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# **Publishing as an English non dominant language author. First results from a survey of support offered by mathematics education journals**

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*With English as the language of the vast majority of highly regarded international journals in Didactics of Mathematics (research in mathematics education), authors who do not have English as their dominant language face the challenge of producing a text in a target language different from their working language (source language). The paper presents first results of a survey on how a number of highly recognised international journals in Didactics of Mathematics handle this issue and identifies some of the related challenges. Some challenges are linked to specific customs and norms related to the generation and credentialing of new knowledge within communities of research practice. Others are connected to semantic and pragmatic characteristics of transforming thoughts and texts from a source to a target language. The paper also provides insight into types of support offered by major journals to English non-dominant language authors.*

*Keywords: Translation, heteroglossia, centripetal versus centrifugal forces, journal survey.*

## **Coming to the issue**

This paper started in the experience of the author when publishing in journals of Didactics of Mathematics where the English language was obligatory. As I am not a native nor dominant<sup>1</sup> English speaking author, I had to express my ideas in English, which I had developed in a German speaking scientific community. My way out of this dilemma was asking a friend (Vince Geiger) to help me with transforming my texts from German English to Australian English. After some experiences with this simple arrangement, we came to reflect on this practice – what ended up in a presentation at a conference and later in a journal publication (see Geiger & Straesser, 2015). This publication was very well received and encouraged us to continue work on publishing about the issue of English non dominant language (EndL) authors in scientific journals of Didactics of Mathematics (see Geiger & Straesser 2017; Geiger, Margolinas, & Sträßer, 2018). In this paper I aim to progress this line of research inquiry by examining the ways in which major journals in mathematics education provide support for non-dominant English language authors.

## **Helpful concepts and ideas**

In addressing the issue of the challenges faced by EndL authors when attempting to publish in major international journals in mathematics education, two major issues stand out: the transformation from a source language into a target language, and heteroglossic considerations.

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<sup>1</sup> The word “dominant” is used deliberately, because it best covers the situation to be analysed. The Merriam-Webster Dictionary offers two major explanations for “dominant”: “more important, powerful, or successful than most or all others” or “most common”. As can be seen for some colleagues, the dominant language is not always the language with which a person has grown up. “Dominant” also captures the power relation inherent in the dominance of a language.

Publishing as an English non dominant language author in scientific journals inevitably invokes the challenge of transforming one's own dominant language, the *source language*, into English as the dominant language of international scientific discourse and of majors journals, which, at least in Didactics of Mathematics, is into the *target language* English – see section 3 for typical pitfalls as identified in the German/French/English context.

There are also challenges related to issues within a single language – normally discussed inside linguistics under the concept of *heteroglossia*. Heteroglossia was coined as a concept by translators of Bakhtin and provides a perspective relevant to learning a language different from a dominant language. The concept refers to the diverse, multiple layers of meaning and understanding embedded within speech and speech types (Barwell, 2014). In this respect, Busch (2014) distinguishes “between ... the multiplicity of (social-ideological) speech types or discourses, ... the diversity of (individual) voices, and [the] linguistic variation or the diversity of languages”, in distinguishing between multidiscursivity, multivoicedness and linguistic diversity (see Geiger & Straesser, 2015, p. 37). In particular, Bakhtin’s concepts of “*centripetal*” and “*centrifugal*” forces account for the tension that exists between a variety of languages or language types co-existing in communication within one language (Barwell, 2014). Centripetal forces place pressure on speakers or authors to adopt a single standardised linguistic code - an “official” language that must be adopted to gain full acceptance into a professional community or other social system. Working against this influence are centrifugal forces that push the language used by speakers and authors towards more diverse expression. Centrifugal forces arise because of differences between people, due to multivoicedness, and the multidiscursivity of linguistic diversity associated with geography, culture or membership of specific social groups. Such forces are seen at work within mathematics education through the diversity of its focuses and endeavours.

## **Challenges and pitfalls**

This section can be read as a summary of a number of types of challenges identified in previous research and draws primarily on work within English, German and French language contexts.

### **The question of the name of the discipline**

At least for researchers from French or German speaking communities, translating into English first starts with a choice of an adequate name of the researcher's “home discipline”. Is it *Didactique des Mathématiques*, *Mathematikdidaktik* or ... (Research in) Mathematics Education – as expected by anglophone communities? A loophole to this dilemma may be the rarely used *Science of Mathematics Education/Sciences de l'Éducation Mathématique / Wissenschaft vom Mathematikunterricht*. However, this solution is a marker of a major problem. Different language-based communities of practice of a discipline have chosen to use names for their research activity, now well established and deeply rooted historically, that carry “baggage” when used in other languages. From the European perspective, *Didactique/Didaktik*, for example, has wide acceptance because of the famous *Didactica Magna* by Comenius (1896/1907), often cited as foundational publication from the early days of the discipline. However, for the anglophone researcher *Didactique des Mathématiques/ Mathematikdidaktik*, has an undesirable association with “didactic” approaches to teaching and learning (e.g. teacher directed modes of instruction), while *Mathematics Education* for

the French and German speaking researcher is too wide and also covers the day-to-day practice in school, and does not focus on research.

### **Shared and non-shared references and respective theoretical frames**

When developing an annotated translation of the English language article by Geiger & Straesser (2015) into French, we became aware of another major difficulty of EndL authors. Research papers across the disciplines must demonstrate that they take into account existing research on the topic at hand and that they provide a contribution to new knowledge. Translating a paper into another language, however, usually requires additional work because an initial publication in one language tends to have extensive references to research originating from the source language and the tradition within a (national) discipline. Often these lists include few, if any, references from the target language – this holds true even for journals with an international reach and readership, for example, *Recherches en Didactique des Mathématiques* (RDM) or *Educational Studies in Mathematics* (ESM). Unsurprisingly, reviewers tend to look for references in the dominant language of the journal, which for the author/translator may imply a longer search for appropriate papers to be referenced. In the worst-case scenario, this requires a literature search from scratch to have the basic seminal papers of the target language cited. This shift from papers in one language group to another within mathematics education can also require a revised reflection on the results and the re-writing of the results/conclusion section(s) in order to situate findings in a different theoretical landscape.

### **Type of ‘acceptable’ research reports**

Communities of research practice do not only have sets of seminal reference points but often a very clear perspective on how to report on research activities. This is especially true for US-American research in mathematics education with an accepted structure around introduction, methodology, results, discussion and conclusion (Geiger & Straesser, 2015, p. 36). Such a tendency towards prescriptiveness can also be seen in other mathematics education research communities. For example, it is only for some five years that the International Group for the Psychology of Mathematics Education (PME) has accepted not only “Reports of empirical studies”, but also “Theoretical and philosophical essays”. For researchers from the French community, the dominant reporting structure for journals publishing in English, typified by PME, is highly problematic for reports on empirical investigations. For the French researcher, the expected structure requires a description of the theoretical framework that includes an extensive introduction to situate and justify the investigation and the precise methodological choices (the so-called a priori analysis). Further, the PME distinction of results and conclusions hinders an integrated presentation of empirical and often epistemological facets of a research, which would be common in a publication in French. There are also difficulties for German speaking researchers who adhere to the 'German' approach to Didactics of Mathematics called *Stoffdidaktik* when trying to follow the traditional PME structure (for this approach see Straesser, 2014 or Hußmann et al. 2016). The focus of research according to *Stoffdidaktik* is on disciplinary mathematics and so scientific progress is often recognised through identifying possible approaches to a specific mathematical topic (i.e. obtained with mathematical, not primarily empirical analysis) and will seldom fit with the definition of empirical investigations prioritised in empirical English language publications.

## Semantic differences in scientific debates in different languages

Translating from a source language to a target language often implies the challenge of “false friends”, i.e. the fact that using a word from the source language in the target language produces incorrect, if not misleading associations. Using the French word (and in French didactics: theoretical concept, see Brousseau 1997, p. 56f and p. 214) *milieu* in English will hide the theoretical role of *milieu* in the French *Théorie de Situation* (TDS), where the concept also includes material aspects of an environment, whereas in English, *milieu* is only designating the social and cultural environment, not its material aspects. As a consequence and from the point of view of semantics, *milieu* has a broader sense in French than in English and so should not be used for a translation from French into English without qualification. If authors, especially those drawing from the French TSD, do not change the term when publishing in English and continue to use *milieu*, they widen the signification of the word in English. Thus, in theoretical terms, they exercise a centrifugal force in the sense of Bakhtin. If authors accept the difficulty of Anglo-phone researchers with the narrow understanding of *milieu* and – in contrast to its use in the TSD – only apply it in the narrow, dominant sense of *social milieu*, they surrender to the centripetal forces of the English language community.

Another challenge may be the absence of two different words from the source language in the target language. Geiger et al. (2018, p. 36f), discusses this case with the example of an adequate translation of the concepts of *savoir* and *connaissance* from French into English. The terminological problems (already existing) in French are exacerbated by the complexity associated with finding an appropriate word in English. The English language does not have the same depth, the granularity for the semantic field, for the term *knowledge*; this limit in vocabulary implies different solutions for the translation of the two French nouns *connaissance* and *savoir*, for example, to use the noun *knowing* for *connaissance* and reserve *knowledge* for *savoir*. Given these difficulties, an author would first require a very clear idea about the differences between these two terms within the Theory of Didactical Situation (TSD) and would then have to find a way to describe and explain this difference in English. By linking *connaissance* and *situation* on one hand and *institution* and *savoir* on the other (see Margolinas, 2014), a linguistic solution may be possible when attempting to communicate with English as dominant language speakers. Adding two adjectives to differentiate the only available noun *knowledge* instead of creating one or two new noun(s) has been used in a course about Brousseau’s work in English commissioned by ICME – with Margolinas and Bessot introducing the terms *situational knowledge* and *institutional knowledge* to deal with this situation.

The situation can be even worse for a translation. What if there is no word in the target language that can convey the meaning of an expression in the source language? In Didactics of Mathematics, the translation of *Bildung* from German into English is simply not possible. While there is a widespread debate in Germany of the relationship of *Bildung* to mathematics education, a number of publications on the topic (e.g., Winter, 1975) and a special topic study group on *Bildung* in the German research association *Gesellschaft für Didaktik der Mathematik* (GDM), this activity has not produced an adequate translation of the term *Bildung* in either English or French. An attempt to translate texts that refer to *Bildung* and its ramifications for mathematics education in German schools, would need an extensive description of the cultural history of the concept *Bildung*, which

itself would only be a faint echo of discussions in the pedagogical and didactical debate in Germany after world-war II (for the respective seminal book in pedagogy see Klafki 1985).

### **How journals in Didactics of Mathematics handle the issue – a survey**

In order to gain insight into the support of EndL authors from major international journals in Didactics of Mathematics / Mathematics Education, a survey of the seven most highly recognised journals in the field was conducted. Journals were identified via the list in a study by Leatham and Williams (2017, especially the list on page 390) into those journals. After trialling the survey with the editor of the journal ranked 8<sup>th</sup>, the editors of the top 7 ranked journals were invited to respond to a survey. The survey was based on questions on the support offered by the journal for EndL authors before, during and/or after the processes of submission, review, proofing and publication. To date, there are five complete responses. Preliminary results of this survey are presented below.

The responses represent a wide spectrum of handling manuscripts from EndL authors. One extreme is the tendency to place all of the responsibility for conforming to a journal's expectations of language usage on the author, clearly communicated in the following response.

We expect language-edited papers for authors, whose mother tongue is not English, but many manuscripts still have strong deficits, when they reach us. We have language editing at the end by NN [name cancelled], but that comprises only a check of correct usage of terminology and correct academic writing.

At the other end of the spectrum, there are comments such as:

Thank you for investigating this important issue. Around 40% of articles published in NN [name of the journal] come from countries where English is not the dominant language, but the proportion of EndL authors is higher than this when one considers all submitted manuscripts. However, some caution is needed in looking for causes of manuscript rejection – language is not the only reason, and perhaps not even the main reason. Many authors struggle to frame and communicate their research so that it is relevant and accessible to an international audience, and this can be a consequence of differences in the significance of research questions across cultural contexts. So language diversity is part of a bigger global challenge in understanding culturally inflected ways of framing and communicating research.

None of the journals that have provided responses to date have a formal, institutionalised provision or special procedure for manuscripts submitted by EndL authors, but at least two of the editors-in-chief, indicated they take special care with such manuscripts. One of them tries:

... where possible, to align the language expertise [of handling editors] with the dominant language of the corresponding author [and tends] to support several rounds of major revisions to help the EndL author produce a publishable article. (Only one or at most two major revisions would be the norm for other manuscripts.) [In addition, the editor-in-chief spends]...many hours on language editing of the penultimate version of each EndL-authored manuscript that I handle. I aim to not only achieve an acceptable standard of academic English but also preserve some of the distinctive linguistic features of the author's first language (lexical choices, syntactic

structures, etc.). I want readers to “hear” the traces of the author’s first language rather than obliterate it and produce a bland and rather boring set of articles in each journal issue.

Another Editor-in-Chief states that

... after a submission is accepted the Editor works with the author(s) to improve the presentation of the article. Depending on the situation this can range from offering advice on rewriting, to offering suggested rephrasings.

In total, in two of the responses, language editing by the editors-in-chief is mentioned. At least one journal Editor indicated it was actively encouraging EndL authors to submit to their journal.

As Editor I actively seek contributions from non-English speaking researchers. ... This includes requesting members of our Advisory Board, which includes researchers from around the world, to suggest possible authors, and approaching potential authors at conference, etc. When a submission is received the evaluation of it is carried out on the basis of its content, and the editors are experienced in reading work by authors writing in a language other than their mother tongue, and so we are able in most cases to evaluate the content independently of the presentation. Some of our reviewers offer corrections at the grammatical level when commenting on a submission but not all. It is chiefly my responsibility as Editor to address any remaining language issues once an article has been accepted. That is, it is possible for an article to be accepted with ‘heavily accented’ writing. I then work with authors to ensure that their ideas are presented as clearly as possible to ... readers. An approach I have discussed with some potential authors, but which has not yet been implemented, is the submission of articles in a language other than French or English. Our Advisory Board includes researchers who are able to read many languages and so the first stage of our reviewing process (the internal review) could occur in another language.

In addition to this, the same journal even provides complimentary subscriptions to:

...national organizations, or research teams, in countries from which we rarely receive submissions ... on the theory that if more people in that country read [name of the journal], more people will submit articles to it.

Other responses indicate some journals manage the handling of manuscripts by EndL authors via the identification of appropriate reviewers, for example,

Selection of reviewers would take into account multiple factors, including familiarity with the theoretical and methodological approaches and often the local research context, in addition to the author’s language and cultural background.

By looking through the lens of centripetal / centrifugal forces within the major journals, the “standard” position in the answers is “There is no preferred form of English, but there does need to be consistency in using either US or English spelling within an article.” Thus, consistency is generally seen as the vital principle of English language usage. By contrast, the response of one Editor-in-Chief stands out by stating

Our instructions to authors state 'Contributions may be submitted in English or French. (The English may be American, British, or hybrid.)' How exactly this is interpreted has varied from editor to editor. As I am not personally familiar with many dialects of English, and I find [...] English quirky and inconsistent, I tend to edit submissions to either US or UK spelling. NN style includes a mix of punctuation rules from US, UK and [...] sources, and some that have simply evolved as 'the way NN does things'. As Editor I take responsibility for making sure the style of each article is close enough to NN style that most readers notice no inconsistencies.

This approach appears to be a special form of centripetal action in that while some diversity is allowed, expression is limited to only three forms of English.

## Conclusion

Two conclusions can be drawn from the previous study of the challenges faced by EndL authors and their opportunities to publish in highly recognised journals. English (in the form of the UK, USA and other dialects or a mixture of them) is the "lingua franca" of international research in mathematics education / Didactics of Mathematics. At the same time, fruitful and innovative research in the field depends on the healthy life of "local" research communities, which need opportunities of publishing ideas and results in the individual dominant language of their "own". The initial findings of the survey indicate that the support offered to EndL authors attempting to publish in highly recognised journals varies considerably. The spectrum of support ranges from an almost non-interventionist approach through to significant editorial support before publication in journals targeting the broad mathematics education / Didactics of Mathematics community.

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