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Localized Globalization: Directives in Augmented Reality Game Interaction

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In what has been termed the global era, individuals from diverse linguistic and cultural backgrounds frequently participate in joint activities that require intercultural communication. Concomitantly, research on communication in contexts involving mobile technologies is nascent, and investigations addressing pragmatics in particular are few. In this article, we examine place-based mobile augmented reality (AR) apps, which have been shown to provide learners with valuable opportunities for location-situated social and collaborative interaction and embodied experience of place. We focus on cataloguing social actions, specifically directives, in 4 groups of mobile AR game players using English as a lingua franca (ELF) to communicate. We uncovered a variety of directive strategies, both verbal and nonverbal, that are rarely discussed in pragmatics teaching and learning yet were critical to the unfolding communicative action. Implications of the study findings for pragmatics instruction are provided within the broader recommendations for ELF pragmatics.

Keywords: English as a lingua franca (ELF) discourse; directive speech acts; augmented reality; L1 English speakers; learners of English

IN THIS ERA OF INCREASING MIGRATION and mobility, researchers and practitioners are reevaluating how pragmatics should be learned and taught. Monolingual native speaker norms are no longer the target when complex negotiations of meaning and co-construction of discourse in intercultural communication are taking place, particularly in a wide array of English as a lingua franca (ELF) interactions. The prevalence and heterogeneous nature of ELF interactions makes the concept of interactional competence particularly relevant (e.g., Hall, 2018; Young, 2011). Taguchi and Ishihara (2018) acknowledged the importance of interactional competence in pragmatics learning as follows:

> The view of pragmatic competence has moved away from a fixed and stable relationship (…) among form, function, and context of use. The current view is that the form–function–context relationship changes corresponding to the shifting attitudes, affect, identities, and relations of speakers. In this view, pragmatic competence is understood as the ability to negotiate meaning in a flexible, adaptive manner and to co-construct a communicative act. (p. 82)

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As the frequency of ELF interactions increases in business, educational, interpersonal, and transactional contexts, we are also experiencing rapid technological advances and increases in technology use, meaning that more ELF interactions are mediated by technology. Although one of many, English is the lingua franca in a majority of copresent intercultural communication contexts as well as in technology-mediated communication. In particular, mobile devices are increasingly prevalent across global regions, social classes, and communities, and are intimately integrated into activities such as information gathering, communication, and navigation (Frith, 2015). The relative recency of mobile devices, especially since they have increasingly displaced earlier computer-mediated platforms, means that research on language use with mobile technologies is in its early stages (Rodríguez, 2018); this is particularly so for pragmatics learning (e.g., Sykes & Dubreil, 2019).

As Taguchi and Ishihara (2018) aptly put it, "we hope that further research will uncover the complex undertakings of ELF negotiations, which can serve as a foundation for research-based ELF pedagogy" (p. 95). In the same vein, Eskildsen et al. (2019) argued that, while in second language acquisition (SLA) research, a greater diversity of social–interactional contexts are now being examined, it is necessary to continue expanding empirical investigations to contexts in which language learners of different cultural backgrounds interact, including language learning in "the wild" (p. 1). We respond to these overlapping calls with our study of native (L1) English speaker and language learner interactions using ELF in a mobile augmented reality (AR) place-based game environment, focusing specifically on the variety of directives that speakers use to move their group activity forward. Methodologically, we combine two orientations: We first apply more traditional individualistic categories (i.e., speech acts) to the data, followed by a contextual approach to analyzing interactional dimensions of pragmatic engagement from an emic perspective. We consider this combination of two different epistemologies to be a strength and to align with Kecskes's (2014) argument that "utterances in pragmatics research need to be analyzed both from the perspective of the hearer and the speaker" (p. 13). This study of mobile-associated communicative action in an ELF context thus provides a timely, interactionally sensitive, and ecologically valid contribution to approaches to pragmatics instruction.

LITERATURE REVIEW

Pragmatics of English as a Lingua Franca

ELF's status as "an open-source phenomenon" (Cogo & House, 2017, p. 210) that is constantly modified by its speakers and varies by context of use warrants new studies of ELF interactions in a variety of contexts, including in technology-mediated ones (cf. O'Regan, 2014, on the reification of ELF). Although investigations of ELF discourse for pragmatic features are not abundant, Taguchi and Ishihara (2018) identified 27 primary studies and three main findings in their recent synthesis. The first finding is that ELF discourse is goal-oriented,[1] with L1 sociopragmatic norms often surfacing and superseding some L2 norms (as an example, see Dombi's, 2020, finding of a high number of direct requests in email communication). The second finding that strategies for communicative effectiveness are used to cope with miscommunication is illustrated by Metsä–Ketelä (2016), showing how participants achieve communicative effectiveness by using vague expressions (e.g., *stuff like that*) to indicate uncertainty and organize discourse. The third finding is that accommodation, code-switching, and rapport-building are prevalent in ELF interactions. As such, Firth (1996) showed that interactants in lingua franca contexts normalize potential trouble sources of communication by making "the other's 'abnormal' talk appear 'normal'" (p. 245).

Given the aforementioned findings, scholars have reported that while interlanguage pragmatics research has been primarily comparative in nature (i.e., evaluating language learners' performance against native speaker norms), ELF pragmatics research has been descriptive (e.g., Dombi, 2020). Taguchi and Ishihara (2018) further described ELF pragmatics research as such, stating that it

> extends its focus beyond the notions of politeness and directness or pragmalinguistic and sociopragmatic competence that L2 pragmatics studies have predominantly focused on. ELF pragmatics focuses on how speakers use discourse tactics, conversation moves, and communication strategies to support smooth interaction and joint meaning-making. (p. 86)

In his book on intercultural pragmatics, Kecskes (2014) similarly emphasized joint meaning-making in multilingual communicative contexts. Drawing on the work of multiple scholars, Kecskes stated that "there is no single

language, culture, or communicative style. What we have is language, culture, and communicative style instantiated in several groups and individual varieties" (p. 85). He further contended that "people with more than one language are not abnormal communicators. They are normal human beings whose communicative actions are affected by the knowledge of more than one language and culture" (p. 4). Such sentiments further support the aforementioned deemphasis of native-speaker norms in lingua franca discourse.

While descriptive research on pragmatics in ELF settings is relatively scarce, publications with pedagogical implications for teaching ELF pragmatics are even more rare (Taguchi & Ishihara, 2018). Currently, the predominant approach in pragmatics instruction is based on native-speaker norms (e.g., Houck & Tatsuki, 2011). The reasons for this are numerous, including the prestige of inner-circle norms and teachers' familiarity with such norms. However, given the increasing prominence of ELF use, the fluidity of the construct, and the features of ELF discourse as previously discussed, a different approach to ELF pragmatics instruction is called for.

On the basis of the limited body of literature on teaching ELF pragmatics, Taguchi and Ishihara (2018) proposed the following pedagogical principles:

1. "[Diversify] the models of pragmatic language use" (p. 89) so as to reduce the exclusive reliance on inner-circle norms.
2. Prepare learners to act as ethnographers so that they can study the social practices of a given community.
3. Develop learners' metapragmatic awareness (explicit knowledge) of real-life ELF contexts and strategies for communicative effectiveness.

Taguchi and Ishihara (2018) further suggested that learners need to be made aware of linguistic diversity and plurilingualism and the role of ELF in today's context of globalization. In addition, when making learners aware of the accommodation and rapport-building strategies frequently present in ELF discourse, pragmatics instruction should "reflect a mind-set of 'the benefit of the doubt,' or general attitude of empathy, compassion, and respect" (Taguchi & Ishishara, 2018, p. 94). In our view, while these principles could be potentially seen as too general by some, they reflect the nature of lingua franca interactions (including ELF), which are context-bound and locally contingent, and thus require overarching pedagogical principles that can be applicable to a wide variety of intercultural contexts.

Analyses of Embodied Interaction in Augmented Spaces

The 'interactional turn' in SLA research (Firth & Wagner, 2007) has resulted in more recent studies examining talk-in-interaction among multilingual speakers in natural settings, that is, in settings where data for analysis are not elicited (Nguyen, 2011; Theodorsdottir, 2011; Thorne, 2008). In the same vein, many have argued that the study of communicative practices needs to include the embodiment of social actors in addition to linguistic context (Atkinson, 2010; Goodwin, 2000; Linell, 2009). With regard to ELF pragmatics, Taguchi and Ishihara's (2018) synthesis indicates that nonverbal strategies are not generally the focus of investigation in this area. This may be because research on ELF outside of classrooms, where the use of nonverbal strategies might be particularly important, is not common. The identified gap in ELF pragmatics research has prompted us to examine the embodied language use of small groups doing the out-of-class tasks of finding locations using a map on a mobile phone and talking about what they find. During these interactions, we pay attention to how speakers direct others to next actions using both verbal and nonverbal strategies. Since we focus on an AR place-based game as our context of interaction, in what follows, we review the relevant studies that inform this line of work.

In a series of studies, Thorne, Hellermann, and colleagues investigated how participants interact during an AR place-based mobile game, where the goal was to find specific locations on a university campus and then make reports about environmental sustainability resources present in those locations. Thorne and Hellermann (2017) observed that participants utilized a variety of nonverbal resources, such as gaze, gesture, pointing, and embodied deixis, in order to collectively accomplish the AR game goals (e.g., wayfinding, oral reporting; see also Thorne et al., 2015). Importantly, game participants enmeshed these semiotic resources with linguistic resources and with the immediate physical context "by looking around, pointing, reading aloud, and audibly communicating what they could see" (Thorne & Hellerman, 2017, p. 728). Hellermann, Thorne, and Fodor (2017) concluded, "the fact that participants are mobile (…) and need to move from place to place during the game adds (…) complexity to their use of language for accomplishing their task" (p. 102). They illustrate how the

activity of publicly reading game instructions from the screen—sometimes individually by one player and at other times collaboratively by several players—is interconnected with social and embodied practices.

Focusing on the influence of place, Hellermann, Thorne, and Haley (2019) examined when and how AR game participants "'notice' different aspects of their physical environments and make such noticings public to their peers" (p. 200). In collaborative groups, participants used gaze shift, gesture, and talk, deciding on which of these resources were relevant given the actions they needed to complete in the game and what was available in their surroundings. Among these, deixis was a commonly used resource (e.g., deictic *there*, often accompanied by a deictic gesture). Hellermann et al. (2019) detailed how the movement of mobile AR game players through a physical environment—where they move, stop, reconfigure as a group, consult the mobile device and its holder, and orient to the ever-changing surrounding physical environment—may result in interactions that are different from face-to-face interactions where individuals are stationary. (For additional examples of talk-in-interaction intertwined with objects and features of the physical environment, see Thorne, Hellermann, & Jakonen, 2021, and the edited volume by Nevile et al., 2014).

Drew and Couper–Kuhlen (2014) and Kendrick and Drew (2016) contributed further to investigations of embodiment in interaction, bringing up the broader concept of recruitment, which encompasses "the linguistic and embodied ways in which assistance may be sought—requested or solicited—or in which we come to perceive another's need and offer or volunteer assistance" (Kendrick & Drew, 2016, p. 1). As Kendrick and Drew explained, one way to seek assistance from others is by making a request speech act via pragmalinguistic means (e.g., *Can you open the oven door for me?*). However, participants might also combine verbalizations with a gesture, such as holding out a jar with a lid tightly screwed on, or anticipate our need for assistance, such as opening an oven door for us when our hands are full.

At a time when researchers are calling for the increased use of naturalistic pragmatics data (e.g., Culpeper, Mackey, & Taguchi, 2018), examination of embodiment in interaction makes an important contribution to ELF pragmatics. Pragmatic competence in ELF contexts extends beyond conventional pragmalinguistic resources and sociopragmatic strategies and includes a wider repertoire of strategies for communicative effectiveness, accommodation, and rapport building (Taguchi & Ishihara, 2018). As shown by the studies reviewed in this section, communicative effectiveness can be achieved via verbal or nonverbal modalities, or a combination of the two.

Directives in Pragmatics Research and Instruction

In pragmatics instruction, speech acts have been a primary focus. Requests in particular (a type of directive) are prominent due to their complexity and frequent occurrence (e.g., Taguchi & Roever, 2017). While we were initially interested in examining requests for these reasons, we expanded our focus to directive speech acts more broadly. In doing so, we were able to document a larger repertoire of interactional strategies used by mobile AR game players as they attempted to direct others to next actions via verbal, nonverbal, and a combination of these modalities.

Haddington (2013) provided a comprehensive description of directives and review of research on the topic. Directives are commonly used in different kinds of activities where participants do things together. Directives are actions that try to get someone to do something or to prevent someone from doing something. Directives can come in various forms, including commands, orders, instructions, requests, questions, suggestions, offers, and so on (e.g., Goodwin, 2006; Sorjonen, 2001), as well as a combination of speech and embodied actions (e.g., Cekaite, 2010). When forming directives, speakers can display different degrees of entitlement or sensitivity to listeners' willingness or ability to comply (Craven & Potter, 2010). Haddington then detailed how passengers issue directives to drivers at near-road junctions. The findings indicate that, just as with directives in other contexts, directives during driving can be in the form of requests, commands, suggestions, questions, corrections, offers, or confirmation requests. An embodied action (e.g., a pointing gesture) can likewise function as a directive.

Thorne et al. (2015), while not focusing on directives exclusively, examined how players ask for the phone on which the AR game that they are playing is located. The analysis indicates that while in some cases the directives were only verbal, such as *let me see* or *let me see that*, in other cases a combination of verbal and nonverbal strategies were used. For example, one player said, "Hey where's the," and gestured to the phone, to which another player responded by handing over the phone and saying, "Here. Number five here [in reference to a location marked on a digital map]."

Strikingly, it appears that in some contexts, directives are primarily issued only via nonverbal actions (e.g., Cekaite, 2010).

While studies on linguistic means and embodied actions for issuing directives in naturalistic settings are limited in number, research on language learners' production of requests (i.e., a type of directive) in elicited data is abundant. Such data are primarily collected via discourse completion tasks (DCTs) and role plays (see Taguchi & Roever, 2017, for a review). Studies have found that as learners' proficiency or awareness of L2 pragmatics increases, they rely less on direct request strategies (e.g., *give me…*) and hints with unclear requestive intent; instead, proficient learners adopt more conventionally indirect strategies (e.g., *could you…*) and tend to prepare the listener for their request with prerequest moves (e.g., providing the background for their request; Al–Gahtani & Roever, 2012). Such findings contrast with the data collected in naturalistic contexts. For example, in Thorne et al. (2015) and Cekaite (2010), the use of embodied actions (e.g., gestures) to issue directives was frequent. Additionally, in Thorne et al., learners did not use any conventionally indirect strategies and instead utilized direct strategies, typically imperatives (e.g., *hey, stop*). It is also noteworthy that these direct strategies were often cryptic, consisting of a word or two. There are several possible reasons for the disparity in findings between the controlled and naturalistic data. First, DCTs in particular tend to reflect metapragmatic knowledge, or what participants think would be appropriate to say, rather than what they would actually say in a given situation (e.g., Golato, 2003). Additionally, in naturalistic settings, the availability of the surrounding physical context allows one to convey meaning in ways that are not purely linguistic. Finally, as previously stated, in ELF discourse (which Thorne et al., 2015, investigated) participants are frequently more concerned with efficiency of conveying their message rather than with the target-like norms of politeness. Thus, naturalistic data is advantageous for examining what people actually do as they carry out actions in the real world.

Research Questions

Given the dearth of naturalistic research on directives in ELF contexts, our study is necessarily exploratory and descriptive and thus, methodologically, is in line with the majority of research on ELF pragmatics. To contribute to knowledge on ELF interactions in diverse contexts, such as an AR place-based mobile activity, we examine how players issue directives in different group configurations: L1 speaker of English–English language learner (ES–ELL) groups and ELL groups only. We also examine the influence of the larger discourse context (i.e., turn-taking, coconstruction, repetition, etc.) on the categorization of directives. Our research questions are the following:

RQ1. What types of directives are observed in lingua franca interactions occurring in a mobile AR game?
RQ2. What discernable patterns of strategy use are there between L1 English speakers and language learners?
RQ3. Does a larger discourse context influence how directives are categorized?

METHODOLOGY

We used a principled mixed methodological design (Riazi, 2016; Sydorenko et al., 2019). We first operationalized the construct of directive in light of speech act theory and conducted a quantitative analysis of patterns of directive use. This step was followed by detailed examination of several directive sequences to illustrate both the sequential context for directives and the reflexive nature of language, context, and action. While we endorse the use of categorical identification of directives, we want to also show how distinguishing discrete categories of action for quantification is complex. The detailed sequential analysis (qualitative data) shows this complexity and provides a window into naturalistic data analysis before its distillation into discrete categories. Although, on the one hand, there is a potential commensurability issue of utilizing both speech act theory and sequential analysis, on the other hand, a mixed methods approach like ours has been suggested by Heritage (1999) and others.

Participants

Four groups comprising three students each participated in this study. Groups 1 and 2 consisted of one ES and two ELLs. We called these groups 'mixed.' Groups 3 and 4 consisted of three ELLs each. The ELLs, ranging in proficiency from intermediate to advanced (proficiency determined by an internal placement exam), were enrolled in an intensive English language program in the United States. ELLs were from various L1 backgrounds,[2] as shown in Table 1. ESs were students enrolled in a mixed upper division

TABLE 1
Group Compositions

Group Number	Participants	Native Language
1	Energy	English
	Justice	Japanese
	Air	Arabic
2	Flora	English
	Rain	Japanese
	Fauna	Arabic
3	Red	Arabic
	Rick	Arabic
	Sam	Korean
4	Trek	Portuguese
	Max	Portuguese
	Prius	Mandarin Chinese

undergraduate or graduate SLA course that was required for preservice ESL teachers.

Procedures

Each group played an AR GPS-enabled place-based game called *ChronoOps* (Thorne, 2013). To encourage negotiation between players, the groups were asked to use one iPhone per group and to follow the instructions on the app that contained the game. The groups' interactions were video-recorded by three cameras so as to capture multiple angles of participants' visual fields: One camera was held by a researcher who followed the groups and the other two head-mounted cameras were worn by two of the group members.

The game involved walking through and around a university campus and visiting each of the five locations specified in the game. The narrative of the game was that players were agents from the future who had come back to the present year to save the Earth from environmental degradation. Each player was given a code name to help them envision such roles (e.g., Rain, Fauna). Once players reached a specific location, they were instructed by the game to make a video report about the particular green technology represented in that location (e.g., solar panels, electric vehicles, rain water reclamation). The video reports were added to the game, and players in other groups were then able to see them. All groups made a minimum of five video reports (one per location), but some groups made more video reports when the technology malfunctioned and they needed to redo their report. Because the players were required to engage in specific tasks (wayfinding, reporting), we considered their discourse to be goal-oriented (or institutional) as opposed to 'mundane' (e.g., friends chatting on the phone; cf. Heritage, 2005).

The game's instructions were intentionally underspecified and open-ended in order to encourage negotiation between players. For example, there were no instructions regarding where to make the video reports, who should be in them (one player or multiple players), or who should be the first one to make the video report. Each of these decisions involved considerable interaction and negotiation among participants. The game play lasted 37 to 45 minutes, depending on the group (see the Results section).

Both ELLs and ESs played the game as part of their course requirements. For ELLs, the purpose was to engage in communication with a variety of speakers in relatively unstructured tasks outside of class. While out-of-class practice is considered an important extension of what is done in class, language learners rarely have the opportunities to do so (as reported by language instructors in the ESL program). For ESs, the purpose was to observe interactions involving language learners in real-world contexts, and to then relate their observations to SLA theories examined in their preservice teacher training program (the interaction approach and Vygotskian sociocultural theory). After the game, all students (ELLs and ESs) wrote reflections on their experience.

Analysis

Quantitative Analysis: Coding of Directives. To identify directives, rather than relying only on our intuition of speaker intention (Austin, 1962), we followed Holmes (1983) and principles from conversation analysis (Schegloff, 2007), where the illocutionary force of the utterance is what the listener understands it to be and is often visible in their embodied and verbal actions and responses, that is, perlocutionary effects. We used a combination of these two interpretations in our coding.

From the existing literature, we identified a large variety of directive types (see Table 2; the expanded version of Table 2 is provided in the Online Supporting Information for this article).[3] Because we had both ELL and ES data, we first examined the categories of requests (as one category of directives; Blum–Kulka, House, & Kasper, 1989)—namely direct, conventionally indirect, and hints. Next, we identified all other verbal categories of directives. After that, we identified a

TABLE 2
Directive Strategies Identified in Prior Literature and Found in Data

Directive Strategy or Type	Selected Reference(s)	Example(s) and/or Definitions
Direct		
Imperatives (including full and elliptical)	Ervin–Tripp (1976) Blum–Kulka et al. (1989)	"Gimme a match," "a match" (Ervin–Tripp, 1976, p. 29)
Let's + first-person pronoun ('*let's* imperatives')	Holmes (1983)	"Let's finish there" (Holmes, 1983, p. 102)
Indirect		
Conventionally indirect	Blum–Kulka et al. (1989)	*Can you*; *Could you*; *I was wondering if*
Hints	Ervin–Tripp (1976) Holmes (1983) Blum–Kulka et al. (1989)	"The matches are all gone" (Ervin–Tripp, 1976, p. 29)
Other		
Routines	Holmes (1983)	Common announcements, such as "OK bus, people" (teacher telling students they can go on the bus; Holmes, 1983, p. 89)
Permission directives	Ervin–Tripp (1976)	*Can I*; *May I*
Question directives	Ervin–Tripp (1976) Holmes (1983)	"They give the listener who does not want to comply an escape route, in treating the question directive as if it were an information question." (Ervin–Tripp, 1976, p. 38) "Speaker: Are we out of coffee? Hearer: No, pass your cup." (Ervin–Tripp, 1976, p. 39)
Suggestion	Searle (1976) Holmes (1983)	"Let's go to the pictures tonight" (Holmes, 1983, p. 102)
Offer	Curl (2006)	"Do you want me to…," "if there is anything we can do, let us know" (Curl, 2006)
Deontic authority	Stevanovic & Peräkylä (2012)	Using others or other objects as authority to direct next actions (printed instructions, game instructions, map, etc.). In our data, typical formulations were "we have to," "we need to," etc.
With Nonverbal Cues		
Verbal + nonverbal	Hellermann et al. (2019) Mondada (2017)	*There* and the use of a pointing (deictic) gesture (Hellermann et al., 2019)
Nonverbal only	Drew & Couper–Kuhlen (2014)	The action of pushing an empty mug across the table toward someone who is holding a pot of coffee

category of directives with nonverbal cues. Finally, we identified additional strategies for directives in our data that were not discussed in prior literature (marked with an asterisk [*] in Tables S4-1 and S5 in the Online Supporting Information for this article).[4]

We categorized nonverbal cues as verbal + nonverbal versus nonverbal only. We did not notice this categorization in the literature, but wanted to see if, in our data, nonverbal cues are typically combined with linguistic utterances (Olsher, 2004) to produce a directive, or if nonverbal cues alone can be used to issue directives (Cekaite, 2010).

Additionally, we examined the use of lexical mitigators (*just, I think, maybe, sort of*, etc.) because language learners consistently underuse internal mitigating devices when making requests (see Taguchi & Roever, 2017).

Interrater Agreement. When coding the data from the four groups, we followed these steps:

TABLE 3
Intercoder Agreement of Data Coding for Mixed Groups 1 and 2

	Group 1	Group 2
Instances of disagreement	7	3
Total number of directives	101	110
Agreement	93%	97%

Note. Additional methodological notes are provided in the Online Supporting Information for this article.

1. Based on preliminary examination of data (i.e., transcripts) from the four groups of game players and the review of literature on strategies used for issuing directives, four coders (all authors of this article) discussed preliminary coding categories.
2. Coder 1 coded data from two ELL-only groups, while Coder 2 coded data from two mixed groups. In this step, Coder 1 and 2 examined both the transcripts and the video data.
3. Coders 1 and 2 then rewatched each other's videos of groups (with accompanying transcripts) and added more directives if they saw them. They also examined each other's codes and commented on those. The codes for this Phase 1 coding were then finalized.
4. Coders 3 and 4 reexamined the Phase 1 coding for directives in 50% of the data (two mixed groups) and percent agreement was calculated. (Coders 3 and 4 only referred to certain videos excerpts if the transcripts did not provide adequate context.)
5. Because intercoder agreement was high (see Table 3), Coders 3 and 4 did not examine the coding of data from the other two groups (Group 3 and 4).

Qualitative (Sequential) Analysis. In the process of coding the data for categories of directives, we kept a list of data points that presented challenges in categorization (see the Online Supporting Information for this article). We then reexamined this list of challenges and identified the most frequent point of contention: the categorization of directives that included *wanna/want to* constructions. We then examined the larger context around each instance of this construction in the data and selected those instances of *wanna/want to* for sequential analysis that indexed diverse acts. We used transcription conventions from Mondada (2018) in this analysis.

RESULTS

Research Question 1: Types of Directives

The length of AR-game play for each group ranged between 37 minutes and 42.5 minutes. The ELL-only groups took longer to complete the game (45 minutes in Group 3 and 42.5 minutes in Group 4) compared with the mixed groups (40.5 minutes in Group 1 and 37 minutes in Group 2). The Chi-square analysis revealed a significant difference among four groups in the number of directives, $\chi^2 = 29.286$, $df = 3$, $p < .001$ (based on normed frequency of directives per minute × 100).

Table 4 shows that a wide variety of directives occurred in the AR-game interactions (see more details in Table S4-1 in the Online Supporting Information). With regard to larger request categories (cf. Blum–Kulka et al., 1989), all three types were present: direct (imperatives), conventionally indirect (e.g., *could you… ?*), and nonconventionally indirect (hints). Of these, the conventionally indirect category was rare, constituting 2–4% of all directives in each group.

With regard to other categories of directives (e.g., Ervin–Tripp, 1976; Holmes, 1983), we observed question directives, suggestions, and the use of deontic authority. We also observed other, less frequent categories of directives (e.g., giving permission), which are combined into the 'other less frequent' category in Table 4 (see more details in the Online Supporting Information). A relatively large proportion of directives included only nonverbal cues (e.g., pointing as a suggestion for that person to do the report) or a combination of verbal directives with nonverbal cues (e.g., *there* and pointing as a way to direct the group to move to another location). While the proportion of directives with nonverbal cues varied across groups (9–22%), there was no significant cross-group difference.

Research Question 2: Discernable Patterns Between L1 English Speakers and Language Learners

In line with existing research (see Taguchi & Roever, 2017, for a review), we anticipated that the ELL-only groups would rely more on direct strategies (e.g., imperatives) and less on indirect ones (e.g., hints, question directives). Our results showed some tendencies that support existing findings. Both ELL groups exhibited a higher percentage of imperatives than the mixed groups, and the difference between the four groups was statistically significant, $\chi^2 = 57.379$, $df = 3$,

TABLE 4
Directive Type Use by Group: Percentages, Raw Counts, and Chi-Square Test Results

Directive Type	Mixed Groups		ELL-Only Groups		χ^2 ($df = 3$)	p
	Group 1	Group 2	Group 3	Group 4		
			Verbal-Only Directives			
Direct						
Imperatives	5% (5)	13% (14)	53% (51)	45% (36)	57.379	<.001*
Conventionally Indirect						
Query preparatory	2% (2)	2% (2)	3% (3)	4% (3)	1.000	.801
Nonconventionally Indirect						
Hints	9% (9)	15% (16)	4% (4)	7% (5)	7.400	.060
Other Directives						
Question directives	35% (35)	18% (20)	4% (4)	14% (11)	28.211	<.001*
Suggestion	18% (18)	17% (17)	2% (2)	15% (12)	12.769	.005*
Deontic authority	7% (7)	6% (7)	2% (2)	4% (3)	3.105	.376
Other less frequent directives	3% (3)	8% (9)	9% (9)	3% (2)		
			Directives With Nonverbal Cues			
Verbal + nonverbal	14% (14)	17% (19)	17% (16)	5% (4)	7.302	.063
Nonverbal only	8% (8)	5% (5)	5% (5)	4% (3)	1.636	.651
Total with nonverbal cues	22% (22)	22% (24)	22% (21)	9% (7)	6.760	.080
			Grand Total			
Total directives	(101)	(110)	(96)	(79)	5.275	.153
Directives with lexical mitigators	21% (21)	25% (28)	7% (7)	16% (13)	10.478	.015
Use of mitigators by speaker	Energy (ES): 15	Flora (ES): 23	Red: 3	Prius: 1		
	Air: 4	Fauna: 5	Sam: 4	Max: 12		
	Justice: 2	Rain: 0	Rick: 0	Trek: 0		

Note. ELL = English language learner; ES = English speaker. The numbers in parentheses refer to raw counts.
*Indicates statistically significant differences among the four groups ($p < .005$) after Bonferroni correction was applied (i.e., $\alpha = .05/11$ Chi-square tests).

$p < .001$. However, with regard to indirect strategies, the separation between the mixed and the ELL-only groups was not as straightforward: Group 4 was more similar to the mixed groups, while Group 3 used question directives and suggestions significantly less frequently as compared to the other three groups (see Table 4). Additionally, mixed groups used more mitigators than the two ELL groups. However, here again, Group 4 was more similar to the mixed groups, using more mitigators than Group 3. It is noteworthy that in mixed Groups 1 and 2, ESs used a much higher proportion of mitigators than learners. Although we cannot generalize on the basis of our limited sample size, it appears that ESs have the tendency to be more indirect than language learners (cf. Thorne, Reinhardt, & Golombeck, 2008), but evolving group-level dynamics may also play a role.

An interesting pattern was observed in the deontic authority category. Although the group differences were not statistically significant, both mixed groups used this strategy slightly more often than the ELL-only groups (see Table 4). It appears that in mixed groups, ELL players may have adopted the use of this strategy from ES players. In Group 2, the first six instances of deontic authority were used by Flora (ES; e.g., "So I think we're supposed to go find trash cans?"); subsequently, Fauna (ELL) produced a deontic authority directive, "We have to remember," only at the end of the game. Similarly, in Group 1, Energy (ES) produced three instances of deontic authority before Air (ELL) produced one. ELL-only groups also had some, albeit fewer, instances of deontic authority, showing that some of the ELLs were aware of this category. In the discussion section, we entertain the idea that both the L1 English and teacher-in-training status of ESs may have contributed to such behaviors.

Although ELL Groups 3 and 4 behaved similarly with regard to imperatives, Group 4 was more similar to the mixed groups in many other categories (question directives, suggestions, mitigators) than to the other ELL group. Group 3 appeared to be more direct, vocal, and goal-oriented, as evidenced in such directives as "Okay. Rick. Come with me" (and Rick then moves to stand next to the speaker) and "Come on Sam" (after which Sam begins to help brainstorm ideas for their next report). Group 4 appeared to be less direct, as evidenced in their preference toward question directives and suggestions (see Table 4). Also, Group 3 used mitigators the least, further suggesting that players in this group tended to be more direct.

Some differences are also evident within the mixed groups. As expected, Fauna (ELL) used more imperatives than Flora (ES) in Group 2 (see Table 5); however, Energy (ES) and Air (ELL) in Group 1 used a similar (fewer) number of them. With regard to hints, while in Group 1 Air (ELL) used them more often than Energy (ES), in Group 2 Fauna (ELL) and Flora (ES) used almost the same number of them (eight and seven, respectively). These findings suggest that not only speakers' language proficiency (i.e., ES vs. ELL), but also their individual repertoires play a role in the use of directives. Speakers who appeared more goal-oriented issued more directives (e.g., Max in Group 4 was the initiator of 76% of directives). On the contrary, there were no directives during 'mundane' talk, such as small talk that participants engaged in as they walked from one location to another.

Another factor influencing the choice of directives may be the participants' role of being a phone holder or not, since holding the phone could give that individual greater epistemic authority (Thorne et al., 2015). For example, in Group 1, Air (ELL) held the phone throughout the game and possibly, for this reason, made most of the hints in the form of location announcements (for a more nuanced categorization of hints, see the Online Supporting Information). However, in the same group, Energy (ES) at one point looked at the phone held by Air and issued this directive as a hint in a form of location announcement: "The picture looks like it's just like right here." Because in most groups, the 'phone holder' status switched between speakers throughout the game, we did not analyze the impact of this factor, but this is another possible reason for the participants' choice of directives types.

Research Question 3: Sequential Analysis of Directives

During the coding process, questions arose naturally about the action category of different utterances. As stated in the Methods section, coders discussed cases with different categorizations. Our plan was to use these discussions as the starting point for a more detailed sequential analysis that would shed light on how actions can be categorized or interpreted in their immediate discursive contexts. One of the most common forms of directives that emerged in the data were question directives. While directives formulated with the *want to/wanna* construction (e.g., *Do you wanna talk?*) were

TABLE 5
Raw Count of Directive Types Used by Speaker

	Mixed Groups		ELL-Only Groups	
Directive Type	Group 1	Group 2	Group 3	Group 4
	Verbal-Only Directives			
Direct				
Imperatives	Energy (ES): 3 Air: 2	Flora (ES): 4 Fauna: 10	Red: 21 Rick: 21 Sam: 9	Max: 26 Prius: 6 Trek: 4
Conventionally Indirect				
Query preparatory	Energy (ES): 2	Flora (ES): 1 Rain: 1	Red: 1 Rick: 2	Max: 2 Prius: 1
Nonconventionally Indirect				
Hints	Energy (ES): 3 Air: 6	Flora (ES): 7 Fauna: 8 Rain: 1	Red: 2 Sam: 2	Max: 5
Other Directives				
Question directives	Energy (ES): 20 Air: 5 Justice: 10	Flora (ES): 14 Fauna: 6	Red: 3 Rick: 1	Max: 10 Trek: 1
Suggestion	Energy (ES): 15 Air: 1 Justice: 2	Flora (ES): 12 Fauna: 6	Rick: 1 Sam: 1	Max: 10 Prius: 1 Trek: 1
Deontic authority	Energy (ES): 5 Air: 1 Justice: 1	Flora (ES): 6 Fauna: 1	Red: 1 Sam: 1	Max: 2 Prius: 1
Other less frequent directives[a]	Energy (ES): 1 Air: 1 Justice: 1	Flora (ES): 6 Fauna: 1 Rain: 2	Red: 6 Rick: 1 Sam: 2	Max: 2
	Directives With Nonverbal Cues			
Verbal + nonverbal	Energy (ES): 4 Air: 3 Justice: 7	Flora (ES): 14 Fauna: 4 Rain: 1	Red: 5 Rick: 6 Sam: 5	Max: 3 Trek: 1
Nonverbal only	Energy (ES): 2 Air: 1 Justice: 2 Everyone:[b] 2 Phone sound:[c] 1	Flora (ES): 2 Fauna: 2 Rain: 1	Rick: 4 Sam: 1	Trek: 2 Prius: 1
	Grand Total			
Total directives	101 Energy (ES): 56 Air: 20 Justice: 24 Everyone:[b] 2 Phone sound:[c] 1	110 Flora (ES): 66 Fauna: 38 Rain: 6	96 Red: 39 Rick: 36 Sam: 21	79 Max: 60 Prius: 10 Trek: 9

Note. ELL = English language learner; ES = English speaker.
[a] See Online Supporting Information.
[b] In these instances, the group's collective nonverbal cues (specific context, movement, silence) were the initiators of directives, not any particular player.
[c] In this instance, the sound of the phone's recording app initiated the directive.

typically categorized as question directives, some of them felt qualitatively different. Upon closer examination, we saw two cases of the use of *want to/wanna* structure from two different groups that illustrate the subtly different actions its use achieves.

Excerpt 1 shows the first time where the full or reduced form of the *want to* directive occurred in Group 1. The excerpt starts where the group was discussing the likelihood of electric cars returning to what used to be an electric car charging station called Electric Avenue. In line 10, Justice suggests that a previous comment about parking garages is not related to the return of electric cars and charging areas, and this comment receives weak agreement from Energy (11). After Justice closes the sequence (12), there is a long gap (3.5 seconds) after which Energy solicits a reporter for this destination (14) using the structure *who wants to*.

One of the primary game tasks was for participants to respond to the prompt at each destination about green technology in a recorded 'report' (in this location, the in-game prompt states, "Oh my gosh! What happened to 'Electric Avenue'? All we can see is a construction zone! Isn't this where electric cars used to be charged for free? Is this the beginning of the end of green technology?"). Justice and Energy have been reporters at previous destinations, while Air has not been a reporter yet. Possibly for this reason, Justice follows Energy's open (*who*) solicitation with a gaze shift to Air during Energy's directive (14) and a latched directive to Air (15), using the reduced form of the solicitation structure Energy had used: *do you wanna*. During her directive, Energy's gaze moves to Air. The consecutive solicitations by different members of the group (Energy, the ES, and Justice, the ELL), moving from general to specific recipiency with concomitant gaze shifts constitutes more than a simple, individual directive action. The cooperative and collaborative action sequence achieves a response from Air.

In Excerpt 2, the same group has moved a block away to the next destination in the game. As in Excerpt 1, the group has brainstormed some ideas to include in their report, at this destination, about uses of rainwater that is collected on the roof of a university building. At the end of their brainstorming, it is concluded that they are ready for the report and need not look online for more ideas. As part of the closing of the brainstorming sequence, Energy makes humorous comments about collecting and drinking rainwater (36–40) which is followed by pauses and discourse markers (42–45) to close the sequence. At this point, the same person, Justice, makes a direct solicitation to the same person, Air, to be the reporter for this information (46) using the reduced form of the directive *do you wanna*.

EXCERPT 1

Group 1 Destination 3

```
[ESLALMay52016RC1.1 25:24-25:33]
10 Justice: it's not related, (.) the electric
11 Energy:  yeah
12 Justice: okay
13          (3.5)
14 Energy:  who +^wants to + ^(1.5) talk +about it=
   j             +gz→E-----------+              +gz→A-------
   a              ^g→J---------------^
15 Justice: =do you wanna %talk?
   j        ------------------------------------
   e                          %gz→A

16 Air:      $I'm confused [eh heh heh (.) eh hah heh heh$
17 Justice:                [ah hah hah hah hah hah hah
18 Energy:                 [eh hah hah hah hah heh heh
```

EXCERPT 2

Group 1 Destination 4
[ESLALMay52016G1HC1 34:03-34:26]

```
36 Energy: drink your rain water! [eh hah hah hah wow
37 Air:                           [eh heh heh hah [hah
38 Justice:                       [hah ah heh heh
39 Energy:                                        [collect it
40          [and drink it!
41 Justice: [eh hah hah hah .hh
42          (2.0)
43 Energy:  alright
44 Justice: yeah
45          (1.0)
46 Justice: +do you wanna talk?
    j       +gz⊠ A----------------------
47          (4.0) ((A is looking at the phone))
48 Energy:  do you wanna talk about it or would you rather:
49 Air:     I'll talk about it=thi- (.) this one is easier
50 Energy:  $oka(h)y [heh heh heh
51 Justice:          [hah hha hahh
52 Air:              [eh heh heh hah
```

Do you wanna is the form Justice used at the previous destination for the same function: to solicit a report from the same peer, Air. In Excerpt 1, Justice's solicitation followed Energy's general solicitation for a report. In Excerpt 2, because Air has yet to make a report after three destinations in the game, Justice's solicitation is directly to Air. After a 4-second gap, Energy shows she treats Air as accountable to respond to Justice's directive by producing a directive with the same reduced structure (*do you wanna*) but adding an *or*-choice tag (48). Together with the multiple directives to the same participant from Excerpt 1, this second *wanna* directive to Air creates an action sequence (Levinson, 2012) of consecutive directives, which we analyze as the co-constructed meta-action of persuasion.

Excerpt 3 comes from another group (Group 4) using and repeating the same *wanna* construction at a different destination (Destination 1) and for a slightly different cumulative action. The group comes up with ideas for their report on advantages and disadvantages of riding a bicycle to the university. They close the sequence with Max and Prius's discourse markers (22 and 24) and Trek suggesting what can be used if a bicycle is unavailable. Max is holding the phone and he makes a quick pointing gesture to Prius before moving it to Trek as he formulates the directive to Trek first (26). Max orients to the delayed response by Trek as an upcoming dispreferred response and he adds a politeness tag, *please*, at the end of the directive turn. Trek's response is shy laughter in overlap with the end of Max's directive (28).

Hearing Trek's minimal response (28) as a rejection, Max shifts his gaze and points to Prius and repeats the same directive (29). Prius's delayed response warrants Trek's repeat of Max's directive (31) and adds a limitation, *the first*. Prius then provides a nonverbal response that is voiced by Trek and Prius (32, 33) and then Prius (36). Max then turns to Trek again and asks the same directive, this time in reduced form, without the matrix verb (34): *do you wanna*, and Trek assents (36).

Max's nonverbal behavior shows that the first directive is to either participant like Energy's in Excerpt 1, who used the nonspecific *wh*-proform with the full verb: *who wants to*. As in Excerpts 1 and 2, the repeated *wanna* directives in close proximity in Excerpt 3 produce a larger, co-constructed action sequence that might be characterized as begging. The perlocutionary effect of this begging action sequence is that Trek gives in and agrees to make a report, qualifying it with,

EXCERPT 3

Group 4 (ELL only) Destination 1
[ESL 123 AC1 G2 RC1 w audio 14:10-14:22]

```
22 Max:   yeah okay
23 Trek:  we have to go
24 Prius: alright
25 Trek:  with streetcar
26 Max:   +okay. +do you +wan[na tell¿ (.) [please¿
   m       +gz→Tre, Pri
   m               +points→Pri
   m                       +points→Tre
27 Prius:                                  [uh
28 Trek:                                   [$eh heh$
29 Max:   +do you wanna tell¿
   m       +points→Pri
30 Prius: [(well)
31 Trek:  [&do you wanna tell¿ the *first
   t       &points→Tre
   p                                  *shakes head
32 Max:    no[::
33 Trek:     [no::
34 Max:    +do [you wanna¿
   m       +points →Tre
35 Prius:      [no::
36 Trek:   okay
37 Prius:  eh huh
38 Max:    please Trek
```

"Okay. Sorry for my bad English or my (.) strong accent" (stated several lines later in the transcript; omitted from the excerpt).

We present these detailed descriptions of the *wanna* constructions because while in the quantitative (categorical) analysis, all but one of the *wanna* directives in their various forms (*do you wanna/want to, who wants to*) were coded as question directives, the sequential analysis shows that the repeated acts by two participants produce co-constructed action sequences that are more than just directives. The sequential layering and unfolding of the individual directives is important to consider when presenting the use of directives to language learners (Huth, 2020; Wong & Waring, 2010). Using such examples, learners can begin to see how individual language actions contribute to an integrated co-constructed group action. In the examples from the sequential analysis, individual speakers produce what can be categorized as directives. However, when the sequential context is seen, the individual directives add up to an action sequence (persuasion, begging) co-constructed by all three participants.

DISCUSSION

When examining how participants in digitally facilitated interaction direct others to further actions, we found a rich variety of directives used. They differed in degree of directness: direct (imperatives), conventionally indirect, indirect (hints, question directives); function, such as suggestions and asking for and giving permission; and use of linguistic or nonverbal strategies or a combination of these. Although directives with nonverbal cues constituted a smaller portion of the data than verbal-only directives (9–22% per group), they were nevertheless one category of strategies used to make meaning and direct others to act. Our results thus highlight the importance of examining varied features of embodied

interaction, as advocated by Atkinson (2010), Goodwin (2000), Linell (2009), and others.

While gestures, facial expressions, and movement are important aspects of embodied interaction that contribute to meaning making, they may be particularly relevant in tasks like the AR game that we investigated. Similar to others who examined group interactions in AR games (Hellermann et al., 2019; Thorne et al., 2015, 2021), we observed that participants utilized a variety of nonverbal cues (with or without supporting verbal cues) to direct others to further actions. They frequently used pointing combined with cryptic, often elliptical, imperatives, such as "video" and simultaneous pointing to a video button in the game's app. In other cases, movement by one participant prompted others to move as well. For example, in Group 1, after looking at the phone, Air stated, "We are right here so we go right there." He then turns around, starts walking, and is followed by his two teammates. The participants are often on the move as they engage in talk-in-interaction mediated by GPS-map–enabled mobile devices, which means that their physical surroundings are constantly changing. As Hellermann et al. (2019) demonstrated, such movement fosters "participants' use of the immediate context and the physical environment as raw material" for the task (p. 214). In our case, for example, such raw material was the group's passing of a building called Lincoln Hall that sparked a brief discussion of Abraham Lincoln and the Civil War. Likewise, imperatives often consisted of deictic references to buttons in the game's app and physical objects in the environment. The groups' movement through the ever-changing physical environment and the improvisational nature of such interactions provide opportunities for language learning that may not be as readily available inside the classroom (Hellermann et al., 2019; Thorne et al., 2015, 2021). It is thus all the more important to include discussion of embodied interaction in the teaching of pragmatics, which we address in the Pedagogical Implications section.

One surprising finding was the low use of conventionally indirect strategies (e.g., *Could you… ?*) by all groups. This contrasts with the findings in the interlanguage pragmatics research (see Al–Gahtani & Roever, 2012, for a review), where advanced speakers frequently use conventionally indirect strategies. One possible reason for this disparity is that our data were naturalistic (as opposed to elicited data often used in interlanguage pragmatics research). Hence, it is possible that conventionally indirect strategies are used less in naturalistic discourse. This said, we suspect that the nature of the task itself (AR game), in combination with evolving group dynamics, played a significant role in the low use of conventionally indirect strategies. The players were all students sharing the goal of getting to the endpoint in the game; in this context, it is possible that the participants were attempting to achieve and maintain solidarity with each other. This, coupled with the urgency to finish the game as quickly as possible (i.e., competing with other groups to reach the last location in the game[5]), may have warranted the high use of cryptic imperatives (e.g., "wait wait" in Group 3, prompted by what is visible on the GPS map with reference to the physical environment). We suspect that Group 3 in particular, who used the highest proportion of imperatives, might have consciously done so to achieve solidarity via the use of direct strategies (cf. Mills & Grainger, 2016). The close-knit nature of interaction in this group might be another possible indicator of players striving to achieve solidarity. While there were some prolonged silences in mixed Group 1, for example, extended pauses were not evident in Group 3. Also, while most groups relied on some *(Do you) wanna* constructions (between four and twelve per group), often when asking who wants to be the next to report, Group 3 did not use any such constructions. Thus, while the activity of making the video report appears to be a dispreferred one in most groups, the data indicate that Group 3 seems to have approached it with more solidarity and less hesitation.

It was surprising that even ESs used few conventionally indirect strategies and instead chose to rely on hints, question directives, suggestions, and somewhat on deontic authority. The nature of the task (naturalistic game play as compared to DCTs and role-plays where we typically find the use of conventionally indirect strategies) could be the determining factor in such different findings. Nevertheless, we find this somewhat unexpected because ESs, who were training to be teachers of ESL, exhibited a number of teacher-like behaviors, including asking questions that they knew answers to (i.e., display questions). ESs also used more directives in total, which may be due to the leadership roles they played in this game. (Both ESs and their ELL group members stated in postgroup discussions and written reflections that ESs assumed leadership roles). Given ESs' positioning themselves as leaders or facilitators, more authoritative formulations of directives would be reasonable to expect. We did observe such authority, albeit in the use of

deontic authority directives rather than in the use of conventionally indirect strategies. For example, in Group 2 (mixed group), the ES consistently displayed a deontic authoritative stance, which may explain the use of such directives as "And I think that one of you has to talk about finding the solar compactor" that only occurred in this group. We describe this directive as 'authoritative' because the instructions given to players did not specify who has to do the recording. Although our explanations of the possible reasons of low use of conventionally indirect strategies in our data are tentative, this finding itself provides implications for the teaching of pragmatics.

While ESs differed somewhat from ELLs in their usage of directives, they both used conventionally indirect strategies, hints, question directives, suggestions, deontic authority, and so on (albeit in varying proportions), which shows that language learners are capable of using the same types of directives as ESs. Because we also uncovered differences within mixed and ELL-only groups, we expect that a variety of other factors were at play, such as differences in individual linguistic repertoires, orientation to the activity (as a group leader or not), players' (often shifting) role of a phone holder or not, and the possibility of learning or situationally borrowing ES interactional patterns in the process of the activity.

Additionally, the sequential analysis enabled a more fully contextualized description of directives in small group goal-directed interaction. In particular, we illustrated how a linguistic category of speech act (e.g., the co-constructed *Do you wanna talk?* directive) may be used by several speakers (Excerpts 1 and 2) to co-construct a larger action sequence of persuasion. We also observed that attention to semiotic resources in context rather than to isolated utterances alone leads to understanding how the act of directive is proffered to different recipients (i.e., the role of pointing, gaze). The sequential analysis also includes how speakers attend to the perlocutionary effect of a directive (e.g., by responding to a directive or remaining silent) and what ramifications this has for the unfolding interaction (as illustrated in Excerpt 3).

PEDAGOGICAL IMPLICATIONS

The results of our study provide several implications for teaching pragmatics in a lingua franca context (e.g., ELF). We believe that these implications corroborate the principles outlined by Taguchi and Ishihara (2018). Next, we provide our thoughts on how such principles can be applied to instruction and illustrate using our context as an example.

Principle 1: Diversify Models of Pragmatic Language Use

Taguchi & Ishihara's (2018) first principle is: "[Diversify] the models of pragmatic language use" (p. 89) so as to reduce the reliance on English inner-circle norms. Language learners in institutionally located language classes are typically taught inner-circle norms and the need to use modals (*can, could, would*, etc.) when making polite requests, especially in situations showing power difference or social distance. However, we saw a very low incidence of conventionally indirect strategies in our data, possibly attributable to the need to achieve both solidarity and efficiency in communication, that is, features typical in lingua franca communication. However, it is also possible that the particular joint task at hand may have facilitated collaborative orientation to the activity rather than a heightened awareness of face-threatening acts (and thus the need for more mitigating strategies). As suggested by Taguchi and Ishihara (2018), awareness-raising may be the first necessary pedagogical step to increase learners' understanding of differences between inner-circle norms and varied lingua franca contexts of communication. After providing enough background and contextual information about the data in our study, teachers can ask learners to examine videos and transcripts and discuss the following questions: How often were modals used? Did you expect a higher or lower use of modals? Why? What other strategies did the players use to get others to do things? How does this compare to what we learned about polite communication among L1 speakers of English? Why do you think the game players interacted in this way? What forms and strategies would you use if you played a similar game in your native language? As further suggested by Taguchi and Ishihara (2018), teachers should likewise foster learners' awareness of linguistic diversity and plurilingualism and the role of ELF in today's context of globalization. These awareness-raising suggestions can be built into the questions that teachers ask their students to discuss.

Principle 2: Prepare Learners to Act as Ethnographers

Principle 2 is: Prepare learners to act as ethnographers so that they can study the social, *interactional*, linguistic, and embodied practices of a given community [emphasis added]. We see

great value in helping learners analyze authentic discourse to extract patterns they can use themselves. Applied pragmatics research has, since Cohen (2005), advocated for language learners to be analyzers of naturalistic language use (more recent advocates include Barraja–Rohan, 2011; Huth, 2020; Wong & Waring, 2010). Because each context of intercultural communication can exhibit different patterns of interactional strategies, students should learn how to become sensitive to varying contingencies emergent in interaction. As participant–observers, learners could be asked to examine various interactional contexts: an AR game involving learners from various L1 backgrounds versus one played by L1 speakers of English. This can be contrasted to other goal-oriented tasks (e.g., building a tower with spaghetti and marshmallows in groups or working on similar group projects) as well as mundane tasks (e.g., a conversation between friends or small talk between a customer and a cashier). The students' task could be to analyze the types of directives (if any) that they observe in these varied interactional contexts. By extension, students could be encouraged to consider near- and far-transfer scenarios in order to develop an adaptive sensitivity to the interactional accomplishment of collaboratively getting things done as a group. Part of the rich semiotic environment for the AR activity is the coordinated handling of, reference to, and reading from the mobile phone. Students might be asked to examine the influence of technology on the social organization of the AR activity, such as who holds the phone that has the game app or how the GPS map and location-indicating blue dot embedded in the map acts as deontic authority, prompting participants to utter such directives as "So I guess we just have to get to the start point (pointing at phone)." Learners could then determine that such a strategy minimizes the face threat as the authority is dictated by the game rather than by any individual player in the group. Learners could then be asked to compare how face threats may be minimized in other interactional contexts that do not involve the use of technology. With regard to this principle, Taguchi and Ishihara (2018) cautioned that learners should be "encouraged to avoid stereotyping, othering, or marginalizing cultures, interlocutors, and their subjectivities" (p. 92). In our view, having learners engage in discussions with discourse participants regarding their linguistic and embodied choices in specific interactional contexts can help minimize stereotyping and othering, for example, as such discussions would bring in interactants' emic perspective. Finally, learners need to be trained in methods of analysis (e.g., concepts from pragmatics and conversation analysis) in order to be able to undertake their own analyses (cf. Barraja–Rohan, 2011; Cohen, 2005).

Principle 3: Develop Learners' Metapragmatic Awareness

Principle 3 is: Develop learners' metapragmatic awareness (explicit knowledge) of real-life ELF contexts and strategies for communicative effectiveness. As Taguchi and Ishihara (2018) stated, "The learners-as-ethnographers approach (…) can promote meta-pragmatic awareness" (p. 93). Teachers can thus build on what learners observed during their ethnographic work and, through scaffolding, help their students discover the specific features of a given ELF context. However, as specific as individual ELF discourses are, there are common patterns as well (rapport-building, solidarity, etc.; Taguchi & Ishihara, 2018). After the initial brainstorming of peculiarities of a given ELF discourse, learners could be asked to find instances of rapport-building, solidarity, accommodation, code-switching, translanguaging, and effective communication in various ELF contexts. The next task could be to compare the embodied communicative resources that interactants used in each instance for rapport-building, accommodation, and so on. For example, in our data, they could find such solidarity indicators as "Come on Sam" used in Group 3 to encourage Sam to contribute ideas, or the 'begging' action achieved via a cascading *wanna* construction (as illustrated in Excerpt 3 of the sequential analysis) that was co-constructed by three participants. In our data, learners could also determine that participants' use of cryptic imperatives with nonverbal cues, such as "video" accompanied by pointing to a video button in the app, constitutes effective communication in lingua franca contexts rather than overuse of direct strategies and therefore nonadherence to target-like norms of politeness. The goal of such instruction should be to help learners view lingua franca discourse in its own right as opposed to being deficient in light of inner-circle norms.

LIMITATIONS AND FUTURE DIRECTIONS

While our study offers useful insights into a specific ELF discourse context, there are limitations. ELLs in our study were of intermediate to advanced proficiency levels and studying in an ESL context, which might minimize the differences between their discourse patterns and that

of ESs. We had a small number of groups (four), which limits generalizability. This said, generalizability may not be the only desired goal when taking into account the many local, situational, and emergent variations of ELF discourses. Instead, examining how participants build rapport, establish and maintain solidarity and cooperative action, and engage in other interactional patterns typical of lingua franca discourses is likely the desired benchmark in the evolving and heterogenous arena of ELF for communicative action.

As a subfield of linguistics, pragmatics is somewhat unique in that it does not focus exclusively on the forms or semantics of discrete elements of language per se, but rather on language use as a kind of social action. As we described in the quantitative analyses of ELF interactions, there is a considerable taxonomic array of directive types that were elicited as a function of engaging in the mobile AR activity. In numerous cases, linguistic utterances were clearly supported by gesture, gaze, pointing, and other embodied actions, and in some instances, directives were produced and interpreted solely through nonlinguistic cues. This research thus contributes to descriptive pragmatics investigations in ELF contexts and suggests that additional research is warranted into the ways that verbal and nonverbal resources are used, both together and independently, to achieve communicative and cooperative action. The sequential analysis section, focusing on the *wanna/want to* construction, illustrated the ways in which directives are potentially situationally diverse in the actions they suggest and also collaboratively constructed, transformed, and interpreted across multiple turns at talk. The mix of epistemological and analytical frameworks attempts to more fully elaborate the analysis of directives by using both categorical (etic) and process-oriented sequential (emic) methodologies. For its part, a sequential analysis contextualizes social actions (i.e., speech acts) and helps make visible the material processes through which participants collaboratively achieve the task goals associated with the AR activities. These material processes include the contingencies and interactions that emerge among the study's participants, engagement with physical objects such as the smartphone, and the constantly changing physical surroundings and reference points as players walk from location to location. This said, we acknowledge the potential commensurability issues of utilizing both speech act theory and sequential analysis and suggest that continuing and future research could explicitly address this topic (cf. Drew, 2017).

The situationally diverse directive types might be considered examples of 'messy' directives, but especially in application to teaching and learning ELF pragmatics, exposing learners to sequential analysis of talk-in-interaction, rather than isolated constructions alone, diversifies exposure to real-world pragmatics and helps prepare them to act as ethnographers (Taguchi & Ishihara, 2018), with the goal of gaining the ability to anticipate and interpret, and improvisationally produce, relevant and desired actions in encounters in ELF and other lingua franca settings.

NOTES

[1] Although conceivably all talk is goal-oriented, Taguchi and Ishihara (2018) explained the goal-oriented nature of ELF discourse as follows: "A successful pragmatic act is not about demonstrating nativelike pragmalinguistic and sociolinguistic knowledge. Rather, it is about calibrating and adjusting one's own pragmalinguistic and sociopragmatic resources, as well as other linguistic and semiotic resources, to the interlocutor and context in order to achieve a communicative goal" (p. 88).

[2] The groups were formed by the language teachers. While we know that for the mixed groups, the language teacher tried to diversify the groups in terms of their L1, we do not know why some participants, taught by a different teacher, shared an L1 in the ELL groups. Participants used only English in their game play interactions, including in ELL-only groups.

[3] While Searle (1976) included information-seeking questions in the category of directives, Ervin–Tripp (1976) excluded them. We followed Ervin–Tripp's approach.

[4] Table 2 does not list other formulations of verbal directives that were discussed in the literature but not found in our data. For readers interested in additional possibilities, see Blum–Kulka et al. (1989), Ervin–Tripp (1976), and Holmes (1983).

[5] We did not encourage groups to compete with each other. However, the fact that they all took similar amounts of time to finish the game, did not take a long time to rehearse their video reports, and did not engage in extended talk that did not pertain to the game all suggest that the groups may have decided to compete with other another on who reaches the last destination fastest.

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