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Article

New CALL-SLA Research Interfaces for the 21st Century: Towards Equitable Multilingualism

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Abstract

The majority of the world is multilingual, but inequitably multilingual, and much of the world is also technologized, but inequitably so. Thus, researchers in the fields of computer-assisted language learning (CALL) and second language acquisition (SLA) would profit from considering multilingualism and social justice when envisioning new CALL-SLA interfaces for the future. I first explain the connection I see among multilingualism, digital literacy, and social justice, and I characterize contemporary SLA as transformed by a social turn that is now complete, a bilingual turn slowly underway, and a social justice turn emerging on the horizon. I then review empirical evidence that suggests digital communication encourages multilingual practices, helps users appreciate the open nature of language resources, and perhaps even supports positive multilingual ideologies. Next I offer some illustrations of possible new research questions and CALL-SLA studies that would focus on embracing and exploiting the openness of language resources in language learning, and on doing multilingual learning. Finally, I examine what we know about the digital divide that is relevant to CALL-SLA researchers. I close with a checklist for researchers interested in contributing to these new research interfaces in support of equitable multilingualism in online and offline language learning and teaching.

KEYWORDS: CALL, SLA, MULTILINGUALISM, SOCIAL JUSTICE

Introduction

The two fields of computer-assisted language learning (CALL) and second language acquisition (SLA) have a long tradition of interrogating each other

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about best ways to engage in fruitful dialogue (Caws & Hamel, 2016; Chapelle, 1997, 2007, 2016; Chun, 2016; Harrington & Levy, 2001; Hubbard, 2008; Hubbard & Levy, 2016; Levy, 1997, 2000; Levy & Stockwell, 2006; Salaberry, 1999; Thorne & Smith, 2011). These discussions have often entailed support for the idea that CALL scholars should find firmer theoretical grounding for their research, and that this may be best achieved by looking into SLA theories. Other voices, however, have objected that excessive theoretical borrowing can hinder the development of native CALL theories. In the end, these publications evince a felt tension between disciplinary autonomy versus interdisciplinary crosspollination.

I would like to continue the tradition of CALL and SLA interrogating each other. But I will call for a broadening of the search for fruitful interfaces between the two fields. In particular, I will try to make the case for the benefits of articulating new and expanded CALL–SLA interfaces by bringing two considerations to the fore of language learning and digital learning: multilingualism and social justice. My argument is built on two premises. One is the contention that the landscape of SLA has greatly changed since the turn of the century, and that this has consequences for the kinds of interfaces with CALL that we may want to prioritize in the future. The second premise is in agreement with Schulze and Smith (2015) that the cornerstones of a scientific paradigm for any discipline are "ontology (what is it we want to know and observe, how can it be categorized?), epistemology (what can we know of it, how can this knowledge be developed?), and methodology (how can we find out about it?)" (p. ii). But I would also like to add a fourth cornerstone: ethics or axiology, that is, questions surrounding what and who our research is good for (Ortega, 2005; Ortega & Zyzik, 2008). Once we allow ethical-axiological concerns into the search for CALL–SLA interfaces, the intimate connection among multilingualism, digital literacies, and social justice becomes visible and can be articulated.

The study of multilingualism—with the goal to support it—is the business of all applied linguists, including CALL and SLA scholars. And research has amply demonstrated how in our ideologically monolingual societies many will live their bi/multilingualism as a life burden, simply because it conflicts with the monolingual ethos of mainstream society (De Houwer, 2015). Harmonious bilingualism is not at all impossible (De Houwer, 2015; Ellis, 2013; Festman, Poarch, & Dewaele, 2017). But most multilinguals will experience injustice, discrimination, and oppression in part related to their learning, unlearning, and relearning of multiple languages over their lifespan (Piller, 2016). This being so, disciplinary knowledge that supports multilingualism must of necessity grapple with the paradoxes and inequities that make bi/multilingualism a harmonious life experience for some and a source of conflict

for others. Digital technologies are part and parcel of the lives of multilinguals and (as I will try to substantiate later) of the inequities and social injustice we see in our societies. As such, I hope to make a convincing case for the argument that knowledge at the interface between SLA and CALL stands to make unique contributions to addressing equitable multilingualism as a disciplinary research goal.

Multilingualism, Digital Literacies, and Social Justice: Understanding the Relationship

LoBianco (2017) proposes a useful framework to think about the paradoxes of multilingualism and social justice that illuminates the well-known distinction between elite bilingualism and what has been variably called folk, circumstantial, or marginalized bilingualism. He does so by drawing attention to the linguistic continuities or discontinuities that may exist for different individuals, families, and communities between home, school, global, and lifelong languages.

Language comes first to all of us in the context of primary socialization in the family. But language is also a crucial mediator in education and schooling, when (print and digital) literacies are added to most people's language competencies. English, too, due to globalization, will become an important symbolic good to many people, either through compulsory school study, or later during their working adult life, and often both. For more and more people, there will be additional languages that their lives bring to them. But it is initially at the critical turning point of schooling that multilingualism may become a factor that begins a spiral of marginalization for some while turning into a source of privilege for others. This is because, once schooling begins—as early as around the age of 4 or 6, depending on the educational system—some children will encounter linguistic continuity if the language(s) of the home and of schooling are the same for them. Typically, this language (or languages) will also be the language(s) of the nation-state. These children will become elite multilinguals and likely experience their language learning harmoniously, even when (as most people do) they continue adding English or other languages to their lives through further education, employment, marriage, tourism, migration, political or religious persecution, and so on. Particularly if linguistic continuity is accompanied by sufficient family and community wealth to access education, technology, English, and other symbolic goods, multilingualism will be lived as an asset and a source of personal enrichment by elite multilinguals. For other children, however, when they begin attending school, a discontinuity between their home language(s) and the language of schooling (and of the nation-state) sets in. They can quickly become marginalized multilinguals if, as is most often the case, they and their families are left to their own devices to cope with this

linguistic discontinuity. To be clear, there is nothing remarkable (for better or worse) about living with/in more than one language. Most of the world is indeed multilingual, as can be easily shown if we do the math of 196 countries and 7,000 languages on our globe. Thus, multilingualism should neither be demonized nor romanticized. It is the socially constructed hierarchical valuing of different languages and different degrees and shapes of multilingualism that creates a boon for some and a liability for others. The more continuity of language(s) across the family, school, and the global world there is, the more privilege people accrue—and the less incentive they may have to pursue multilingualism. This is, of course, the case of many citizens in originary English-speaking countries, like the United States. Conversely, the less linguistic continuity there is across spheres of life (family, school, work) and lifespan stages (early childhood, school ages, working adult life), the more multilingual people will become – but also the more vulnerable they are to living their multilingualism as a life burden, their well-being jeopardized by the experience of conflictive bilingualism (De Houwer, 2015). This is particularly true if language discontinuity is coupled in those families and communities with uncertain wealth that would allow them to opt for alternative resources to support multilingual competencies (e.g., private bilingual schooling, literacy tutors or after-school programs, print and digital materials in support of language-rich activities, frequent travel for language maintenance purposes) and if race/ethnicity, religion, and other sources of difference become sources of daily compounded discrimination in the societies were these multilinguals live (Piller, 2016).

Technology, like multilingualism, should be normalized by now in our lives yet, like multilingualism, it adds to the complex picture of inequity. Use of digital devices also begins very early in life. For example, in the UK infants between 6 months and 3 years of age have been found to engage daily with touch screen devices (Bedford, Saez de Urabain, Cheung, Karmiloff-Smith, & Smith, 2016), and digital literacies are often introduced already in UK preschools, such that, even at pre-school ages, many children may "have well-developed digital literacy skills and knowledge in a number of areas" (Marsh, 2017, p. 212). Thus, print and digital literacies may be learned side by side by many but not all children, creating gaps of knowledge and compounding (dis) continuities between the home and the school languages.

It should be clear, then, that weaving multilingualism, social justice, and digital literacies into the disciplinary thinking of SLA and CALL is of high relevance for both fields. Once we acknowledge that the majority of the world is multilingual, but inequitably multilingual, and that much of the world is also technologized, but inequitably so, it becomes not only our business, but also our professional responsibility to generate research about language learning and digital literacies for language learning that addresses these problems.

The Changed Landscape of SLA

In a recent meta-synthesis, Plonsky and Ziegler (2016) surveyed what is known about research at the interface between CALL and SLA. They identified four interfaces where accumulation has been seen most: the use of hypertext glosses, the engineering of interaction via computer-mediated communication, the design of gaming for language learning, and the use of mobile-assisted technologies for language pedagogical purposes. Since a meta-synthesis is a systematic review of meta-analyses, and these are the four areas where Plonsky and Ziegler uncovered most meta-analyses for their meta-synthesis, we can conclude that these are the most powerful interfaces that have attracted the imagination of researchers working at the intersection of the two fields. And indeed, new meta-analyses in these few areas continue to appear (e.g., for hypertext glosses, see Vahedi, Ghonsooly, & Pishghadam, 2016; for gaming, see Chen, Tseng, Hsiao, 2016). As successful as these interfaces are, the field of SLA has undergone a number of changes that suggest new interfaces with CALL may now be possible and fruitful.

It is well known that in the 1990s the SLA community engaged in a social turn (Block, 2003) which brought about a recognition that mainstream scholars, until then of a strongly cognitive and cognitive-interactionist orientation, needed to share disciplinary space with socioculturally oriented SLA scholars. The latter group drew attention to the fact that learning a new language involves learning to participate in new communities via agentive processes of identity negotiation (Pavlenko & Lantolf, 2000), while also denouncing a deficit orientation that was pervasive in many studies casting speakers of a new language as eternal learners doomed to be forever less competent than native speakers (Firth & Wagner, 1997). The social turn gradually succeeded in making space within SLA research for constructs that had been considered by many to be outside of the scope of SLA proper: context, sociocultural agency, discourse, variability, self-in-the-world, and power. It is possibly this socially reoriented and expanded SLA theoretical landscape that has been the frame of reference for those who have chronicled the debate whether to import theories from SLA into CALL, and if so which ones (e.g., Caws & Hamel, 2016; Chapelle, 2016; Chun, 2016; Levy & Stockwell, 2006; Thorne & Smith, 2011).

As we head toward the close of the 2010s, the social turn has been completed. Tensions (or "gaps") between the cognitive and the social dimensions of language learning are still felt by some in SLA, and discussions about the kind of bridging that may be needed between the two have continued (Hulstijn, Young, Ortega, Bigelow, DeKeyser, Ellis, Lantolf, Mackey, & Talmy, 2014). Yet the acrimonious tone that characterized the social turn of the 1990s has subsided. The upshot is a rich epistemological and theoretical diversification, as reflected in the co-existence of many (not one) cognitive SLA theories

and many (not one) social SLA theories, most nowadays regularly featured in contemporary textbooks surveying key SLA theories (e.g., Atkinson, 2011; VanPatten & Williams, 2015) and key SLA findings (Ortega, 2009; Slabakova, 2016). The socially oriented SLA theories that have emerged, in particular, are themselves considerably diverse but represent allied perspectives with potential for synergy, integrativeness, and complementarity. In recognition of this potential, a group of 15 socially minded SLA researchers published a collective position paper outlining what they envision as the needed ethos for the field looking into the future (The Douglas Fir Group, 2016). Language learning is proposed there to mean learning how to "negotiate social and linguistic action in the face of minimal common ground and maximal semiotic demands" (p. 23). This new understanding incorporates many insights from other fields in applied linguistics, particularly usage-based linguistics, critical sociolinguistics, and critical educational linguistics, in that it emphasizes language as a practice rather than a system ("social and linguistic action"), it recognizes unpredictability as a feature of all human communication ("minimal common ground"), and it underscores that meaning making is not just a matter of language signs but of attendant multimodal semiotic resources ("maximal semiotic demands").

A slower turn that has also been underway in SLA is a bi/multilingual turn (Ortega, 2013), as the "multilingual world" in the title of The Douglas Fir Group (2016) foreshadows. Already in 1992, SLA authority Vivian Cook proposed his construct of multicompetence as a critique against the deficit orientation of nativespeakerism. And during the 1990s and 2000s empirical SLA research into crosslinguistic influences (Jarvis & Pavlenko, 2008) made it clear that bilinguals are not double monolinguals and that all the languages of L2 learners interact at all levels of proficiency and in all directions. That the multilingual turn should be so slow developing is puzzling. The slowness may be rooted in a reluctance to allow values (i.e., axiological questions) into scientific thinking, as if researchers were able to produce neutral knowledge free from ideologies (Ortega, 2014, 2016). However, if learning a new language is conceptualized as "efforts by monolingual adults to add on a monolingual-like command of an additional language" (Ortega, 2009, p. 5), then deficit remains the dead-end of SLA as a field. This creates problems for disciplinary knowledge in terms of not only ethics but also validity. A reconceptualization of L2 acquisition as late-timed bi/multilingualism is therefore truly needed to come out of the monolingual bias that still reigns in SLA.

Under this multilingual turn, the concept of translanguaging has become important. Translanguaging (e.g., García & Li Wei, 2014) is what routinely goes into making meaning. Humans make meaning by assembling linguistic signs but also by pooling language (and all their languages) together with

whatever other bits of semiotic repertoire they have, to the point that meaning making is always multisensory, multimodal, and always involving much more than language. An illustration, which I borrow from Li Wei (2017), is as follows. We see a symbol of a heart filled in with the colors and shapes of the Greek flag, and we read it as "I love Greece." There was no "language" in the message, but we understood it and reconstructed it as language. We translanguaged it. Another illustration can be given from the digital wilds. In a Facebook posting someone may upload a couple of pictures during a vacation and type "Goofeando en [city]." The posting is in Spanish but blends two languages: the American English verb *goof off* and the Spanish gerund ending *-ando*. Thus, the person who posted it translanguaged in it. Moreover, American English-speaking Facebook friends will likely understand the posting as "goofing off in [city]," even if they do not know any Spanish. If they do so, they are translanguaging too. On the other hand, some Spanish-speaking friends may not understand the posting fully, despite its being essentially in Spanish, if they do not know *goof off* in English; yet other Spanish speakers may understand the posting despite knowing no English at all, if they draw on their knowledge of the Disney cartoon character Goofy, or if they transliterate (mistakingly but felicitously) the colloquial Spanish expression *golfeando* or *siendo un golfo* ("fool around," "behave playful and mischievously"), quite close to *goofing off*. This second illustration shows that what one might understand in a verbal message is not dependent on clear boundaries between languages or clear correspondences between the languages one encounters and the languages one knows and doesn't. It also shows that languaging is translanguaging, even for monolinguals. Language(s) are exquisitely ambiguous because meaning ambiguity enhances communicative efficiency (Piantadosi, Tily, & Gibson, 2012). In addition, communication is all about relations, affect, and historical contingency because such is the human language condition (Hua & Kramsch, 2016; Ochs, 2012).

Multilingualism researchers, and among them very notably García and Li Wei (2014), argue somewhat metaphorically that the languages of a multilingual are interconnected. That is, languages are perhaps identifiable as labeled and separate at the conscious level, since we have all been socialized through literacy and schooling to think that way, but at the same time languages are inseparable in actual communication and form a single communicative repertoire. This is what Cenoz (2013) calls holistic multilingualism. The translanguaging proposal is, therefore, quite reasonable. Namely, since we know people always translanguage, let us purposefully use translanguage in language pedagogy (García & Li Wei, 2014; Li Wei, 2017). As we will see later, the concept of translanguaging resonates well with the concept of "networked multilingualism" in digital literacies (e.g., Androutsopoulos, 2015).

It also links well with The Douglas Fir Group's (2016) understanding of language learning as learning how to "negotiate social and linguistic action in the face of minimal common ground and maximal semiotic demands" (p. 23). Nevertheless, it must be acknowledged that the concept attracts skeptical reactions from many language educators working in foreign language contexts, whose main concern has always been with maximizing use of the target language during instruction, and from many SLA researchers across theoretical persuasions, perhaps due to the entrenched habitus in SLA studies to examine one-language-only at a time, the target language. Skepticism and ambivalence notwithstanding, we must be clear that the rationales for translanguaging are not only educational, but also psycholinguistic. Namely, a well-established fact in neurolinguistics is that multilinguals never use one-language-only; in fact, they cannot, literally, engage in one-language-at-a-time processing, because all languages get co-activated for comprehension and production "regardless of a bilingual's intention to use one language only" (Kroll, Bobb, & Hoshino, 2014, p. 160). This psycholinguistic fact is about bilingual processing and, therefore, its significance for bilingual representation is questioned by scholars who believe in the strict separation between processing and representation (MacSwan, 2017). However, it is important to recognize that proponents of translanguaging accord equal weight to educational and psycholinguistic rationales in their proposal.

After the completed social turn and the continuing multilingual turn, has SLA been sufficiently transformed to measure up to the contemporary challenges posed by the study and support of language learning? I would argue that one more turn is needed: a social justice turn. Some interest in ethics has been surfacing lately, including work by Thomas (2009) and Sterling, Winke, and Gass (2016) on Institutional Review Board issues, calls for studying underserved populations in SLA by Bigelow and Tarone (2004) and Young-Scholten (2013, 2015), or my own explorations of the societal and educational relevance of SLA research (Ortega, 2005, 2012). In applied linguistics as a whole, increasing interest in ethical reflection across all these areas can be seen in the collection by De Costa (2016). But it seems that the need to grapple with disciplinary ethical responsibilities is more urgent today than ever. On the one hand, we live in a world where UNESCO wants to commit governments and world powers to meeting Global Goals that seek to end poverty, promote peace, share wealth, and protect the planet by 2030 (http://en.unesco.org/sdgs). On the other hand, our world is seeing a tide of authoritarian populism in the West, coupled with a serious widening of income and wealth disparities and a strong polarization of societies all over the world (World Economic Forum, 2017). Human solidarity and respect for human diversity, including linguistic diversity, seem more unattainable than ever in this climate. And the

weakening of these values makes multilinguals, and even more so marginalized multilinguals, extremely vulnerable. What can and should those of us who study language learning do in our research, specifically, to respond to the real dangers multilingual individuals, families, and communities are experiencing? An ethical turn for SLA and CALL, and indeed for the whole of applied linguistics, would seem imperative.

Having outlined how I see the present state of SLA and its greatly expanded possibilities for the future, let me examine in turn new CALL–SLA interfaces that could be carved using the guiding thrust of a multilingual turn and a social justice turn.

The openness of Language Resources in Digital Communication

One question that seems legitimate to ask is whether there is a monolingual bias in the field of CALL. Answering this question is not easy.

On the one hand, in preparing for this article I found many encouraging glimpses of a multilingual turn in CALL. For example, Dooly (2011) adamantly argued that "the notion that learners are principally monolingual speakers learning other languages as separate systems" is flawed (p. 71), and Blyth has for many years now argued similarly (e.g., 1995). I was encouraged by Schulze and Smith's (2016) admonition that "aligning individual CALL research with current discourses in Applied Linguistics … requires us to conceptualize and depict the language learner as a multilingual subject who has agency, performs complex activities in a variety of social contexts, and has a unique personal identity" (p. ii). And in several areas of CALL work, multilingual phenomena seem to be surfacing. For example, reviewing current trends in the study of fan fiction, Sauro (2017) notes that multilingual identities and multilingual practices have been investigated extensively, pointing at the two interesting examples of fansubbing (or the amateur subtitling of television shows, movies, and *anime)* and scanlation (or the translation and distribution of comics and graphic novels, and *manga*). Likewise, in a survey study of telecollaboration in Europe, Helm (2015) found that 20% of exchanges were between two sites of lingua franca users, a choice which challenges nativespeakerism. She also reports that a sizeable 56% of European telecollaborative projects featured eTandem, a practice which is bilingual par excellence by involving two languages. Indeed, the learning benefits are great when the bilingualism of exchange partners is acknowledged as a resource. This is what Tudini (2016) concluded when she examined codeswitching in the social interactions on MSN Messenger Sharedtalk between two Italian-English bilinguals. Namely, "online language learning partnerships with multilingual intercultural speakers of the target language rather than monolingual L1 speakers should be given

a more prominent role in language programs" (p. 24) because—as Tudini found in her study—the shared languages become a resource that the participants skillfully use to co-construct reciprocity, understanding, affiliation, and learning. A more recent synthesis by Akiyama and Cunningham (forthcoming) suggests the incidence of lingua franca telecollaborations and eTandem exchanges that use two languages is less extended than Helm's (2015) European survey would suggest. And as Helm astutely notes, since the lingua franca of telecollaborations has thus far been always English, this choice may also exacerbate the problem of linguistic imperialism (p. 212). While such qualifications are in order, the gradual rise of lingua franca telecollaborations and bilingual eTandem projects bodes well for the promotion of multilingual learning in CALL.

On the other hand, in my searches while writing the present piece I did not uncover a single published CALL article with "multilingual(ism)" or "bilingual(ism)" in the title. By and large I believe it is fair to say that many CALL studies today continue to operate under monolingual assumptions. They describe participants as if they spoke only one first language and they learned only one L2; this may well be the default in the student populations researched in CALL, but it is simply impossible to ascertain this fact, as CALL researchers seldom report their participants' linguistic profiles in any depth. The majority of studies present the target language as homogeneous, standard, and educated; and when studies focus on digital registers and conventions, these are treated as bounded facts to be taught and learned. The vast majority of CALL studies still assume that learning means becoming more nativelike. And I would also add that the vast majority perpetuate the myth that the best source to learn a language is native speakers. Is this an exaggerated indictment of the situation? I am afraid not.

And yet, CALL is ideally positioned to contribute to research into the kinds of "multilingual repertoires" that The Douglas Fir Group (2016) envisions to be the necessary object of inquiry for the SLA of the 21st century. This is because, as has been argued in the sociolinguistic study of digital discourses (Androutsopoulos, 2015; Lee, 2016), the openness of language resources—and with it the realities of translanguaging—is augmented in digital communication. Namely, digital communication, very much like translanguaging in action, is carried out by assembling whatever bits of semiotic repertoire: It is always an amalgam of multisensory and multimodal linguistic and nonlinguistic signs, and it rarely results in one-language-only or one-language-at-a-time texts. Digital practices of translanguaging can be considered under the term of "networked multilingualism," proposed by Androutsopoulos (2015) "as a cover term for multilingual practices … encompass[ing] everything language users do with the entire range of linguistic resources within three

sets of constraints: mediation of written language by keyboard and screen technologies … access to network resources … and orientation to networked audiences …" (p. 188).

The empirical evidence suggests that linguistic diversity thrives in digital worlds. A notorious and well documented case is the emergence, out of the use of varieties of Colloquial Arabic online, of a new digital register known as Arabizi or Arabeezy, which is widely used by many, alongside invented English transliterations. An example I found via a search in Quora and posted by Michael Moszczynski on 29 November 2015 is: "What are you cooking on Friday?", which in Modern Standard Arabic would be written ماذا تطبخون يوم الجمعة and in Arabizi is "jum3a shu 6ab5een." According to Wikipedia, there are now tools or add-ons (on Google, Microsoft, Mozilla, Firefox, and Chrome) that convert text written in Arabizi into the traditional Arabic script. The new written Colloquial Arabizi seems unstoppable and is very productive, despite regular complaints by pundits that it may be weakening the proficiency in Standard Arabic and the pan-Arabic identity of Arabic youths (Albirini, 2016). The general phenomenon has been called "script-focused translanguaging" or "trans-scripting" (Androutsopoulos, 2015, p. 188) and has been documented in other languages online (e.g., Bianchi, 2015). In other cases a language that was previously used purely orally offline develops a written presence online. Thus, Reershemius (2017) documented how speakers of Low German (*Plattdeutsch*) feel free to write it and about it on Facebook, even though this is a stigmatized variety that has never been written in the offline world.

The empirical evidence also suggests that multilingualism thrives in digital worlds. For one, the fear that English would dominate the Internet has proven relatively unfounded, if one considers the rapid availability of languages other than English in the virtual wilds. For example, online searches as of May 2017 reveal that Wikipedia (which was launched in 2001 in English only) is available in 295 languages, and Facebook (released in 2004 in English only) now supports 101 languages; less multilingual support as of May 2017 is shown by Google Translate at 64 languages, Blogger at 61 languages, and a much lower 24 languages for LinkedIn. While this is a far cry from seeing represented on the Internet the some 7,000 languages documented in the world (Simons & Fennig, 2017), it is an encouraging picture. Digital worlds are also supportive of multilingualism in a slightly different sense, by lending themselves as spaces for the use of lesser-spoken languages, often in efforts orchestrated by activists involved in language revitalization (Galla, 2016; Reershemius, 2017).

But perhaps the most singular way in which digital communication favors multilingualism and augments the open nature of language resources is in its apparent encouragement of multilingual practices such as code mixing,

meshing, and switching. For example, in a study of seven secondary-school students of Greek heritage using Facebook while attending a Greek-speaking school in northern Germany, Androutsopoulos (2015) documented great fluency and fluidity in codeswitching. In his analysis of interpersonal exchanges comprising 183 wall comments over four weeks, interesting patterns of language choice emerged. Dem and Agi, two girls who were recent arrivals in Germany and thus dominant in Greek, posted messages to each other in Greek only. Dee and Luc, two male students who considered themselves more German than Greek, presented a mixed pattern: Luc sent messages to Dee mixing German and Greek, whereas Dee used exclusively German with Luc. Vee and Sue, two girls also dominant in German, proved to be extremely active with each other (accounting for 121 wall comments out of the 183), and both used both languages in them. Vee, in particular, was also the most linguistically accommodating of the seven students. Despite her prolific codeswitching with Sue, she posted German-only messages when addressing the other German-dominant peers and Greek-only messages when writing to the Greek-dominant peers.

Lee (2016) concludes that "interacting or doing things with more than one language becomes an important resource for all Web users … in a superdiverse world" (p. 119). Most intriguingly, she remarks that this is so even for "those who are considered 'monolinguals' in the offline world" (p. 119). I would like to expand on this interesting point. Namely, the digital wilds are so pervasively multilingual in many cases (e.g., when we see large translocal groups of friends on Facebook with different linguistic repertoires and language ideologies) that so-called monolingual members in those affinity spaces learn to cope, let it pass, or even enjoy and celebrate multiple languages and translanguaging. They can do this by ignoring messages in languages they do not understand, by contenting themselves with only partial comprehension of those messages, or by using the automated translation function if the application has one. When they do the latter, even monolinguals are capable of judging the accuracy of a translation, despite the fact that they only know one of the languages involved.

As Leppänen and Peuronen (2012) put it, post-2000s, the Internet provides a "translocal affinity space" for multilinguals, and it is worthy of study because it helps understand "specific multilingual practices of internet users, the motivations behind their language choices and the functions and meanings these have for them in the specific internet contexts in which they operate" (p. 389). Not only do digital worlds invite rich forms of linguistic diversity and translanguaging, but they also seem to do so while somewhat lifting the negative ideologies of language purism that often accompany translanguaging in offline worlds. The acceptance or at least tolerance of nonprescriptive language practices and multilingual repertoires in the Internet wilds is likely related to

what Marwick and boyd (2011) have called context collapses in these translocal affinity spaces, which require targeting different audiences at once (in the same context). While we all handle multiplicity of audiences in face-to-face conversation, the complexified context collapses of digital worlds require new and different strategies. Perhaps translanguaging is one such strategy that nurtures laxed attitudes towards or even recognition and celebration of the openness of language resources, and both the translingual practices and the positive multilingual ideologies become a trademark of successful communication in the digital wilds.

A Multilingual Turn for CALL? New Questions and Some Illustrations

Once we recognize that linguistic diversity and multilingual practices thrive in the digital wilds, we can begin posing new research questions that are specific to CALL but relevant to SLA as a whole.

For one, the work I reviewed in the previous section suggests that where in spoken interactions many speakers suffer linguistic insecurity in the face of imperfect proficiency (e.g., foreign-language learners) or because of internalized stigmatization (e.g., heritage speakers, dialect speakers), in online spaces many of the same speakers—perhaps most speakers—can show great tolerance towards language variation. However, monolingual deficit ideologies circulate in all spaces, digital or not. This is clearly recognized by Thorne, Sauro, and Smith (2015) when they note that CALL studies have captured cases of "covert bilingualism (Hult, 2014) practiced by multilingual fans in often English-dominant fan spaces who choose not to disclose their linguistic background or offline nationality in order not to be pigeonholed or treated as deficient in English in fandom communities" (p. 228). Thus, an important question to ask in CALL-SLA research is:

> How are monolingual deficit ideologies enacted and resisted or subverted in digital spaces?

Particularly when digital applications are created specifically for language learning, Buendgens-Kosten (2014) argues that native-speakerness and language-learnerness are often "put" into the products' software structure by pedagogical design. For example, declaring a native language (and a single one) may be obligatory in some interfaces, after which the range of actions (correcting, submitting a posting for correction) can be restricted artificially. In Lang-8 (a language learning blogger community now replaced by HiNative app), she notes, there are no "likes," but instead there are "native nods." Thus, another question CALL-SLA researchers can ask is:

> How are different ideologies of language indexed in the software design of digital spaces, and how do they constrain communication and identity?

More generally, we can ask:

> If digital communication can instigate language learning of an open, flexible kind, a sort of "multilingual learning" that tolerates language variation and relaxes and even helps counter negative language ideologies, how can we do this with technologies that are domesticated or dedicated to classroom-related uses for language learning purposes?

Another important caveat which is also worthy of research is that not all the phenomena attested in the digital wilds—creative orthography, code choice and code-switching, identity performance, ideology negotiations—can be expected to have equal or constant value in classroom pedagogies and across the variegated contexts where languages are taught and learned. Given the new research affirming that extramural uses of technology do influence language learning (e.g., Sockett, 2014; Sundqvist & Sylvén, 2016) it would certainly be good to ask:

> How well do language students learn multilingual practices and resources merely by communicating in the wild?

And as a separate but related question, we might want new research that asks:

> Should we "teach" these new forms of translanguaging in the formal language classroom?

The new family of questions that might be asked under a multilingual turn for CALL-SLA is illustrated next.

In a rare and notable study, Blyth and Dalola (2016) asked how technology might support translingual pedagogy in foreign language education. In 2004, they created *Français interactif*, a package of textbooks and videos where all characters are French-English, representing a mixture of beginning L2 learners of French studying abroad and accomplished French bilinguals living in the United States. By design, the materials contained uses of L1, codemixing, and "ungrammaticalities," all of which were intentionally left unedited. The goal was to invite students and teachers to rethink French learning and embrace translanguaging as a positive practice for multilinguals in the making, like themselves. It was frustrating for the researchers, therefore, to discover that the many students and teachers who have used and still use *Français interactif* regularly notice the multilingual traces in the materials and tolerate them but do not really take up the invitation.

Blyth and Dalola (2016) recount how in 2011 they concluded that what was needed was the addition of a translingual affinity space. They therefore supplemented *Français interactif* with an accompanying Facebook page "where traditionally proscribed practices such as code switching and lexical borrowing were not only accepted but encouraged" explicitly by a moderator. The data showed the encouragement was greatly successful. For example, when the moderator posted an article titled "Don't Read This Article Si T'es Pas Bilingue: Le World's Premier-Ever de Son Kind" (written by Hazan, 2016, https://www.mtlblog.com/lifestyle/dont-read-this-article-si-tes-pas-bilingue), 70 comments and 500 shares were noted. Many postings showed playful language mixing ("J'adore this article") and many were approving of the original idea that language mixing is a valuable choice ("Great idea. I'd like to see more. I spend a lot of time in Québec, and it is actually how many French Canadians speak. They often switch back & forth in the middle of sentences"). There were also self-revelations and explicit celebrations of multilingual identities, as in this exchange:

> Excellent in my case I know 5 languages. My mother tongue is Spanish I am an English teacher I learnt French Portuguese and Italian when I was a teen and now I'm learning Italian "again" merci beaucoup per everything benissimo!
>
> You will leave us crazy si vous avez décidé d'écrire un article trilingues.

In a very different study featuring a lingua franca telecollaboration between Taiwanese and Indonesian students, Ke and Cahyani (2014) documented positive changes as a result of the experience. As one of the Taiwanese students, Wei, revealed in an interview:

> Actually, I preferred to speak like a native speaker before; that was my final goal. … now I think effective communication is more important than pronunciation. Whether the person you talk to can understand you is more crucial. If you speak too quickly, even if you are a native speaker, people may still ask for a repetition. That is not what I want. Now I'd like to speak it fluently and understandably; pronunciation is not the only consideration. (p. 35)

This study hints at the possibility that learners can learn to take a more multilingual stance despite having been previously socialized into linguistic insecurity and perfectionism.

As can be surmised from these two illustrations, there are many CALL options for orchestrating multilingual learning online. Blyth and Dalola (2016) deemed it necessary to supplement classroom materials with the freer social environment of Facebook, whereas Ke and Cahyani (2014) chose to design a

lingua franca telecollaboration. The pedagogical instigation of translanguaging and also the study of multilingual texts, practices, ideologies, and identities can be greatly advanced in lingua franca telecollaboration and also in eTandem exchanges. When languages are shared (e.g., as in eTandem) and when the roles of the linguistic expert and novice are interchangeable (which is true of both eTandem and lingua franca exchanges), the new multilingual ethos for CALL-SLA can be put under the sharp lens of research. We can ask:

> How does reciprocity in eTandem influence linguistic confidence? Does interaction among L2 users foster an awareness of and appreciation for the openness of language? Do these digital environments encourage translanguaging? How do any of these practices and processes impact on language learning?

In sum, little CALL research has thus far been explicitly oriented towards understanding and nurturing multilingual and translingual learning, but studies such as Blyth and Dalola (2016), Ke and Cahyani (2014), and also Tudini (2016) offer good models for how to do so in the future. The opportunities and challenges that come from learning to embrace and exploit the openness of language resources in language learning and doing multilingual learning may be best both facilitated and investigated in digital worlds. But then, a host of new difficult questions presents themselves for investigation. Above all is the issue of how to align multilingual and translingual teaching with testing: If we promote translanguaging via CALL, how is successful L2 use to be defined, and what place do we accord to accuracy in our assessments? Thus, assessment is in itself a complex and worthwhile CALL–SLA interface to explore the bi/multilingual framing of L2 acquisition in the future. CALL researchers are uniquely equipped to produce knowledge in this area that SLA researchers will need in order to build a complete theory of how languages are learned.

Not Just Multilingualism: Social Justice Too

The majority of the world is multilingual, but inequitably multilingual. Likewise, technology is both a source of empowerment and an instrument for inequality at the individual and societal levels. Therefore, it seems necessary for CALL and SLA researchers to be fully cognizant of the research on the digital divide, or else multilinguals may not be served by our research.

In a nutshell, a long line of empirical research has shown that the digital divide continually deepens worldwide (Internet World Stats, 2017) and domestically (Gonzales, 2015), and that it is about access to technology (the so-called first order divide) but also about use (the second order digital divide) (Brotcorne, Damhuis, Laurent, Valenduc, & Vendramin, 2010). Use-related causes for the digital divide include unequal broadband speed for different

world geographies and sectors of any society, as captured by the conclusion that "bandwidth follows income" worldwide (Hilbert, 2016, p. 576). Consistency of use has only begun to be studied but is turning out to be a big factor, for example when low-income technology adopters—even in wealthy countries such as the United States—suffer repeated interruptions of service because they can only intermittently afford the monthly subscription bill, or because they lose the functionality of their computer that they purchased from a pawn shop when they do not have the small amount needed to pay for anti-virus software, or because they do not own a computer and have to depend on the limited timetables of booths at public libraries (Gonzales, 2015; Gonzalez & Katz, 2016). Precarity and surveillance in autocratic regimes, conflict zones, surveilled borders, or refugee camps are another way in which the digital divide affects some people negatively, for example making the use of cellphones dangerous for them (Newell, Gomez, & Guajardo, 2016; Wall, Campbell, & Janbek, 2017). Quality or differentiated use refers to putting technology to good uses that bring about personal, financial, and symbolic benefits, so-called capital enhancing or enabling uses. Quality of use is a well-studied dynamic that takes the form of Matthew effects, whereby the rich get richer (in individual digital use, see Hargittai, 2010; Lissitsa & Chachashvilli-Bolotin, 2014; Zillien & Hargittai, 2009; and also in schools, see Ritzhaupt, Liu, Dawson, & Barron, 2013; and Warschauer, Knobel, & Stone, 2004). Namely, the already wealthy and technologically savvy use technology more frequently, thereby continuously developing better know-how skills and digital literacies, and as a result they are found to engage in more capital-enhancing uses of technology that have positive pay-offs, that is, they engage in enabling technology and not just recreational forms of technology. In this revolving cycle, technology further augments their privileged access to information and social networks.

What might distinguish the technological haves from the have-nots in our Western, well-off societies? People who use technology more frequently and for more enabling uses tend to have higher incomes, a college education, hold desirable jobs, and lead a lifestyle that includes some foreign-language study and high mathematical competencies, good knowledge of geography, having credit cards, and owning various consumer goods like cars, a house, technological gadgets, and so on (Zillien & Hargittai, 2009; also Hargittai, 2010). Studies have also found that race/ethnicity consistently correlates with technology use. For example, in the United States Gonzales (2017) estimated odds of 1/16 for African Americans and Latinx to have Internet access at home, compared to Whites and Asians. But of course race/ethnicity tends to correlate with all the previously listed factors. Age is also consistently found to be associated to less technology use. However, contra the digital native myth, which would have us believe a young age is predictive of technological savviness, it is older

age that matters by predicting less frequent and less ideal use of technology (Hargittai, 2010). Thus, as Marsh (2016) cautions for early-education teachers, "practitioners should not make any assumptions about children's prior digital literacy competences without close observation and assessment, as that may lead to an exacerbation of difference and a widening of digital divides" (p. 211).

González-Lloret (2014) reminds us of the importance of coducting a needs analysis of not only language-learning needs but also digital literacy learning needs, before creating technology-mediated curricula and materials. In this context, it is worth pondering about the notion of capital-enhancing uses of technology. In her oft-cited studies, Hargittai (2010; also Zillien & Hargittai, 2009) identifies the following uses as capital-enhancing: keeping up with political and economic news online, searching for travel information, checking stock prices, seeking online product information and price comparisons, using email, and frequently using search engines. However, I would argue that a more critical view is needed, because what may constitute capital-enhancing uses can differ depending on who we have in mind as technology users.

Highly educated, middle- and upper-class individuals in Western countries who are at the top of Internet penetration rates may engage in uses similar to those contemplated by Hargittai and associates. For example, in a sample of 749 highly educated men and women in their 40s in Belgium, Courtois and Verdegem (2016) confirmed the following main capital-enhancing uses: finding a job, planning a trip, buying a cheaper product, finding out what political party to vote for, finding a sport or other kind of club to join, meeting one or more friends who one later on meets in person, finding a potential partner, finding out what medical problem one has, or handling paper work such as taxes and invoices faster. But if we turn to technology users who are low income and could not afford a college education, the good purposes to which they put the little technology they can come by are similar to wealthier technology users in some respect, and quite different in others. For example, with a sample of 72 U.S. residents with a median income range between $0 and $5,000 per year, Gonzales (2015) documented uses that are also reported in high-income communities, such as finding a job, finding out about health problems and drug brands, and also maintaining bonds and staying in touch with family. But as Helsper (2011) in the United Kingdom notes, many governments have begun to offer public services online, and some are even going completely digital (i.e., eGovernment). So we can also imagine wanting to use online technology for signing up for unemployment benefits, finding information and forms for how to file for bankruptcy, or applying for food stamps. Without being able to maintain consistent and high-quality access to technology, many low-income residents are at risk of becoming a digital underclass

(Helsper, 2011) unable to access such services, which further exacerbates the digital divide. In a different study, Gonzales (2017) was able to demonstrate that individuals from disadvantaged groups, who typically have more limited social networks that they may use for betterment of their life conditions, use technology to bridge social capital, that is, to establish new social ties online with people who are dissimilar to them (e.g., in race, education, age), thus expanding their potential for acquiring new social capital. This was not true of individuals belonging to advantaged groups, who overall had larger and more powerful social networks than the marginalized individuals, but did not engage in seeking new social ties online more than offline. This is a particularly striking kind of capital-enhancing use of social technologies with a promise to counter social inequality.

What about migrants, the undocumented, or refugees, what things might they use the Internet and mobile technologies like a cell phone for? They connect with children and spouses back home (Horst & Taylor, 2014), leveraging free online platforms (e.g., Whatsapp, Facebook, Skype) for virtual intimacy with the extended family they had to leave behind (Gonzalez & Katz, 2016). But other important if sinister uses documented across studies include to share with other immigrants imminent threats such as police roundups (Harney, 2013) or (in the case of refugees detained in camps) to verify TV coverage by asking back home, "Has there been a bombing or not? If there is a bombing, hopefully nobody died" (Wall et al., 2017, p. 248).

Thus, a critical understanding of the issue of capital-enhancing uses of technology must be held. I would suggest the goal of technology for all should be "digital fluency" (Briggs & Makice, 2012), that is, proficiency and comfort in achieving desired outcomes using technology. Those desired outcomes should be capital-enhancing uses of technology, but they must be defined locally and contextually, and possibly by the technology users themselves. Obviously, a critical discussion of capital-enhancing technology uses is important to be had when planning CALL studies and when designing needs analyses for language curricula (González-Lloret, 2014).

Finally, in the context of language education it is also crucial to consider what digital literacies come about as a result of increasing digital fluency to do technology in capital-enhancing ways. Ever since the advent of Web 2.0, a culture of participation (rather than consumption) of information, knowledge, and self-expression has emerged and has given rise to digital skills recognized as essential for active citizenship in the 21st century. Jenkins, Purushotma, Weigel, Clinton, and Robison (2009, p. 4) proposed a well-known list. Some of these skills are easily developed out of Web 2.0 use but really transcend technology and can be developed and used in offline contexts as well. These include, for instance, collective intelligence, or "the ability to pool knowledge

and compare notes with others toward a common goal," and negotiation, or "the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms." Some of the skills were already found in traditional print literacies but take on a new intensified nature online, such as judgment, or "the ability to evaluate the reliability and credibility of different information sources." Yet other skills are entirely new and will not develop without frequent and high-quality technology use. These include, for example, performance or "the ability to adopt alternative identities for the purpose of improvisation and discovery" and appropriation or "the ability to meaningfully sample and remix media content." Therefore, 21st-century skills can only be equitably distributed and attained by all if digital literacy learning is carefully planned and encompasses the full range of new, old, and transformed competencies. For language educators and CALL researchers alike, this means that digital literacy-learning objectives and language-learning objectives must be planned hand-in-hand, and neither type can be neglected in language curricula (González-Lloret, 2014; Harris, 2015).

In sum, technology is not a luxury for anyone in today's world but a necessity for all, yet its access and use is inequitably distributed. It is therefore imperative that CALL-SLA educators and researchers actively support access to and high-quality use of technology among our language students, if we are to address social justice. At the individual level, digital literacies have become a new hidden curriculum: They shape who succeeds and who is left behind in school and in the workplace (Jenkins et al., 2009, p. 3). At global and national levels, technology put to capital-enhancing uses is crucial for "accelerating access to development opportunities and in promoting good governance and the rule of law" (UNESCO, 2016, p. 8). In the context of language learning, we must ensure that marginalized as well as elite multilinguals benefit from the promise of technology. This can only happen if we also actively strive to combat the well-documented inequities and perils of the complex digital divides in which we are all complicit.

Equitable Multilingualism: A Checklist for New CALL–SLA Research Interfaces

Where do we go from here? It can be surmised from the discussion I have offered that research into technology-mediated (as well as face-to-face) language teaching and learning should help us figure out not just how to orchestrate "effective" or even "successful" CALL and L2 instruction, but above all also equitable CALL and L2 instruction. It should also be clear that we can no longer afford to study L2 learning as "double monolingualism" instead of as "emergent multilingualism" without distorting the object of study and creating

validity and ethical problems (Ortega, 2013, 2014, 2016). I, therefore, would like to conclude with a non-exhaustive and modest checklist that can be used by researchers interested in contributing CALL-SLA research from the viewpoint of new interfaces that support equitable multilingualism. As we plan each study, this checklist can serve as an initial guide to examining the potential of our research to promote multilingualism and social justice through CALL and SLA, that is, to support equitable multilingualism as a field.

The first question we can ask ourselves is: (1) *Have I considered including in my study under-served or marginalized multilinguals?* This is because we cannot serve language learners who we do not study (Ortega, 2005) and because what we know depends on who we study (Bigelow & Tarone, 2004). In other words, our answer to question 1 will matter in terms of both the ethical warrants and the knowledge validity that we can bring about with each new study. Next we must ask: (2) *Am I studying my participants as whole learners developing multilingual repertoires?* It is important not to assume that we know the linguistic profiles of our students and study participants. Instead, we need to ask the degree to which they are multilingual, and we need to do so by asking the right questions in the right way (see discussion in Anderson, Mak, Chahi, & Bialystok, 2017). It is equally important not to forget that by definition language students know and use already at least one other language; this knowledge should inform our study design, analyses, and interpretations. The third question in this checklist is: (3) *How will I make sure to collect and report all the relevant information that will reveal any digital divide dynamics in my participants*? This question responds to the research that has compellingly shown that the following factors predict vulnerabilities in uneven technological competences, including among young technology users who cannot all be assumed to be digital natives: (a) education, income, and occupation; (b) ethnicity/race; (c) digital fluency; (d) technology profiles of capital-enhancing uses. Checklist items 2 and 3 are crucial. We must understand the multilingualism, the sociocultural and socioeconomic milieus, and the digital skills of learners before we can plan good CALL-SLA pedagogical implementations or research studies. Another two important questions are: (4) *Have I carefully considered in my design bridges between out-of-school digital worlds and classroom technological worlds?* and (5) *Have I yoked digital literacy objectives and language learning objectives?* Question 4 is in response to the rapidly accumulating empirical evidence that much incidental language learning accrues from extramural digital practices for leisure (e.g., Kusik, 2017; Sockett, 2014; Sundqvist & Sylvén, 2016; Sylvén & Sundqvist, 2017). Both questions 4 and 5 address an explicit social justice goal. Namely, low users of technology in our study will greatly benefit if we can improve their digital skills in the classroom as a side-product of language learning, and perhaps even open up for them new digital wilds

where they may be able to continue engaging in the development of digital literacies on their own (Harris, 2015). For high users of technology in our study, conversely, the social justice concern is to ensure the technologies we may domesticate for language-leaning purposes feel authentic to them, so they do not lose motivation and stop learning language. Last but not least, we would do well to ask: (6) *Have I included outcomes beyond just "form," and are my research methods appropriate to study those outcomes?* Here we can heed Chun, Kern, and Smith (2016), who admonish CALL researchers to pay attention to "forms, contexts, meanings, and ideologies" in digital media (p. 66). This is in contrast to the traditional CALL–SLA interfaces, which have concentrated to date almost exclusively on forms, and specifically on linguistic benefits related to vocabulary, grammar, and negotiation for meaning (cf. Plonsky & Ziegler, 2016). In order to consider the expanded constellation of outcomes that relate to not only the learning of forms but also the transformation of multilingual "contexts, meanings, and ideologies" (Chun et al., p. 66), we must also take to heart Thorne et al.'s (2015) advice that our research methods should include, whenever possible, collecting multiple layers of data, ensuring that the analyses are interpretive, seeking phenomenological evidence tapping the multilinguals' perspectives, examining discourse data, and considering social actions. In other words, we should consider the extent to which each new study can appropriately and profitably look for evidence of multilingual learning in multilingual texts, multilingual practices, and multilingual identities and ideologies. Admittedly, this is a much broader research task than is typically thought of as SLA proper. However, a careful inspection of the diverse epistemological and ontological concerns in contemporary SLA (e.g., Hulstijn et al., 2014; The Douglas Fir Group, 2016) as well as in contemporary CALL (Chun, 2016; Chun et al., 2016; Thorne et al., 2015) shows this breadth is well advised and clearly attuned to the ethos and habitus of 21st-century CALL and SLA.

Concluding Remarks

I began this article by proposing that the three cornerstones of a scientific paradigm identified by Schulze and Smith (2015, p. ii) – ontology, epistemology, and methodology – should be completed with the fourth cornerstone of ethics or axiology, that is, by considering what and who our research is good for. This is because I remain convinced that "in the ultimate analysis, it is not the methods or the epistemologies [or the theories] that justify the legitimacy and quality of human research, but the moral-political purposes that guide sustained research efforts" (Ortega, 2005, p. 438). The need to incorporate ethics and axiology in the study of language learning seems all the more acute in our present world, where human solidarity and respect for human diversity, including linguistic diversity, is under siege, creating serious vulnerabilities

for the goal of multilingualism and the lives of many multilinguals. Echoing but also widening Chun's (2016) call for an ecological CALL in the post-2000s era, the overarching question that I have submitted to orient CALL–SLA research interfaces for the 21st century is: What technologies, teaching paradigms, views of language, and principal uses of computers can nurture multilingualism and digital literacies for all, not just for the privileged?

In fact, I would argue that the learning and research goals for the new CALL–SLA interfaces must be differentiated by the shape, degree, and type of language and literacy competencies that our students present to us in our studies and in our classrooms. Marginalized multilinguals include Indigenous communities, migrants, refugees, heritage speakers, 1.5 generation speakers, Deaf signers, English Language Learners (ELLs), low educated second language and literacy acquisition (LESLLA) adults, cognitively or physically diverse language students, and other disciplinarily constructed categories, as well as new forms of lived multilingualism that researchers have yet to fully understand, such as the grassroots multilingualism in the wild that Han (2013) captured in Africa Town in Guangzhou, China. These are variegated individuals and communities who are likely to experience conflictive bilingualism (De Houwer, 2015), in addition to many other forms of marginalization and oppression (Piller, 2016). How can CALL-SLA researchers serve them? How can we work towards knowledge that is useful for supporting multicompetent communication, being able to use bilingualism as capital rather than liability, and building resilience towards recurrent oppressive experiences and deleterious language ideologies? We must also strive to serve elite multilinguals. They also experience glimpses of oppression when they learn a new language as adults, by virtue of allowing themselves to momentarily occupy the vulnerable positions of being the other, the foreigner, the nonnative speaker, the incompetent, in the eyes of more proficient or powerful speakers. These momentary and fleeting experiences of marginalization can also be leveraged educationally. Moreover, elite multilinguals can reproduce social injustice even as part of their project of language learning (Pomerantz, 2010), and conversely they might be an asset in addressing social justice because of the privilege they carry. Therefore, social justice goals that we may be able to develop by working with them are increasing their tolerance of and empathy for dissimilar others and helping them learn to use privilege well in support of equitable multilingualism. For this, however, we must create incentives that compel our elite multilingual students to envision human values such as intercultural citizenship, social cohesion, and justice as goals of language education (Lo Bianco, 2017; Porto, Houghton, & Byram, 2017), helping them move beyond the usual instrumental goals for language learning that they already imagine and benefit from, such as access to better educational and employment opportunities.

Finally, might we even develop research that addresses multilingualism and social justice goals by turning the investigative CALL-SLA lens onto monolinguals, including marginalized monolinguals? As Christopher Jones (personal communication) reminded me, it is in great part marginalized monolinguals who are blamed for the rise of authoritarian populism in the West and the disaffection for human solidarity and human diversity ideals. It is estimated that only 25% of "mainstream" Americans study a foreign language at some point in their lives (Devlin, 2015) and at the K–12 level only 20% of the population is enrolled in foreign language courses, with California, Florida, New York, and Texas at the head (American Councils for International Education, 2017). One or several arguments from applied linguists for why to study languages is that "Foreign Language study creates more positive attitudes and less prejudice toward people who are different" (http://cla.auburn.edu/forlang/resources/twenty-five-reasons/). However, this assumption has rarely been empirically pursued (for an interesting study, see van Compernolle, 2016). Could CALL-SLA researchers in the future generate disciplinary knowledge that reveals how to instill empathy and appreciation for difference for monolinguals who may not already hold such values, too? Under what circumstances (pedagogical approaches, CALL support, and so on) can ab initio exposure to foreign languages lead to more empathy, cosmopolitanism, democratic values, and critical global citizenship? Certainly, we know just Internet usage does not (Stier, 2017; Verboord, 2017).

All along, and for all multilinguals and monolinguals, the new expanded CALL–SLA interfaces would focus on learning to embrace and exploit the openness of language resources in language learning, and doing multilingual learning. I hope I have made a good case for the benefits of bringing into the fore multilingualism and social justice when studying language learning and digital learning. This broadening of the search for fruitful interfaces between CALL and SLA can take us into new research questions and new kinds of studies attuned to the educational and world challenges that the 21st century has begun to hand us. Working to support equitable multilingualism may prove to be an imperative responsibility and an opportunity to make unique disciplinary contributions in a world of social, political, economic, and human uncertainty such as the one we live in.

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