduce micro-level power relations later in this section.[3]

According to Fairclough (2001), power relations between practices in a network maintain boundaries between these practices and control the movement of meaning across practices. These relations have implications for who has access to the conventions of the dominant practices. For example in mathematics education, research publications written in English may hold more value than those written in other languages (Meaney, 2013). Here we choose to capitalize the word Political to signify power working in this way at the macro-level.

The relation between the wider network of socio-Political practices and what happens at the micro-level of the research interview or the research writing process is dialectical (de Freitas & Zolkower, 2009). On the one hand, the practice of research and the wider network of which it forms part is not just background to the research. Rather these practices actually shape and give meaning to what the researcher and participant say in an interview, what the researcher writes in a research article, and how researchers collaborate on their writing. These practices offer subject positionings for both the researcher and the participant within the available discourses (Davies, 1991; Fairclough, 2003). Or in the words of Walshaw (2013): "an individual's performance as a member of a social group occurs differently in relation to his or her positioning within each social context" (p. 101).

On the other hand, what a participant says in an interview and the researcher's choices—the questions, the theoretical concepts, what and how to write and in what language, the knowledge produced—are not neutral but give meaning to the practice (D'Ambrosio et al., 2013). Participants act agentically (Biesta, 2009; Stinson,

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[3] The use of upper and lower case letters to distinguish between macro- and micro-levels of the social such as presented here has been used by, for example, Janks (2010) to distinguish between *Political* and *political* and by Gee (2005) to distinguish between *Discourse* and *discourse*. We find two levels or scales—the micro- and macro-levels—appropriate for our purposes, but acknowledge the description by others in the context of mathematics education using multiple scales (e.g., Herbel-Eisenmann, Wagner, Johnson, Suh, & Figuera, 2015).

2008), positioning themselves in ways that are reflexive, relational, and contextual (Wagner & Herbel-Eisenmann, 2009; Walshaw, 2013). Thus, at the micro-level, discourse itself is "a place where relations of power are actually exercised and enacted" (Fairclough, 2001, p. 36). A discursive event—such as a research interview or research writing event—is a site of both reproduction and resistance (Gutiérrez, 2013), as participants seek to control the content of what is said/done, on the language form used, on the social relations that the participants enter into, and on the positionings available for participants (Fairclough, 2001). We use political to refer to power working in researcher–participant and researcher–researcher relations in the writing process at the micro-level of discursive events. This use recognizes that power to act agentically may not be equally distributed between participants in a practice (Fairclough, 2001).

The concepts of power and positionings presented here point to the potential affordances and constraints of research writing. On the one hand, given that how power works to position participants in a network of socio-Political practices is opaque to those participants (Fairclough, 2001; Walshaw, 2013), this writing has the potential to bring the workings of power in mathematics education into view. This writing, however, is unavoidably structured by dominant discourses (Apple, 1995) and is subjective and contested (Walshaw, 2011). This does not mean that all research writing is "equal, but it does imply an ethically responsible engagement" (Walshaw, 2011, p. 9). In the case of this article, the research writing is in and across contexts of difference. Thus, we turn next to the concept of ethics within the socio-p/Political turn.

## Ethical Action in the Socio-p/Political Turn

Consistent with others in mathematics education (e.g., Atweh & Brady, 2009; Boylan, 2013; Radford, 2008), we do not use the word *ethical* for a set of normative codes. Rather we use the term as an adverb to describe caring and responsible attitudes and action in relations between researcher–participant and researcher–researcher in contexts of difference. Others here are "totally *other*" than the self (Atweh, 2013, p. 8, emphasis in the original) and not the same as "I." Acknowledging Atweh's (2013) concerns about the relations between poststructuralist concepts such as power and ethical decisions, we suggest, consistent with Walshaw (2013), that the notions of power and positionings provide a lens to view ethical action, with the focus here on our ethical writing practice.

First, we note that because a socio-p/Political practice by definition includes particular ways of being for participants, relations between these participants, and values on what is "right," a practice necessarily includes ethical attitudes, action and relations as described above. Similar to the classroom described by Radford (2008), we argue that research practice and the writing that gives it meaning is an "ethico-political space of the continuous renewing of being and knowing" (p. 229).

We believe that mathematics education research, and here in particular the writing process, is a socio-p/Political space where ethical and political considerations need to be carefully acknowledged.

Second, the notion of power reminds us that our research writing is not neutral, it always advocates a moral-political argument (Adler & Lerman, 2003). This perspective is not a reductionist view that any writing will do. Maxwell (1992), working from a critical realist perspective, suggests that the validity of an account (such as our research writing) should be based on "the implications and consequences of adopting and acting on a particular account," with not all accounts, "equally useful, credible, or legitimate" (pp. 282–283). Adler and Lerman (2003) argue that it is the duty of the mathematics education researcher to engage continually in the struggle to get descriptions "right" and make them "count." For them, this ongoing ethical action is about producing research that not just meets the quality and ethical requirements of the mathematics education research community (e.g., validity, rigour, confidentiality, anonymity) but that also represents the researched in a comprehensive, respectful manner that matters in the empirical context.

## Guiding Questions for Ethical Action in Research Writing

In this section, we list multi-level questions that we propose as a guide toward an ethical attitude in the research writing process. These questions arose in the interaction between the concepts of the socio-p/Political turn and our research writing collaboration. This collaboration was characterized by relations of cultural, language, social, and p/Political difference in researcher–participant and researcher–researcher relations in and across contexts.

### *Guiding Questions about Researcher–Participant Relations*

How does the macro-level socio-Political context shape the researcher's political choices when writing about the narrated experiences of the participant? More specifically:

- What positionings does the socio-Political context offer for the participant in terms of what counts for mathematical participation?
- How does the socio-Political context position the researcher and participant relative to one another?

How do the researcher's micro-level political choices position the participant? More specifically:

- Which positionings are (in)visible in the writing, and with what implications for the participant? Might these positionings reproduce existing stereotypes and do harm?
- How does the researcher work across different data sources and different timescales to give meaning to the complex ways in which the participant positions herself or himself?
- How does the researcher attend to the circulation of power between the researcher and participant during the research process?

*Guiding Questions about Researcher–Researcher Relations*

How does the socio-Political context shape the collaborating researchers' political choices when writing for publication? More specifically:

- How does the socio-Political context position the researchers relative to one another?
- What positionings does the socio-Political context offer for researchers in terms of what matters for participation in the wider mathematics education research community?
- How do collaborating researchers communicate the socio-Political context of their research to readers in different contexts to avoid essentializing and stigmatizing individuals in marginalized contexts and practices?

How do micro-level political choices of collaborating researchers position each other and the collaboration? More specifically:

- How do collaborating researchers' political choices position the researchers within the research community, and with what implications?
- How do collaborating researchers best respect their differences and similarities in a caring way, while asking uncomfortable questions that (re)position one another out of her or his comfort zones?

Before illustrating the use of these questions in the form of a dialogue, we contextualise the dialogue by presenting more about our individual research projects. The extracts presented in these descriptions represent particular moments in our attempts to address the challenges of writing about students in our individual research projects.

# Different Studies, Different Contexts

*Annica's Research in the Political North*

The narrative about Ara in this article originates in Annica's research on students' identities and relationships with mathematics education in a context of being exposed to critical mathematics in their first year in upper secondary school (Andersson, 2011a, 2011b). The ethnographic data comes from interviews, classroom blogs, students' and teachers' logbooks, everyday conversations, and field notes. The study aimed to explore how students narrated identities—specifically those students' who talked about themselves as "disliking," "not feeling well," or even "hating" mathematics—changed in relation with different contexts that played out in the classrooms. It was particularly problematic, however, to write about Ara's narratives and relationships with mathematics due to the political climate and risk for further stigmatization of a specific group of students. His narratives therefore became foregrounded during the collaboration with Kate.

Ara is a student who talks about himself as being an immigrant, male, Muslim, poor, pizza-baker, and war-experienced. Hence the research writings may induce stigmatization because certain aspects of him as a whole individual become focused while others are not visible. Ara could, from the researcher perspective, be labelled as struggling to succeed, fighting with his siblings to be able to prioritize schooling, but also trying to position himself in discourses he does not really grasp or have access to.

When re-listening to the recorded interviews, it is evident how he tries to cope and to be polite, and he strives, at least initially, to talk about his experiences and himself in a way he might believe he wants the researcher to hear. He talks about wanting to be good in maths, wanting his parents to be proud of him and to be a good Muslim.

His actions, however, are also problematic to address, as he later in our relationship shares stories about stealing video-films, prior school experiences of cheating on maths tests to pass, and so forth. Every Wednesday when the local market outside the school is on and students buy their fruits, Ara comes and sits beside Annica and asks if she can share because he is hungry as "I didn't have time to eat breakfast because I worked late again, to midnight" [*jag har inte hunnit äta frukost idag eftersom jag arbetade till midnatt igen*]. All these different present identities and actions are his, as told at those particular points in time.

**Annica – Researcher, teacher, female, multilingual Swedish-speaking, middleclass, White, Swede**

*Kate's Research in the Political South*[4]

The narrative about Luthando used in this article was produced in a longitudinal study of students' transition to and through undergraduate studies at an elite, former "white," urban university in South Africa (Kapp et al., 2014; le Roux,

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[4] This project is financially supported by the Andrew W. Mellon Foundation.

2017).[5] The study aimed to understand the ways in which the transition of "black" students—from mainly first generation, working-class, single parent families and for whom English is generally not a first language—may be enabled or constrained by the socio-Political context in South Africa, as well as students' agentic action with the positionings in this context. The analysis of interview texts conducted annually during a student's undergraduate degree was informed theoretically by the socio-p/Political turn and performed using tools from critical discourse analysis.

Luthando's application to study engineering at an elite, urban, English medium, former white university in South Africa was not successful, but he was accepted to study his second choice of science. On account of his home and schooling background he was placed in an extended academic programme designed to provide him with the foundations for studying university science. Initially, Luthando resented his not being given a choice with regard to his positioning in this programme and he talked about his "struggles" in university mathematics. However, within a few months he said he was "doing good" and said the additional support was an "advantage." Finding money to travel home for the vacation was difficult, but on campus he could use his financial aid to buy food and books.

After completing 2 years in the extended programme, Luthando enrolled for advanced mathematics which he described as "just definitions, it's proofs." He talked about being "totally lost" while "really smart students, students who really, really love maths" interacted with the lecturer. He gradually lost his "love" of mathematics, stopped attending classes, and failed one of his final courses. He felt the extended programme had been a "disadvantage" for his progress in mathematics. Luthando said that he "did not come from a very privileged background and my mom had to make do every day," but he described other university students as "really, really disadvantaged." Nonetheless, the finances of his family and for his studies recurred in his interviews.

In his fifth year at the university, Luthando was permitted to enroll in an engineering degree on condition he passed certain mathematics courses. He secured a bursary to finance his studies, he felt motivated to pass mathematics, and he spoke about providing his family and himself with a "good life" when qualified as an engineer.

**Kate – Researcher, teacher, female, monolingual English-speaking, middle class, White, South African**

## Talking about Our Writing, Participants, and Collaboration

In this dialogue between the two of us (Annica and Kate), we illustrate how we use the questions informed by the concepts from the socio-p/Political turn to guide what we refer to as a caring, ethical attitude toward the researcher–participant and researcher–researcher relations during the research writing process. Due to the nature of a dialogue, this exchange does not follow the order of the guiding questions as listed, so we explicitly use the language of the questions to foreground their use. We also bring other mathematics education researchers into our conversation

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[5] Racial classifications such as "white" and "black" (for "black African," "coloured" and "Indian") are still used in discourses about educational performance in South Africa, despite a growing recognition of how the construct of race works with class, language, and geography in constituting performance.

as necessary. We acknowledge that the research writing process is not stand-alone but is informed by all the other choices made in the research process. We point to this as necessary.

**Annica:** Kate, I am interested in your political choice in your writing about participation in university mathematics in South Africa, to write about Luthando's talk about money and food. What are you expecting the audience—for example a reader such as myself, positioned in the Political North—to know about the macro-level socio-Political context that shapes your research?

**Kate:** Annica, your question challenges me to reflect on what positionings in South Africa shape my writing choices. It also alerts me to my positioning relative to others in the mathematics education research community and how I make my choices explicit to the international community. My description of Luthando recognizes the material, discursive, and psychological load on students' lived experiences of positionings such as "working class," "black African," and "English second language." In South Africa, positionings such as these have been shown to matter with respect to accessing mathematical practices and the related symbolic and material rewards (Soudien, 2012; Spaull, 2013). So, my choice to write about these positionings is not idiosyncratic but identifies the participants in ways that matter in mathematics education in South Africa.

**Annica:** In the Swedish context, Ara's positioning as a Kurdish first language speaker may matter, and his related positioning as "*blatte*"[6] [immigrant] in turn positions him as marginalized relative to mathematical practices (Marks, 2005; Svensson, Meaney, & Norén, 2014). These power relations between language discourses are also present in Swedish mathematics teacher education (Skog & Andersson, 2014). My political choice to position myself as a Swedish-speaking citizen of Sweden in my writing about Ara positions me as having different experiences of mathematics education to the research participants in my socio-Political context. While my self-identification is necessarily selective (Bartell & Johnson, 2013), this positioning signals that I have not experienced Ara's load in ways that matter when learning mathematics in Sweden. Saying who we are in our writing (as we do in naming ourselves as researchers in the introduction to this article) is not just about being transparent but part of accounting for our own positionings in the research process as suggested by Chronaki (2004) and Valero (2004). Our self-identification serves as a constant reminder of the asymmetries in the political choices of researcher and participant in our respective socio-Political contexts.

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[6] Can be interpreted as derogatory, "a dark foreigner" (Svenska Akademin, 1998).

**Kate:** Yet, the political choices about our writing (and indeed, other aspects of our research) that we discuss here position us as researchers in particular ways in the mathematics education research community, and we should be alert to the implications. First, by "zooming out" (Lerman, 1998, p. 67) to the wider socio-Political contexts in which our research is located, we run the risk that our research will not be considered *mathematics* education research (Adler & Lerman, 2003; Bartell & Johnson, 2013; Martin, Gholson, & Leonard, 2010). This risk may result in us being positioned as writers who have to justify—within space constraints—why context matters. It may mean that we encounter significant challenges in the review process (Parks & Schmeichel, 2013). It may position us as researchers who contribute only to journal special issues and particular conference strands (Bartell & Johnson, 2013; Bullock, 2014; Stinson, 2010). Secondly, our political choice to self-identify by occupation, gender, race, class, language and geographical region in our writing resists the dominant referencing style of author surname and date. Our agency in this respect has implications for where we publish and, again, our positionings in the mathematics education research community.

**Annica:** We also need to be alert to how our different socio-Political contexts position us—in asymmetrical ways—in this research community, and what these positionings mean for our collaboration and our participation in the community. For example, your positioning as a South African researcher positions you within the asymmetrical Political North/South power relations within the publishing space of the mathematics education research community (Adler & Lerman, 2003; Ernest, 2016). Yet, my positioning as a Swedish-speaking researcher and our political choice to write for publication in English, signals asymmetries in the power relations in our research collaboration in the English research writing space. I am positioned as less knowledgeable than you with respect to writing in English in this space (Meaney, 2013).

These asymmetrical power relations have required careful political choices in our writing collaboration. For example, in writing articles such as this, I have required a greater proportion of the word length to convey my meanings and to include both Ara's Swedish transcripts and the translations thereof. Doing so has meant that we have had to negotiate the precious and tight writing space between us. On the other hand, our conversations have encouraged me to write more boldly in the English writing space.

**Kate:** For me, as someone who is positioned differently relative to you in terms of linguistic resources for publishing in English, an ethical attitude in our collaboration is not just about *what* questions we pose to one another. Crucially, it is about making careful discursive choices about *how* I ask these questions, particularly in my written feedback to you. How do I word in-text comments and ques-

tions, when there is a possibility for misunderstanding that may undermine our ethic of care? How do I contribute to an article such as this in a manner that allows both our voices to come to the fore? Certainly, the visual cues afforded when communicating via video-conferencing has enabled us to address these challenges of our collaboration, yet even this affordance has meant us being alert to inequities in access to online communication tools between the Political North and South.

**Annica:** Kate, I want to return now to your writing about Luthando, and explore what positionings the socio-Political context of South Africa offers for this mathematics student. The word "disadvantage" is visible in your writing about Luthando's interview text. Whose word is this? Maybe Luthando is "advantaged" in ways that are not valued by the dominant socio-Political practices? Gutiérrez (2013) challenges us to consider whether the positionings we use in our research are consistent with those the students themselves would choose.

**Kate:** My choice to use quotes for the word "disadvantage" in my writing signals that this is the word used by Luthando in the interview to describe his positioning in the socio-Political context of South Africa. The term "disadvantage" is commonly used in South Africa to acknowledge the material effects on educational performance of certain students' past and current positionings. However, its use is critiqued as stigmatizing certain students as in deficit. My choice to reproduce Luthando's talk of his relative "disadvantage" and to quote this rather than paraphrase signals how his own political choices in the research interview are shaped by this wider socio-Political context. Thus, responding to Gutiérrez's (2013) challenge is not just about asking for Luthando's perspective on my writing to confirm "interpretive validity" (Maxwell, 1992).

Indeed, the construct of "disadvantage" has traditionally been used by the university to select and place students in what are called "regular," "mainstream," or "support" academic development programmes. Yet institutional statistics and qualitative research (e.g., Kessi, 2013; le Roux & Adler, 2016) show that positioning as an extended programme student may in turn define an individual's opportunities to be a university mathematics student, and also how she or he sees herself or himself more generally.

My use of scare quotes in this dialogue to describe the positionings of South African university students shows how my writing is "heavily laden with the meanings of others" (Walshaw, 2013, p. 116). While these positionings might matter in my context, I need to be alert to how my political writing choices may become reified and reproduce existing stereotypes.

**Annica:** Yes, my choice of quotes from Ara's talk indicates that positionings as an immigrant, Kurdish speaking, young male pizza-baker are part of Ara's talk

as a student who "*kämpar för att få ihop det*" [struggles to get it all together]. These positionings as such do not qualify him for what is called "special education" in Sweden, but he indicates that he might fail just because of these positionings. At the micro-level, Luthando and Ara's choices are political as they act agentically within the set of power relations to position themselves in various practices. These actions may involve reproducing, redefining, or rejecting the positionings they identify in their respective contexts. Ara comes to school hungry and tired, as he does not get enough hours in between work end and school start. He knows he has not done his homework. He says it is hard for him to concentrate. However, he also shares the school culture knowledge capital (Bourdieu & Passeron, 1990) that "*för att inte misslyckas igen så måste jag göra alltihop och sitta där framme med dom som kan istället för där bak*" [to not fail again I have to do it all and also sit in front with the clever students instead of in the back].

Yet, similar to you, I find the ethical responsibility of not writing about certain positionings analytically in ways that become reified and have the potential to contribute to further stigmatization and harm so hard to practice in my writing. It is so difficult for me to write about Ara's home background (e.g., "eight siblings" and in particular the impact on him from older brothers). He is and takes the actions he does because he is who he is and hence marginalized in both open and subtle ways in our society and in school by teachers and peers. Ara cannot oppose his brother's work demands, as he is the younger one. He talks about "*tänk att bara få rymma och liksom bestämma allt själv*" [wanting to escape and take all decisions myself], but he cannot do that for several reasons. He needs to help out with the support of his family and younger siblings. This helping suggests a recognition of the load that is both visible and invisible. For me, he is one of those students so easy to label and hence stigmatize because certain aspects of a whole individual are focused while others are not visible in our research texts—as Valero (2004) reminds us.

Yet, the notion of positionings within the socio-p/Political turn helps me to move forward in these writing challenges. As suggested by Walshaw (2013), doing so means that we are not attempting to write on behalf of the research participants but aim to understand the complex ways in which they work with the available positionings in their contexts. In addition, our use of critical theoretical concepts positions us as researchers who bring into view how power and positionings work to include/exclude students from participation in mathematics. This view tends to be opaque to participants in mathematics education (Fairclough, 2001).

**Kate:** Yes, my positioning as an English-speaking, middle class, white, South African suggests that, as a researcher, I cannot draw on my "lived experiences" (Gutiérrez, 2013, p. 57) as marginalized in my context. Yet, Valero (2014) reminds us that as researchers we can bring theory to this task of understanding the complex positioning work of the researched. Indeed, my "bearing witness" and "orienting"

experiences (Foote & Bartell, 2011, p. 52) in South Africa suggest that making this work visible is my only choice.

Annica, you have mentioned the challenge of different positionings being (in)visible in your writing about Ara, and the need to consider the implications thereof for the participant. Because my interview study was longitudinal, I face the challenge of writing about how Luthando, over a period of 5 years, variously represents the socio-Political context and positions himself therein. For example, his description of the extended programme varies as an "advantage"/"disadvantage" over time, as does his positioning of himself as "disadvantaged" in the socio-Political context. It is a challenge to write—in the linear manner that counts for publication by the community—respectfully and comprehensively about Luthando's complex positioning work across timescales.

**Annica:** How to attend to the circulation of power between Ara and myself during the research process is a consideration that I have been dealing with. The ways we position each other through the research is not static, and here I give a couple of examples to illustrate different positionings in our relationship. As suggested by Wagner and Herbel-Eisenmann (2009), the positionings were reflexive and developed through our conversations. I give three examples. First, Ara positions me as somebody he can trust and, for example, can share his rougher family and other stories with. However, he also positions me as an authority that knows what to do, especially in mathematics education but also where to ask for societal health and youth support. A last example may be the way he positions me as "different" to him as the *you* in the quote; "we don't talk about it with you." Here, I become positioned as one of the Swedes as opposed to the immigrants.

Ara accepted positionings as a student who possesses knowledge about mathematics education that is important to share with others. He also positioned himself as a student about to fail in mathematics, as an immigrant and as a student from a low socio-economic background (just to give some examples). I accepted and also mirrored these different positionings proposed by Ara, as he mirrored my positionings. As van Langenhove and Harré (1999) point out: positionings are the ways in which people use action and speech to arrange social structures.

The examples I have given of the different positionings in my conversations with Ara illustrate well the reflexive, relational, and contextual nature of the power relations between researcher and participant. Yet, I emphasize that the nature of these power relations shifts again when the researcher comes to write about the interviews. Through recognizing my power as a researcher in this context, I strive to make further careful choices that aim at building a rich and caring description of the participant. First, in my wider study I asked participants to select their own pseudonyms. However, Ara chose not to. Thus, I turned to a Kurdish language teacher at Ara's school who suggested and explained different Kurdish male

names. I chose "Ara," meaning Wind, which represented the elusiveness of my research relationship with Ara at that particular moment in time. Second, following Meaney (2013), I carefully represent Ara's talk both in Swedish and in English. This move positions Ara and me in the context; Ara speaks Kurdish as his first language, I interviewed Ara in Swedish and transcribed in Swedish (Ara's second language), I then translated the Swedish transcripts into English for publication. As we have already discussed, the fact that English is not my first language means that this final translation itself positions me in another set of power relations with you as research collaborator and within the research community.

Kate, I want to end with one question about your writing about Luthando. I wondered about the "happy ending" to your story about Luthando. I think we, as researchers tend to tell the good news stories. Why? Is there something in your context that shapes the story you tell?

**Kate:** Annica, your short summary, as a reader, of my writing about Luthando is an eye-opener to me as a writer. It alerts me to what positionings are (in)visible in my writing. It also talks to my struggle of communicating the complexity of my socio-Political context to readers in other contexts. How do I signal, for example, what words such as "dis/advantage" and "success/failure" mean materially, socially, and psychologically over time for students in this context?

Certainly, Luthando could be positioned as "successful" by the institutional statistics, in that he was one of the few students with his background who enrolled for a third-year undergraduate mathematics course. Indeed, some researchers have argued that it is important to write about the experiences of academically "successful" students like Luthando (e.g., Berry, 2008). In addition, methodologically, it is these students who participated in the longitudinal study for the longest time, and our attempts to keep contact with the students who left the study for various reasons had limited success.

However, the concepts of the socio-p/Political turn mean that knowing in mathematics cannot be separated from who one is and how one relates to others (Radford, 2008; Valero, 2014) and that the experiences of students positioned as "disadvantaged" and "successful" cannot be placed in "narrow boxes" (Erwin, 2012, p. 97). The longitudinal study provides the opportunity for me to write about how Luthando positions himself relative to what his performance in mathematics assessments and his relations with others over time say about him. For example, he positions himself variously as a school mathematics student who is known "by my marks," as a student who "struggles" in first-year university mathematics, as a second-year student who is "doing good" relative to others who share his background, as a student who is "totally lost" and excluded from the "nice conversations" in his mathematics classroom in his third year, and as a student who has to "separate my personal life from my studies" so that he can fulfil his family's expectations of him.

Descriptions such as these show the complex agentic positioning work enacted by students like Luthando as he bumps up against institutional structures. Not getting the description "right" (Adler & Lerman, 2003) in the sense that Luthando's experience of learning mathematics at the university seems like a "good news" story as you suggest, means that these structural constraints which we as researchers seek to make visible, remain opaque.

## Concluding Thoughts

The dialogue presented in this article represents a particular form of research collaboration between researchers interested in inclusion/exclusion in mathematics education. We also share a concern about how to write about research participants whose cultural, linguistic, social, geographical, political, and so on experiences may differ from our own. Yet our locations in the Political North and Political South respectively, mean that we ourselves bring different experiences to this writing collaboration. We suggest that our conversations about our individual research writing as well as the collaborative writing to which this led opened the space for our "looking closely at [our] own work" (Bartell & Johnson, 2013, p. 42) and our asking "uncomfortable" (p. 41) or troubling questions about the micro- and macro-contexts of our research production.

Walshaw (2013) argues that adopting a poststructuralist perspective allows the researcher to "begin to ask questions we have not previously thought to ask" (p. 116) and provides a language to talk about "ethical practical action" (p. 101). We argue that our writing collaboration—informed by theoretical concepts from the socio-p/Political turn—allows us to adopt an ethical attitude in researcher–participant and researcher–researcher relations in the research writing process. This attitude involves asking multi-level guiding questions of oneself and the research collaborator:

- How does the macro-level socio-Political context shape the researcher's political choices when writing about the narrated experiences of the participant?
- How do the researcher's micro-level political choices position the participant?
- How does the socio-Political context shape the collaborating researchers' political choices when writing for publication?
- How do micro-level political choices of collaborating researchers position each other and the collaboration?

These four questions (and their sub-questions) prompt us to think about power, social relations, positionings, and ethical action in the micro-level activity of

collaborative research writing. They also allow us to locate this writing activity in wider networks of social practices and the power relations that sustain them, and to consider how our writing activity is both shaped by and shapes this macro-level context. Although these questions derived out of discussions about our research writing challenges, we note that they also apply to other aspects of the research process. We suggest that researchers should reflect on these questions in a reflexive state of mind.

We suggest that it is questions such as these which allow us in an ethical and caring way to bring into view the need to do the "risky work" (Parks & Schmeichel, 2013, p. 248) of zooming out beyond the mathematics and writing about issues of race, class, religion, and immigration in mathematics education but also to support one another in this work. In addition, the use of these guiding questions in our writing collaboration has meant "unpacking what seems 'natural'" in our writing, and "reflecting on what we are today, how we have come to be this way, and the consequences of our actions" (Walshaw, 2013, p. 116) and hence to think differently about our political choices when writing with and about others in and across contexts of difference.

## References

Adler, J., & Lerman, S. (2003). Getting the description right and making it count: Ethical practice in mathematics education research. In A. J. Bishop, M. A. Clements, C. Keitel, J. Kilpatrick, & F. K. S. Leung (Eds.), *Second international handbook of mathematics education* (Vol. 2, pp. 441–470). Dordrecht, The Netherlands: Kluwer.

Amidon, J. (2013). Teaching mathematics as agape: Responding to oppression with unconditional love. *Journal of Urban Mathematics Education*, *6*(1), 19–27. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/207/132

Andersson, A. (2011a). A "Curling Teacher" in mathematics education: Teacher identities and pedagogy development. *Mathematics Education Research Journal*, *23*(4), 437–454.

Andersson, A. (2011b). *Engagement in education: Identity narratives and agency in the contexts of mathematics education*. Published doctoral thesis. Aalborg, Denmark: Aalborg University, Uniprint.

Andersson, A., & le Roux, K. (2015). Researchers and researched as Other within the sociop/Political turn. In S. Mukhopadhyay & B. Greer (Eds.), *Proceedings of the Eighth International Mathematics Education and Society Conference* (Vol. 2, pp. 255–269). Portland, OR: MES8.

Andersson, A., & Wagner, D. (2016). Language repertoires for mathematical and other discourses. In M. B. Wood, E. E. Turner, M. Civil, & J. A. Eli (Eds.), *Proceedings of the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1166–1172). Tucson, AZ: The University of Arizona.

Apple, M. W. (1995). Taking power seriously: New directions in equity in mathematics education and beyond. In W. G. Secada, E. Fennema, & L. B. Adajian (Eds.), *New directions for equity in mathematics education* (pp. 329–348). Cambridge, United Kingdom: Cambridge University Press.

Atweh, B. (2013). Is the *good* a desire or an obligation? The possibility of ethics for mathematics education. *Philosophy of Mathematics Education Journal*, *27*, 1–11.

Atweh, B., & Brady, K. (2009). Socially response-able mathematics education: Implications of an ethical approach. *Eurasia Journal of Mathematics, Science & Technology Education*, *5*(3), 267–276.

Atweh, B., & Clarkson, P. (2002). Mathematics educators' views about globalization and internationalization of their discipline: Preliminary findings. In P. Valero & O. Skovsmose (Eds.), *Proceedings of the Third International Mathematics Education and Society Conference* (Vol. 1, pp. 114–122). Helsingør, Denmark: Centre for Research in Learning Mathematics.

Bartell, T. G. (2011). Caring, race, culture and power: A research synthesis towards supporting mathematics teachers in caring with awareness. *Journal of Urban Mathematics Education*, *4*(1), 50–74. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/128/84

Bartell, T. G., & Johnson, K. R. (2013). Making unseen privilege visible in mathematics education research. *Journal of Urban Mathematics Education*, *6*(1), 35–44. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/203/134

Berry, R. Q., III. (2008). Access to upper-level mathematics: The stories of successful African American middle school boys. *Journal for Research in Mathematics Education*, *39*(5), 464–488.

Biesta, G. (2009). Good education in an age of measurement: On the need to reconnect with the question of purpose in education. *Educational Assessment, Evaluation and Accountability, 21*(1), 33–46.

Bourdieu, P., & Passeron, J. C. (1990). *Reproduction in education, society and culture* (Vol. 4). London, United Kingdom: Sage.

Boylan, M. (2013). Mathematics education and relational ethics: Dimensions and sources. Paper presented at *Third Mathematics Education and Contemporary Theory Conference*, Manchester, United Kingdom. Retrieved from http://www.esri.mmu.ac.uk/mect2/papers_13/boylan.pdf

Bullock, E. C. (2014). Danger: Ghetto ahead? [Editorial]. *Journal of Urban Mathematics Education*, *7*(1), 1–6. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/234/156

Chronaki, A. (2004). Researching the school mathematics culture of 'others.' Creating a self-other dialogue. In P. Valero & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education: Issues of power in theory and methodology* (pp. 145–165). Boston, MA: Kluwer.

D'Ambrosio, B., Frankenstein, M., Gutiérrez, R., Kastberg, S., Martin, D. B., Moschkovich, J., Taylor, E., & Barnes, D. (2013). Positioning oneself in mathematics education research. *Journal for Research in Mathematics Education*, *44*(1), 11–22.

Davies, B. (1991). The concept of agency: A feminist poststructuralist analysis. *Social Analysis: The International Journal of Social and Cultural Practice*, *30*, 42–53.

de Freitas, E., & Zolkower, B. (2009). Using social semiotics to prepare mathematics teachers to teach for social justice. *Journal of Mathematics Teacher Education*, *12*(3), 187–203.

Ernest, P. (2016). Mathematics education ideologies and globalization. In P. Ernest, B. Sriraman, & N. Ernest (Eds.), *Critical mathematics education: Theory, praxis and reality* (pp. 35–79). Charlotte, NC: Information Age.

Erwin, K. (2012). Race and race thinking: Reflections in theory and practice for researchers in South Africa and beyond. *Transformation, 79*, 93–113.

Fairclough, N. (2001). *Language and power* (2nd ed.). Harlow, United Kingdom: Longman.

Fairclough, N. (2003). *Analysing discourse: Textual analysis in social research*. London, United Kingdom: Routledge.

Foote, M. Q., & Bartell, T. G. (2011). Pathways to equity in mathematics education: How life experiences impact researcher positionality. *Educational Studies in Mathematics*, *78*(1), 45–68.

Foucault, M. (1977). *Discipline and punish: The birth of the prison*. New York City, NY: Random House.

Gee, J. P. (2005). *An introduction to discourse analysis*. London, United Kingdom: Routledge.

Gutiérrez, R. (2013). The sociopolitical turn in mathematics education. *Journal for Research in Mathematics Education*, *44*(1), 37–68.

Hand, V., & Masters Goffney, I. (2013). "All for one and one for all": Negotiating solidarity around power and oppression in mathematics education. *Journal of Urban Mathematics Education*, *6*(1), 28–34. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/206/133

Harré, R., & van Langenhove, L. (Eds.). (1998). *Positioning theory: Moral contexts of intentional action*. Oxford, United Kingdom: Blackwell.

Herbel-Eisenmann, B. A., Bartell, T. G., Breyfolge, M. L., Bieda, K., Crespo, S., Dominguez, H., & Drake, C. (2013). Strong is the silence: Challenging interlocking systems of privilege and oppression in mathematics teacher education. *Journal of Urban Mathematics Education*, *6*(1), 6–18. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/212/131

Herbel-Eisenmann, B. A., Wagner, D., Johnson, K. R., Suh, H., & Figueras, H. (2015). Positioning in mathematics education: Revelations on an imported theory. *Educational Studies in Mathematics*, *89*(2), 185–204.

Janks, H. (2010). Language, power and pedagogies. In N. H. Hornberger & S. L. McKay (Eds.), *Sociolinguistics and language education* (pp. 40–61). Bristol, United Kingdom: Multilingual Matters.

Kapp, R., Badenhorst, E., Bangeni, B., Craig, T. S., Janse van Rensburg, V., le Roux, K., … van Pletzen, E. (2014). Successful students' negotiation of township schooling in contemporary South Africa. *Perspectives in Education*, *32*(3), 50–61.

Kessi, S. (2013). Transforming historically white universities: Students and the politics of racial representation. *New Agenda, 50*, 53–55.

le Roux, K. (2017). Moving up or down the ladder: University mathematics students talk about progress. In A. Chronaki (Ed.), *Proceedings of the Ninth International Mathematics Education and Society Conference* (Vol. 2, pp. 665−675). Volos, Greece: MES9.

le Roux, K., & Adler, A. (2016). A critical discourse analysis of practical problems in a foundation mathematics course at a South African university. *Educational Studies in Mathematics, 91*(2), 227−246.

Lerman, S. (1998). A moment in the zoom of a lens: Towards a discursive psychology of mathematics teaching and learning. In A. Oliver & K. Newstead (Eds.), *Proceedings of the 22nd Conference of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 66–81). Stellenbosch, South Africa: Stellenbosch University.

Marks, G. N. (2005). Accounting for immigrant non-immigrant differences in reading and mathematics in twenty countries. *Ethnic and Racial Studies*, *28*(5), 925–946.

Martin, D. B., Gholson, M. L., & Leonard, J. (2010). Mathematics as gatekeeper: Power and privilege in the production of knowledge. *Journal of Urban Mathematics Education*, *3*(2), 12–24. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/95/57

Maxwell, J. A. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, *62*(3), 279–300.

Meaney, T. (2004). The fly on the edge of the porridge bowl: Outsider research in mathematics education. In P. Valero & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education: Issues of power in theory and methodology* (pp. 167−183). Boston, MA: Kluwer.

Meaney, T. (2013). The privileging of English in mathematics education research, just a necessary evil? In M. Berger, K. Brodie, V. Frith, & K. le Roux (Eds.), *Proceedings of the Seventh International Mathematics Education and Society Conference* (Vol. 1, pp. 65–84). Cape Town, South Africa: MES7.

Parks, A. N., & Schmeichel, M. (2013). Obstacles to addressing race and ethnicity in the mathematics education literature. *Journal for Research in Mathematics Education*, *43*(3), 238–252.

Radford, L. (2008). The ethics of being and knowing: Towards a cultural theory of learning. In L. Radford, G. Schubring, & F. Seeger (Eds.), *Semiotics in mathematics education: Epistemology, history, classroom, and culture* (pp. 215–234). Rotterdam, The Netherlands: Sense.

Skog, K., & Andersson, A. (2014). Exploring discursive positioning as an analytical tool for understanding becoming mathematics teachers' identities. *Mathematics Education Research Journal, 27*(1), 65–82.

Soudien, C. (2012). *Realising the dream: Unlearning the logic of race in the South African school*. Cape Town, South Africa: Human Sciences Research Council.

Spaull, N. (2013). South Africa's education crisis: The quality of education in South Africa 1994–2011 (Report commissioned by the Centre for Development Enterprise). Retrieved from http://www.section27.org.za/wp-content/uploads/2013/10/Spaull-2013-CDE-report-South-Africas-Education-Crisis.pdf

Stinson, D. W. (2008). Negotiating sociocultural discourses: The counter-storytelling of academically (and mathematically) successful African American male students. *American Educational Research Journal*, *45*(4), 975–1010.

Stinson, D. W. (2010). The Sixth International Mathematics Education and Society conference: Finding freedom in a mathematics education ghetto [Editorial]. *Journal of Urban Mathematics Education*, *3*(1), 1–8. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/91/47

Svenska Akademien. (1998). Svenska akademiens ordlista över svenska språket. (SAOL) (12. uppl.). Stockholm: Norstedts ordbok

Svensson, P., Meaney, T., & Norén, E. (2014). Immigrant students' perceptions of their possibilities to learn mathematics: The case of homework. *For the Learning of Mathematics*, *34*(3), 32–37.

Valero, P. (2004). Socio-political perspectives on mathematics education. In P. Valero & R. Zevenbergen (Eds.), *Researching the socio-political dimensions of mathematics education: Issues of power in theory and methodology* (pp. 5–23). Boston, MA: Kluwer.

Valero, P. (2007). A socio-political look at equity in the school organization of mathematics education. *Zentralblatt für Didaktik der Mathematik (ZDM)*, *39*(3), 225–233.

Valero, P. (2014). Cutting the calculations of social change with school mathematics. In P. Liljedahl, C. Nicol, S. Oesterle, & D. Allan (Eds.), *Proceedings of the Joint Meeting of PME 38 and PME-NA 36* (Vol. 1, pp. 73–77). Vancouver, Canada: PME.

van Langenhove, L. & Harré, R. (1999). Introducing positioning theory. In R. Harré & L. van Langenhove (Eds.), *Positioning theory: Moral contexts of intentional action* (pp. 14–31). Oxford, United Kingdom: Blackwell.

Wagner, D. (2012). Opening mathematics texts: Resisting the seduction. *Educational Studies in Mathematics*, *80*(1&2), 153–169.

Wagner, D., & Herbel-Eisenmann, B. (2009). Re-mythologizing mathematics through attention to classroom positioning. *Educational Studies in Mathematics*, *72*(1), 1–15.

Walshaw, M. (2011). Positive possibilities of rethinking (urban) mathematics education within a postmodern frame. *Journal of Urban Mathematics Education*, *4*(2), 7–14. Retrieved from http://ed-osprey.gsu.edu/ojs/index.php/JUME/article/view/141/89

Walshaw, M. (2013). Post-structuralism and ethical practical action: Issues of identity and power. *Journal for Research in Mathematics Education*, *44*(1), 100–118.