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Toward an expansive interactional analysis

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Introduction

There have been dramatic theoretical developments in applied linguistics recently that call for a new orientation to language interactions. Scholars influenced by poststructuralist approaches (see McNamara, 2012), or more specific poststructuralist schools such as posthumanism (Pennycook, 2018), new materialism (Toohy et al., 2005), and spatiality (Canagarajah, 2017), have articulated the differences in understanding communication. These schools of thought have questioned the autonomy of grammatical structures and primacy of face-to-face interactions in communication, which were the foundational assumptions of modern structuralist linguistics. Instead, they treat communication as emerging as an assemblage in expansive spatial and temporal scales. The notion of assemblage (Deleuze & Guattari, 1987) emphasizes the performative nature of meaning, constructed by diverse social, material, and semiotic resources that mediate and shape each other dynamically, in space/time conditions that are layered.

As in any new scholarly development, early publications in this area are largely theoretical, aspirational, and reflective, or based on impressionistic data. It is possible that some schools will argue vigorously against a “normal science” approach to traditional research (Kuhn, 1962), making only limited claims evident within the data obtained by a uniform and consistent method (see, for critique, Pennycook & Otsuji, 2015). Poststructuralist approaches would argue for a more interpretive approach that would claim liberty to go beyond observed/recorded data to incorporate information from outside the text through eclectic methods. As we can infer from the notion of assemblage, the very division of text/context will be questioned as belonging to structuralist assumptions. In other cases, the very value of empirical approaches and close analysis will be questioned for their assumption that researchers can detach themselves from the “data” or that the face-to-face interaction can be made to stand still and separated from other influences for a close analysis. Note that, traditionally, close analysis has meant studying language within the narrowly circumscribed boundaries of the text or interaction in a moment-by-moment fashion, as in the case of conversation analysis (CA) (Sacks, Schegloff, & Jefferson, 1974; see also Prior & Talmy, this volume).

The emerging scholarly situation has resulted in a divide between empirical and theoretical studies. While we see “normal science” being conducted by schools influenced largely by
structuralist and cognitivist approaches, poststructuralist scholars are identified with more theoretical, interpretive, and reflective scholarship. Attempts to bridge this divide are also sometimes misunderstood, as they might be too interpretive for normal science and too positivistic for poststructuralist scholars. However, this binary is not productive for our field. There has to be an appreciation for rigorous, methodical, disciplined, and careful attention to detail, and also a consideration for how the most local and small-scale interactions are influenced by global geopolitical, ideological, and epistemological concerns.

As we work toward such an integration of the traditional tools of fine-grained analysis in our field with the recent theoretical discourses, we must critically examine popular analytical methods for the ways in which they may have to be adapted in the light of recent theoretical realizations. There have been promising developments. In the orientation to CA which originally focused predominantly on the verbal modality, Mondada, Goodwin, and others have expanded the resources taken into consideration (e.g., Goodwin, 2010; Mondada, 2014, 2016; Streeck, Goodwin, & LeBaron, 2011). This orientation has come to be the mainstream of contemporary CA research in recognition that “interaction . . . is always multimodal” regardless of analytic foci of individual studies (Hazel, Mortensen, & Rasmussen, 2014, p. 3). Conversely, we do not have to abandon certain methods simply because they do not go along with new theoretical orthodoxies. Research methods have different strengths and suit the analysis of diverse research questions and objectives. It is possible that they can be used in a complimentary way to address different concerns in a piece of research. Furthermore, certain methods can enlighten diverse forms of data that can enrich the analysis.

In this chapter, we consider how we might conduct interactional analysis in light of emerging theoretical orientations. We demonstrate how CA illuminates certain meanings in our chosen interaction. Then, we show how some ambiguous aspects of the interaction (i.e., whether a stretch of interaction could be considered a “side sequence” or integral to the ongoing interaction) can be decided considering additional information from beyond the face-to-face interaction. We also bring in other forms of data, such as publishing practices, research procedures, genre conventions of the interaction, and texts, to throw light on this possible side sequence. We term this marshaling of layered scales and semiotic resources expansive interactional analysis, influenced by the poststructuralist orientations. We call this expansive because we go beyond the here-and-now to analyze this interaction. We tie this analysis to our attempt to understand the nature of the competence international science, technology, engineering, and math (STEM) scholars demonstrate in their disciplinary interactions. Our analysis suggests that the competence needed for international STEM scholars is more than grammatical knowledge.

**Theoretical shifts**

In this section, we highlight three major theoretical shifts initiated by poststructuralist orientations and consider their implications for interactional analysis in applied linguistics research. We summarize these shifts in the interest of space, culling them from poststructuralist schools such as Posthumanism (Pennycook, 2018), Spatiality (Massey, 2005), New Materialism (Barad, 2007), Actor Network Theory (Latour, 2005), and Rhizomatics (Deleuze & Guattari, 1987). They are as follows:

1. **Metaphysics of presence:** this term refers to a tendency to value what is visible in the here-and-now. Traditional interactional studies have focused on the tangible and visible resources in the immediate setting as valid data for analysis. This approach is also valued by the empirical tradition in the field. What is treated as acceptable evidence is
immediately available to the senses. The emerging poststructuralist orientation is open to influences invisible in the setting, and resources from expansive space and time scales. They are open to considering how these influences from other places and other times are immanent in the face-to-face interaction. These contexts are not disconnected or secondary to the here-and-now. Geographers have introduced the term *layered simultaneity* to highlight how interactions in a specific place and time are layered with influences from other places and times (also used by Blommaert, 2005, 2010).

**2 Logocentrism:** this term refers to considering verbal resources as primary in meaning-making practices, treating other semiotic resources and modalities as secondary. Logocentrism is considerably influenced by the structuralist orientation in that language is patterned into a self-constituted and self-defining grammatical structure, which is the deep structure that generates the secondary communicative performance in social and spatiotemporal contexts. The poststructuralist notion of assemblage treats all semiotic resources as mediating and shaping each other with equal status. It also opposes the notion that there are pre-given structures (of language or other modalities) that shape performance. It is open to considering how meaning is performative – i.e., meaning as emerging in situated activities through an engagement with all mediating resources. It treats language working together with other sign systems (color, sound, gestures), including objects as meaning-making resources. Therefore, in the place of language or verbal resources, applied linguistics scholars in this tradition use the more inclusive terms of “semiotic resources” (Blommaert, 2010). This does not mean that there are no patterns or “grammars” in communication. These patterns emerge through a sedimentation of repeated activity in situated interactions. Therefore, some scholars use the term *spatial repertoires* to index the patterns that evolve in specific social and material spaces in the place of grammar (Canagarajah, 2017; Pennycook & Otsuji, 2015).

**3 Methodological individualism:** this term refers to treating the individual as the unit of analysis in scholarly inquiry. Traditional analysis has focused on the individual or a collection of individuals as the locus of meaning-making activity. This bias comes from the Cartesian assumption that our cognitive capacity makes each human being a separate unit for interaction with others as also autonomous beings. The poststructuralist notion of embodied practice in social, material, and semiotic networks considers the locus of meaning and competence as liminal and distributed. Meaning emerges in networks. Furthermore, going along with the notion of assemblage introduced above, poststructuralist orientations would treat meaning as emerging from the situated interaction between people, objects, and semiotic resources.

From the perspective of these theoretical developments, we now consider CA to illustrate some differences from the emerging theoretical realizations.

In early work, CA emerged as valuable for considering communication as situated interactions and negotiations between human agents (e.g., Sacks et al., 1974). CA went beyond the traditional bias of methodological individualism by considering communication and meaning as interactively achieved. CA also considered meaning as performative and emergent through the activity of the participants in an interaction. Over time, CA has generated methodological tools and resources for a fine-grained sequential analysis of talk. However, CA’s very strength – i.e., the capacity to focus closely on the building blocks of interaction – also keeps it from considering other time/space scales brought to attention by poststructuralist schools. CA traditionally prioritized verbal resources, treating other resources such as gesture and the
body as supplementary for meaning-making, largely given the scarcity of access to video recording technologies. It focuses on the here-and-now, and considers other times and places only when missing information needs to be supplied to understand the here-and-now. In thus separating the text in focus from the larger context, it also leads to a binary that the notion of layered simultaneity might challenge. CA also traditionally focused on the structure of talk and bracketed off the content of talk.

More recent work has taken the tools and resources of CA in directions closer to addressing some concerns of poststructuralist schools. Scholars now give equal importance to all semiotic resources, including language. They accommodate the role of objects, gestures, and the environment in considering how social agents accomplish activities and meaning. In some traditions, such as the studies of Chuck Goodwin (2013), meaning is treated as a distributed activity, going beyond the traditional bias of methodological individualism. Though proponents of this newer orientation cite recent developments in poststructuralism and materialist ontologies (see Mondada, 2016; Streeck et al., 2011), there are a few areas in which CA does not go too far. Many studies still adopt the orientation that people use the semiotic resources in their favor. Thus, it holds to human agency at the exclusion of the agency of other objects and beings. Also, the analysis is restricted to the here-and-now. The diverse semiotic resources taken into consideration are from the immediate setting of the interaction. Thus, CA assumes a metaphysics of presence.

It is in this context that we see the need for what we label an Expansive Interactional Analysis that can draw from a fine-grained analysis of talk, as developed by CA, but also be open to the other methodological concerns pointed out by poststructuralist schools. We demonstrate how we might consider the influences from more expansive spatial and temporal scales as impinging on what transpires in the here-and-now. We also demonstrate how the material resources and environment might constrain meaning making activity, qualifying individual agency. We thus treat meaning as emerging in a distributed fashion, in the interstices of people, objects, and semiotic resources. However, Expansive Interactional Analysis also faces difficult questions on the feasibility of a disciplined analysis. If “everything is connected to everything else” (Canagarajah, 2018), as schools such as actor network theory and complexity theory suggest, it is difficult to define the object or unit of analysis. Where does one start? The influences and resources to be considered in an analysis are limitless. There might also be a disjuncture between what the participants and analysts consider as relevant for a specific meaning-making activity.

A few ways of addressing this dilemma are the following. Scholars in complexity theory adopt the position that since everything is connected, one has to adopt analytical “cuts” for the study (Mays, 2017). That is, it is acceptable to define the unit of analysis based on the objectives of the study. To the notion of analytical cuts, we can also add scalar metaphors as developed in geography (Canagarajah & De Costa, 2016). That is, interactions are considered as involving overlapping, relative, and expansive scales – i.e., from the small-scale “here-and-now” to the most macro-level geopolitical and ideological considerations. We can thus consider using scalar metaphors to discuss different scales of time and space as they relate in an analysis. We can also define the cut as a face-to-face interaction, where the agency of social participants might be more on display, while we bracket off the global scales of influence which might constrain the talk. What scale or cut is treated in an analysis will depend on the objectives, research questions, and interests of the researchers.

From this point of view, it might be possible to adopt a CA-based analysis of a face-to-face interaction in the “here-and-now” to generate insights into the local construction of meaning.
Or, one can adopt how diverse semiotic resources are used by human agents for local outcomes, while keeping open the possibility that other time and place scales of consideration can influence meanings. Furthermore, a CA-based analysis can unveil “critical moments” or troubling sequences that Expansive Interactional Analysis might help resolve with additional scales of consideration. Thus, CA might help resolve the methodological question of which resources and scales researchers should bring to bear on their analysis. There is the possibility that these analytical methods might work in concert for a richer interpretation. We will demonstrate this possibility in our data analysis by considering methodological rich points, wherein the researcher realizes that existing approaches to doing research do not sufficiently afford him/her to understand the phenomenon in question (Hornberger, 2013). Our consideration of the methodological rich point addresses precisely the previous concerns about appropriate units of analysis.

Research background

The transcript analyzed in this section comes from an ongoing ethnographic study of international STEM scholars in their academic communication. We have been collecting the following forms of data from focal participants in microbiology, engineering, and entomology: video recordings of research group meetings (labeled RGM, by Swales, 2004); observations of research practices; multiple/serial drafts of publications and other written artifacts, such as grant proposals and conference presentations; and discourse-based interviews with focal participants. The motivation for these series of studies was to understand the nature of language competence required for successful STEM communication. Some of the emerging insights on this driving research question have been reported elsewhere (see Canagarajah, 2017, 2018). In the transcript that follows in the next section, we analyze the RGM interactions involving a South Korean postdoctoral fellow in microbiology, whom we call Jihun. The others in the transcript are Nick, an Anglo American primary investigator who runs the lab and the research project; Mohan, an Indian an associate professor in chemical engineering; Jie, a Chinese postdoctoral fellow; Jane, an Anglo American graduate student; and Rob, an Irish graduate student. The excerpt we analyze mainly involves Jihun and Nick.

Methodological rich points

While CA focuses on the moment-by-moment construction of orderliness in interaction, it does not entirely disregard extra-interactional concerns. In fact, CA is equipped with some notions that allude to the relevance of expansive scales in the here-and-now of interaction. These notions may include recipient design (e.g., third-person reference; how one frames information reflects his/her knowledge of and sensitivity to co-participants), epistemics (who has access/right/responsibility to different knowledge domains or territories), and members’ methods (how individuals make sense of the interaction grounded in their prior experiences), to name just a few. In what follows, we first analyze a fragment of a RGM interaction and identify methodological rich points (Hornberger, 2013) in which participants seemingly orient to expansive scales beyond the here-and-now. We then unpack the identified moments by considering additional spatiotemporal scales. Not only does this approach aid poststructuralist research on communication in providing a disciplined means of making analytical cuts, but it also helps CA researchers in re-specifying some of the central notions.

It should be noted that in the following excerpt all participants of the RGM are oriented to the monitor as Jihun presents an image obtained from an experiment that he conducted prior to and outside of the RGM.
Excerpt 1

1 JIHUN: °there are some-° there are some more,(.)
2 °this is (xx)° from the same grid,
3 (0.5)
4 NICK: >so your scale here is< pretty big right?
5 JIHUN: ↓yes.
6 (2.6)
7 NICK: ↓so >it could< even be that these-
8 {these guys are your proteins right?
9 {points at monitor with R index finger
10 JIHUN: °↓these thing?°=
11 NICK: =yeah.=
12 JIHUN: =ye:s?
13 NICK: °(x)°
14 (3.5)
15 JIHUN: >actually i didnt< realize until(0.3)
16 uh: i- uh (0.5) (that) I WAS using (.)
17 the >{em er ais<
18 {turns to right
19 ↓the microscope? ((turns back to right))
20 (0.8)
21 JIHUN: ↓then
22 NICK: (the) uh huh,
23 (.)
24 JIHUN: {the um (1.0)
25 {raises LH to shoulder
26 NICK: {scales? [{yeah]?
27 {sits up in chair
28 JIHUN: >[yeh scale is [actually different,=
29 NICK: [](magnification)
30 JIHUN: =so i- when i actually took the images
31 {it was ( ) nanometer, (.)
32 {points at screen with LH
33 {this bar,
34 {spreads L index and middle fingers apart
35 NICK: °yeah°
36 JIHUN: >and then< when i actually render (.)
37 to tii ai ef file
38 (and then) >it became {like< two hundred nanometers=
39 {quickly points at screen
40 =so (0.5) °so i dont know° (.)
41 s- (. ) thats [when-
42 NICK: [(except for) the function and then (xx),
43 JIHUN: yeah
44 NICK: [right?
45 JIHUN: [its a little bit different °i think°
46 (2.8)
Excerpt 1 begins as Jihun presents a microscopic image on the screen, around which the interaction revolves. Prompted by the visual, Nick makes a confirmation check concerning the scale of the image to lay the groundwork for the interpretation of the image (line 4). Following the minimal confirmation by Jihun, Nick produces another confirmation check, accompanied by a deictic gesture directed at some objects on the screen (line 7–9). Both of these turns produced by Nick are prefaced with so, which is a turn design often used to constitute a course of action that is “incipient or ‘on agenda’” (Bolden, 2009, p. 996, emphasis in original). Though the design of these turns are similar to one another, they refer to distinct domains of knowledge (for more information on knowledge management in interaction, see Stivers, Mondada, & Steensig, 2011). While the first instance was about the technical detail of the image generation (i.e., scale of magnification), the second concerns the initial interpretation of the image (i.e., presence of proteins in the image). By virtue of asking these questions, Nick positions Jihun as K+ (i.e., more knowing) in both of these domains. After a brief sequence of repair (lines 10–11), Jihun confirms the possibility of the presence of proteins with a certain degree of hesitation marked by the elongated vowel and rising intonation (line 12).

Taking the gap in line 14 as indicating the availability of the floor, Jihun launches a multi-unit action of accounting for the trouble involved in the generation of the images (line 15). With respect to the two domains of knowledge made relevant above (i.e. image generation and interpretation), Jihun’s accounting concerns the former. Nick maintains alignment and affiliation with Jihun using vocal continuers (“uh huh”) and other supportive actions, treating Jihun’s telling as relevant and not yet complete (lines 22, 26, and 35) (Stivers, 2008).
Upon the completion of Jihun’s accounting (line 45), Nick produces a turn that is designed in a peculiar manner (lines 47–49): Nick’s utterance is produced as a dependent clause beginning with a subordinating conjunction “cuz” and containing a demonstrative pronoun “that” without the immediately preceding referent. Given these design features, Nick’s turn may appear to be sequentially misplaced at first glance. However, when considered in relation to his earlier so-prefaced confirmation checks (lines 4 and 7), the coherence of his speech content and turn design becomes evident. It appears that these turns, although there is a sequential discontinuity, constitute an interactional project, “a course of action that at least one participant is pursuing, which may at first be opaque to others then retrospectively discernible” (Levinson, 2013, p. 122). In the case in question, the project has been to interpret, critique, and improve the microscopic images through dialogue. Upon the resumption of the project in line 47–48, Nick takes the lead more insistently and explains why the scale of magnification may be important for their purpose (lines 54–63). His insistence is evident in lines 54 to 56 when he abruptly directs Jihun’s attention to the scale of magnification through gesture and speech, rather than building on Jihun’s preceding turn concerning some small objects in the image. Meanwhile, Nick also takes care to mitigate his claims using modal verbs and incremental phrases (i.e., “or something like that” and “I don’t know”), deferring to Jihun’s epistemic primacy in experimental details.

Considering the coherence in Nick’s turns discussed earlier, Jihun’s account in lines 15 to 45 now appears to constitute what Jefferson (1972) called a side sequence:

In the course of some ongoing activity (for example, a game, a discussion), there are occurrences one might feel are not ‘part’ of that activity but which appear to be in some sense relevant. Such an occurrence constitutes a break in the activity – specifically, a ‘break’ in contrast to a ‘termination’; that is, the ongoing activity will resume. This could be described as a ‘side sequence within an ongoing sequence.

(p. 294)

It may be premature to characterize Jihun’s account as a side sequence, however. While there is indeed a sense of a break in Nick’s project based on the sequential analysis presented, our interpretation may change based on whose perspective we take as a point of departure. That is, if we take Jihun’s perspective, he could have been pursuing a different project focusing on explaining the data generation process that he is in charge of in the research group. Also, it is not clear whether Nick perceived Jihun’s accounting as a break in the ongoing project, as he provided aligning and affiliating actions to cooperate with Jihun. In this regard, we have competing evidence in interpreting Jihun’s actions within the RGM. A more informed analysis may require considerations of spatiotemporal scales beyond the here-and-now that participants seem to be orienting to in interaction. Taking this as a methodological rich point we demonstrate an Expansive Interactional Analysis approach in the following section.

Expansive interactional analysis: a demonstration

Through participants’ observable conduct, we can begin to see some extra-interactional concerns that emerge (e.g., shifting subject positions, the purposes of the RGM, the need for publications and the importance of images within publications, assumed expertise in different subject matters and techniques). From an Expansive Interactional Analysis perspective, the interactions taking place in the RGM involve various spatiotemporal scales. These scales are made relevant and emerge at various points in the interaction through the here-and-now. Sometimes
the here-and-now of the talk in the RGM presents mysteries that can only be resolved when ethnographic data from beyond the RGM is brought in. An illustration of this situation is the discrepancy between the epistemic stance and epistemic status of Nick (i.e., the principal investigator [PI]) in Excerpt 1. The discrepancy between Nick’s epistemic status as more knowledgeable (i.e., professor and PI of the RGM) and his epistemic stance attested in the clarification questions posed to Jihun can be resolved if the analysis is widened to include information about the RGM, revealed through more extensive ethnographic research. STEM scholars in RGMs engage in distributed practice, where scholarly products are co-constructed, with participants playing diverse roles that contribute to the final product (see Canagarajah, 2018). In this case, Jihun is responsible for conducting the experiment and producing corresponding images and tables. Thus, he has epistemic access and is more knowledgeable than Nick with respect to the procedures of the study. For example, in Excerpt 1, Nick offers a proposition in line 7 followed by “right?”, which reflects an epistemic stance that is not congruent with the epistemic status as the PI. In other words, “right?” said with a rising intonation indicates that Nick is positioning Jihun in a more knowing position at least in this particular instance, despite the higher status of his knowledge of the overall research project and as a more experienced researcher and professor. Set up this way, the RGM becomes an arena in which Jihun’s and Nick’s epistemic status alternates between more knowledgeable with respect to the experiment (when Jihun is in a position to answer Nick’s questions) and less knowledgeable when his work is critiqued by Nick and the other team members. The negotiation of such stances is one of those pragmatic features STEM scholars should be competent in. For researchers unfamiliar with such RGM practices, some misunderstanding might result from the data.

Invoking spatiotemporal scales beyond the here-and-now provides a means of understanding a methodological rich point represented by Jihun’s response in line 15, as well. Nick seeks to ascertain whether the particles shown on the screen are proteins. In his response, Jihun launches into a relatively lengthy account which, on the surface, does not appear to be relevant to Nick’s initial question in lines 7–8. It appears to be a side sequence, presenting a methodological rich point for the analysis in that we do not understand how Jihun’s answer fulfills Grice’s (1975) maxim of relevance in being a cooperative speaker. Jihun’s account (lines 15–45) concerns imaging, MRI, and TIF files; that is, how he generated the image shown on the screen. Given this, the question we should tackle is: in what ways are images relevant to the RGM in general and to this context in particular? From interviews with Jihun, we have learned that he is the expert on imaging work in his research team. He would be held responsible for any distortions or lack of clarity in the images. In this regard, interview excerpt 2 provides an insight.

**Excerpt 2**

JIHUN: In the EM, when I (.) make some observation with the EM
SURESH: EM is
JIHUN: Electromicroscope
SURESH: Yeah Electromicroscope
JIHUN: I spend a long time trying to find something I want to see(.) What happened was that one of the collaborator in University of Virginia they also were doing similar research with others then they were unable to find those objects then one time they visited here and asked me to show how I did. So I showed because I initially sent them my protocol very detailed in detail but even though they followed it they couldn’t reproduce it.
SURESH: Interesting yeah
JIHUN: So I showed how I did. Then one thing they found is that okay, I got it, that’s a human factor because I spend a long time on the EM to find, until I find. So then they the person from UV said that their technician, or whatever researcher he doesn’t think the person do that.

SURESH: He didn’t spend too much time

JIHUN: Right the person is kind of just (x) and then to see just briefly see if the person sees it then okay that’s good if person doesn’t see okay it failed

In the interview, Jihun describes his skills of using the imaging machine (i.e., EM and MRI). He is proud of his achievement. He achieved findings that a collaborating team could not because they were not as careful as he was. Jihun said this after he was asked if he had any qualities, personal or professional, which distinguished him from others in his team. As Jihun represented his capacity in creating images as a unique quality, the interview excerpt reveals the place of images in the overall activity of conducting research around which RGMs are organized. In this case, the experiments resulted in the production of images that are then analyzed in the RGM.

The central role of images in the RGM is corroborated not only by the recurring discussions around the clarity of images in the interactional data (e.g., lines 54–63, 65–70), but also the fact that the image in question received commentary from journal reviewers, as can be seen next. A rough count of the responses of the reviewers for this article showed that 80% of the remarks were about the clarity and persuasiveness of the images. The rest concerned their claims or style of writing. The reviewers were concerned if the images showed what the team claimed. In conversations with Suresh, Jihun called the images “data” and not just representations of the data. In other words, the visual images were metonymic of data in this field.

As an illustration, consider reviewer comments 1 and 2, and the team’s response (indicated with ->).

**Reviewer comment 1 and response:**

In TEM images for Figure 3 and Figure 4, I think it would be good for the authors to include carats highlighting the products that represent microfibrils for the uninitiated reader.

-> Microfibrils have been marked with arrows in each figure and the legends have been updated.

**Reviewer comment 2 and response:**

Figure 1: It is difficult to see any band in the Coomassie part. I assume that you see something in the elution lane for the CESAs?

-> There is a major band in the elution fraction. We have added an arrow in Figure 1B. Please note that the band is not PpCesA5, but endogenous Pichia proteins.

Though the team members discussed these concerns extensively in their RGM, their final solution was simple. Jihun told Suresh in an interview that they simply pointed to the details that mattered so that it was easier for both the reviewers and readers to focus on.

As can be seen, the authors of the paper addressed the reviewer comments by marking the image with arrows to focus the “uninitiated” reader’s attention. Thus, the image represents a more developed version of the images referred to in Excerpt 1.
If we return to lines 15–45, although it may seem as though Jihun did not make a relevant contribution, given Nick’s initial question, Jihun is responsible for the image creation and possibly feels ownership over it. Jihun’s response in those lines is oriented to another scale, that of producing the image, rather than the interpretation of the image in the here-and-now. As such, it is relevant to the RGM and the context in which the response is situated while the listener/reader not familiar with the RGMs in plant microbiology may at first wonder about the relevance.

If the RGM yields new questions or insights regarding the image, it is Jihun who must re-run the experiment and re-produce the image. A larger question that emerges from this insight relates to the traditional notion of side sequence used in CA. If we take Nick’s perspective without regard to larger spatiotemporal scales, it is possible to see a side sequence launched by Jihun in Excerpt 1 – but what if we take Jihun’s perspective? In the latter case, it may not be a side sequence at all, but rather a part of the overall interactional project.

The relevance of Jihun’s response in line 15 in Excerpt 1 is supported by evidence that images resulting from research comprise an important locus of attention in the publication process and that Jihun foregrounds the ability to discern relevant objects in images as his distinguishing quality. Given these lines of evidence from scales other than the here-and-now of the RGM, although Jihun’s response in line 15 appears to diverge from the interactional norm, the response invokes a relevant scale, namely, the one oriented to obtaining the image. This way, the notion of distinct spatiotemporal scales operating in the RGM allows us to bring clarity to a methodological rich point found in the microanalysis.

The activities intended to obtain and generate images after conducting the actual experiment take place in labs outside of the space of the RGM, operating on a different spatiotemporal scale than the RGM itself. While these activities take place outside of the RGM, they are constantly indexed and brought in as the participants of the RGM discuss how to refine the images as representing the results of the experiments toward publication and based on their previous experiences with journal requirements and imaging techniques. In this sense, the use of data that clearly lies beyond the here-and-now of the interaction in the RGM helps to bring clarity to a methodological rich point found in the RGM analysis. In other words, the RGM is addressing various layers, each involving a different spatiotemporal scale. In addition to the spatiotemporal scale of obtaining and generating images, the participants work toward publication, which involves a set of activities such as literature compilation, writing the final draft, and responding to editors’ and reviewers’ comments. The spatiotemporal scale of publication is closely related to other scales in that the manuscript builds on them. Another scale is the long-term collaboration of the research team with another team based in another university. This scale may involve several publications and image taking episodes.

It is crucial to note that the multiple spatiotemporal scales involved in the activity of conducting research are bound to each other. Images play a significant role in this regard as they are implicated in all spatiotemporal scales; they are generated by the experiment, then, as Jihun said, scoured so that the relevant elements can be discerned. The research and image might have been obtained about a month before the RGM. They are then brought to the here-and-now of the RGMs and are the central focus of the conversation. Their clarity and relevance to the research are discussed in the meeting. Suggestions are then acted on. Having been improved upon through the reviewers’ comments and the RGMs, they appear in the manuscripts resulting from the RGMs. As can be seen in Reviewer comments 1 and 2, they are commented on by the reviewers as well, illustrating their important place in the final article. In this sense, images serve the function of binding together the various spatiotemporal scales. Images introduce an element of history into the conversation in the here-and-now in that they
represent the accumulation of what has preceded the RGM and what is relevant. It might be
said that the image embeds layered simultaneity (Blommaert, 2005). It indexes the time the
research was conducted, months later when it was interpreted, much later when reviewers
evaluated the articles, and finally readers when read it perhaps years later. The conversation
in the RGM is mindful of all these time and space scales. Methodologically, the integration of
CA and expansive interactional analysis ensures that the analysis captures the interaction of
the history of the activity and other scales on the one hand and the here-and-now of the present
on the other hand.

These multiple spatiotemporal scales entailed in the RGM find linguistic expression in
the RGM itself. The image-obtaining scale, for instance, is linguistically indexed in excerpt
1 using such terms as “microscope”, “TIF”, “magnification”, and sometimes the verb “see”.
However, it is the way the terms are used that determines what spatiotemporal scale they
index. In some ways, it is the participants who might know best which scale they are referring
to, as insiders to their field. The researchers may lack the knowledge on their indexicality.

The textured quality of the RGM interaction — the fact that there are various spatiotemporal
scales brought in depending on what fits the participants’ agenda — carries significant implications
for what it means to be a competent member of the RGM. At one quite obvious level, the partici-
pants, particularly Jihun and Jie (who received most of their education in Korean and Chinese),
should know the terms and the corresponding spatiotemporal scales they refer to. Yet their com-
petence must extend further to navigating comfortably between the various relevant scales and
understanding when one scale is being invoked and which scales can appropriately be deployed.
This complex back and forth demands an adequate understanding of situated meanings (see Gee,
2004) and not just the terms. The reason why Jihun can participate successfully in the RGMs is
that he has conducted the experiment, used the machines to obtain images, and has experience of
publishing. Jihun has lived through these experiences, which enables him to grasp the rich indexi-
cals associated with the scales brought into the RGMs and function effectively despite his own
insistence that he is not a proficient speaker of English, as he indicated in an interview with Suresh.

**Excerpt 3**

JIHUN: I still think I still need to improve my English.
JIHUN: But sometime if I get questions from the audience sometimes I have some hard time
understanding because they have some different background It’ll be better if I can
understand spoken language better and I am more fluent.
JIHUN: I’m still struggling with understanding the spoken language.

Though Jihun feels that he should become more proficient in spoken English, he is still a
successful and valuable researcher in this team. The excerpt and interaction show that more
than language required for a successful interaction in STEM. The monitor (with the critical
image) mediates the interaction. As all the participants focus on the monitor, using gestures
and deixis to refer to details in the image, their need of English grammar becomes less rele-
vant. More importantly, they share disciplinary vocabulary (as in Blommaert’s, 2010 notion of
truncated multilingualism) that enables them to get their work done even without an advanced
proficiency in English. Traditional SLA, influenced by CA (see Long, 1997), would consider
some of the incomplete sentences, pauses, and grammatical deviations of the international
scholars as examples of limited proficiency. But our data analysis raises questions about lan-
guage proficiency when we take into consideration expanded semiotic resources and spati-
otemporal scales.
Conclusion

In this chapter we attempt to show how an expanded analytical orientation that considers more diverse semiotic resources beyond words and more expansive spatiotemporal contexts can help resolve some interpretive concerns in our data. We also show how methods can work together to enrich our analysis. CA helps us identify meaningful units of analysis (or cuts from ongoing interactions for analysis). These help us pay special attention to the sequence of talk. They provide a fine-grained analysis of language to understand the shifting stances and positions of the interlocutors. However, in some cases, a localized analysis turns out to be ambiguous and doesn’t help us resolve interpretive questions. In our case, we found it difficult to decide whether Jihun’s turn in line 15 was irrelevant to Nick’s question or a side sequence that was partially relevant. Based on the additional data we bring from our ethnography, and the invocation of other semiotic resources and spatiotemporal scales, we interpret Jihun’s contribution as central to the ongoing talk. We offer this analysis as an example of how we can expand our methodologies by bringing together the tools we have inherited from our rich history of applied linguistics.

References


