Gesture Analysis and Organizational Research: The Development and Application of a Protocol for Naturalistic Settings

Abstract

Gestures are an underresearched but potentially significant aspect of organizational conduct that is relevant to researchers across a range of theoretical and empirical domains. In engaging the cross-disciplinary field of gesture studies, we develop and apply a protocol for analyzing gestures produced in naturalistic settings during on-going streams of talk and embodied activity. Analyzing video recordings of entrepreneurial investor pitches, we work through this protocol and demonstrate its usefulness. While doing so, we also explore methodological tensions in gesture studies and draw out methodological arguments as they relate to the analysis of these fleeting and often intricate bodily movements. The paper contributes a generally applicable protocol for the analysis of gestures in naturalistic settings, and it assesses the methodological implications of this protocol both for research on entrepreneurship and new venture creation, and for management and organization research more generally.

Keywords

Gestures, naturalistic settings, investor pitches, organizational presentation, conversation analysis, cognitive linguistics, multimodality

Introduction

Gestures are an underresearched but potentially significant aspect of organizational conduct relevant to researchers across a range of domains such as organizational communication (Jablin & Putnam, 2000), multimodality (Iedema, 2007; Kress & van Leeuwen, 2001), visual studies (Bell, 2012; Bell, Warren & Schroeder, 2014), metaphor analysis (Cornelissen, 2005; Cornelissen & Clarke 2010), and conversation analysis (Llewellyn & Hindmarsh 2010), and for those interested in empirical settings in which gestures often occur such as keynote lectures (Wenzel & Koch 2018), strategy briefings (Gylfe, LeBaron, Franck & Mantere, 2016) and investor pitches (Clarke, Cornelissen & Healey, 2019). In organizational research, while the moving bodies of speakers have been drawn into analytic accounts (see Hindmarsh & Pilnick 2007; Llewellyn, 2014; LeBaron et al., 2016), gestures, defined as movements of hands and arms that co-occur with speech, as a specific subset of embodied conduct have been largely overlooked. This is a significant oversight because gestures may be tightly coupled with the messages and actions that speakers project in natural settings (Kendon, 1972; McNeill, 1985; Kaschak, Madden, Therriault, Yaxley, Aveyard, Blanchard & Zwaan, 2005). Gestures may elaborate upon what is said or add entirely new aspects not present in speech. In this sense, gestures have been said to play "an integral part of an individual's *communicative* effort" (italics in the original) (Kendon, 1983, p. 27).

Gestures have not been pursued in-depth in organizational research perhaps due to certain barriers to the development of such work. Researchers wishing to investigate gestures in naturalistic settings confront a variety of daunting methodological questions and challenges. While there has been some work recently in the organizational domain in relation to understanding gestures through experimental means, where conditions are orchestrated and controlled by the researcher (Congdon, Novack & Goldin-Meadow, 2018), there is little specific guidance on analyzing gestures "in the wild" i.e. the natural interactions and

communications that routinely happen in organizations in the form of meetings, presentations, handovers, discussions, etc. (Streeck, Goodwin & LeBaron, 2011). The cross-disciplinary field of gesture studies is also a highly specialized domain that draws on technical frameworks that may be unfamiliar to organizational researchers. For those new to the area, there is little guidance on basic questions regarding how to record and describe gestures, how to represent gestures in research papers, which gestural forms commonly run alongside speech, and which research questions can be addressed by analyzing gestures. The present paper addresses these concerns. It introduces the field of gesture studies and empirically illustrates a protocol for gesture analysis in naturalistic settings. In elaborating the protocol, we produce a gesture analysis of a single original dataset consisting of 54 video recordings of "investor pitches" that we use to illustrate the value of the protocol, and in doing so we highlight the role of theoretical assumptions in gesture research.

The paper is organized as follows. First, we introduce the field of gesture studies and frame a central tension in the field, i.e., between action-oriented approaches that analyze what gestures *do* and cognitive approaches that analyze how gestures offer insight into how people are "thinking." Literature on "investor pitches" is then reviewed and we argue they present an interesting context from which to explore the kinds of contribution gesture studies might make to research on organizational communication. A six-step protocol for gesture research in natural field settings is then introduced and elaborated on through the analysis of the "investor pitch" dataset. Here, we aim to contribute a protocol for naturalistic settings, in contrast to recent research that has focused on manipulating gestures in experimental conditions and on using experimental methods (Congdon et al, 2018; Clarke et al., 2019). Through this analysis we reveal what we call an "entrepreneurial gesture code" or a recurrent set of six gestural forms through which entrepreneurs address matters important to them including "expansion," "growth," the establishment of "new combinations" and so on. The

discussion and conclusion evaluate the protocol, and we consider how gesture analysis might enhance studies of entrepreneurship and new venture creation and organizational and management research more generally.

Gesture Studies: A Brief Introduction

Gesture studies is a multidisciplinary field that cuts across linguistics and the social and cognitive sciences, and it is based upon a shared set of conjectures: gestures communicate, have a distinctive character that separates them from general body movements and conform to recurrent types. These points are briefly discussed below before exploring a central tension within this multidisciplinary field.

Do gestures play a communicative role? In provocatively challenging this view Rime and Schiaratura (1991) argue that they do not, suggesting that interlocutors typically fail to notice gestures, that gestures make no difference to comprehension and that recipients often fail to link gestures with lexical content. Gestures, they argue, are not communicative. The field of gesture studies has however assembled compelling evidence against this argument from studies informed by different methodological traditions. A series of classic experimental studies (see Kendon, 1994, p.177-187 for a full account) show the importance of gestures in communication. For example, Berger & Popelka (1971) demonstrate that recipients develop more accurate understandings when utterances are produced alongside *emblems* or *quotable gestures* (gestures that can be used as substitutes for words e.g. the "peace sign"). In another experiment, Rogers (1978) played video recordings of people speaking and gesturing to subjects under three conditions: (1) with sound and vision, (2) with sound and vision but where the mouth and face of the speaker was blurred, and (3) with only sound. Visual access to the speaker, even when the mouth and face was blurred, was associated with improved

comprehension for listeners. Drawing on very different methodological resources, early microanalytical work in sociology (Heath, 1986; Goodwin, 1986) recovered how people allow their conduct to be guided in light of interlocutors' gestural work, for example, when people point or nod and successfully redirect the visual attention of a companion without any verbal content.

Second, there is widespread agreement that gestures have defined characteristics that differentiate them from more general body movements such a fidgeting, postural shifts or self-manipulations (Bressem & Ladewig, 2011; Kendon, 1996). Gestures are characterized as distinctive phases of activity that are marked and separate. Schegloff (1984) calls them "excursions" or movements that shift from a "rest position" through a preparation phase to the main gesticulation or "stroke" phase, which may be "held" before returning to the rest position via a "retraction" of some kind (Kendon, 1980, p. 212). As such, gestures have a "peak" structure (Kendon, 1980) or a semiotic core or central business that is often, though not always, bounded by a clear beginning and end. Moreover, gestures often display a kind of symmetry (Kendon, 1996); when recordings are played backwards and forwards, the gesture looks similar.

While gestures are used in a range of communicative settings for different communicative purposes (Ekman & Friesen, 1969), researchers have identified particular patterns through which people display gestures. A number of classifications for these patterns have been developed (Efron, 1941; McNeill, 1992; De Ruiter, 2000; Cassell, 1998; Kendon, 2015). While each of these classifications is slightly different, they overlap a good deal, and a shared vocabulary has been emerging. *Deictic* gestures point to either real or imaginary persons or objects while *emblems* or *emblematic* gestures sometimes called *symbolic* gestures convey verbal meaning without words (e.g., a thumbs-up in Western culture). What McNeill (1992, p. 76) calls *iconic* gestures sometimes called *literal reproductive* or *pictographs* depict

the semantic content of speech in a literal fashion, i.e., a person talking about breaking a tablet in two might motion with his or her hands to mimic breaking something apart. Like *iconics*, *metaphoric* gestures depict imagery present in speech, but unlike iconic gestures the verbal content does not have a material form, i.e., a person commenting on the length of a meeting might accompany this comment with a hand rolling motion (Cassell, 1998), depicting something that has gone "on and on." *Beat* gestures (Cassell, 1998), sometimes called *parsing* gestures (Streeck, 2008b), do not illustrate the content of speech but work to divide or "parse" the speech. Kendon (2015) defines three categories of gestures: *pragmatic* gestures reveal the action being performed; *deictic* gestures direct the attention of others; and *representational* gestures conjure up objects, persons, spatial relations, etc. that may be literal or metaphoric.

Gesture studies has developed as an interdisciplinary field based on these shared conjectures. While the field is pluralistic, Kendon argues that the central tendency of contemporary gesture studies is to focus on psychological processes. He argues that "for the most part, the hand movements that people make when they speak have been studied as representations of the substantive or propositional content of the utterance, seen as providing clues about the mental or cognitive processes governing speaking" (Kendon, 2017, p. 157).

Links between psychology and gestures can be traced to pioneering nineteenth century studies such as Tylor's (1865) *Researches into the early history of mankind*, which devotes three chapters to gestures. In the twentieth century, Kendon (2007) notes a series of developments that framed and animated the psychology of gestures. For example, a search for "language origins" (Hockett & Ascher 1964) led scholars to systematically codify the design features of spoken language such that they could be compared to other sign systems in which other actors engaged; this led, for example, to the analysis of great apes' gestural expressions, which were shown to far exceed their vocal capacities. The cognitive turn in

linguistics and Chomsky's notion of a hardwired "language acquisition device" led researchers to video record the utterances of very young children, data which revealed the importance of semantic actions of any type, including gestures exchanged between mothers and infants (Bates, Benigni, Bretherton, Camaioni, & Volterra, 1979). Alongside the work of Bates et al. (1979), which linked speech and gestures as manifestations of a general process came David McNeill's (1985) influential argument that gestures share with speech a common "computational stage" and thus form part of the same psychological structure (McNeill, 1985, p. 350). In focusing on psychological activities occurring during speech, he challenged a suite of previously secure distinctions, for example, between what is (and is not) "linguistic" (McNeill, 1985, p.350).

With the protocol that we develop in the present paper we engage the psychology of gestures by drawing upon cognitive linguistics (see Lakoff, 1987; Langacker, 1987; Talmy, 2000), a framework employed by McNeill (see McNeill & Levy 1982; McNeill 1992) and others within the field (see Langacker, 2008). Cognitive linguistics, an approach to the analysis of natural language originating in the late seventies, is concerned with how language forms our thoughts by allowing us to organize, process and convey information. Specifically, we draw on the foundational work of Lakoff and Johnson (1980, 1999) who developed Conceptual Metaphor Theory (CMT). A basic tenet of CMT states that the pervasive use of verbal metaphor reflects the fact that people think metaphorically and that such metaphors are manifested in speech, *gestures, body movements*, and visuals (Forceville & Urios-Aparisi, 2009; Cienki & Müller, 2008). According to Lakoff and Johnson's (1980, 1999) theory, language interacts with the body. Conceptual metaphor is "a natural part of human thought . . . [and] which metaphors we have and what they mean depend on the nature of our bodies, our interactions in the physical environment" (Lakoff & Johnson 1980, p. 247). Metaphors link two conceptual domains, the "source" domain and the "target" domain. The "source" domain

is the conceptual domain from which we draw metaphorical expressions based on concrete, embodied and easily understood concepts. The "target" domain tends to be abstract and takes its structure from the source domain through the metaphorical link.

Based on this argument, evidence of how people think of one domain in terms of another should appear in gestures; "if speakers are thinking in terms of imagery from the metaphoric source domain, we might expect to see some representation of that imagery in their gestures" (Cienki, 2016, p. 604). The enactment of metaphors in gestures can therefore serve as strong confirmation of the active use of a metaphor in an individual's language and thoughts and supports "the dynamic creation, and recreation, of metaphoric thought in the bodily act of online communication" (Gibbs 2008, p. 292; Casasanto & Bottini 2014; Cienki 1998, 2005, 2013; Müller 2008; Sweetser 1998).

While cognitive linguistics is especially good at understanding *metaphoric* (McNeill 1992) or *representational* (Kendon, 2017) gestures, we argue for the need to supplement this predominant focus with microanalytic sensibility (Goodwin, 2000a; Streeck, 2008a) grounded at the interactional level to recover the social and interactional functions of *pragmatic* and *deictic* gestures (Kendon, 2017). In noting that the field of gesture studies has tended to privilege psychological processes, Kendon (2017, p. 157) sounds a note of caution by reminding us that "speaking is *also a form of social action*, however, and gestures play an important role in this" (emphasis added). As well as providing clues on how people are thinking, gestures can also be used to *do* things. Through the protocol we develop we therefore draw upon methodological resources from the microanalytic approach (see Streeck, 2008a), which itself engages and draws upon conversation analysis (Sacks, Schegloff & Jefferson, 1974) to recover the character of *pragmatic* and *deictic* gestures.

Conversation analysis (CA) was first developed in the 1960s (see Schegloff 1968; Sacks et al., 1974; Sacks, 1992) and is now an extensive international discipline focusing on the organization of body movements, gestures and speech. CA starts from the idea that people "recognize the shape and character of what is occurring" (Goodwin, 2000a, p. 1491) not from shared mental models but from the interplay between talk and embodied activity within sequences of prior and subsequent actions. From a CA perspective, action is investigated in terms of "contextual configurations" meaning that domains of phenomena that are often considered so distinct they are treated by separate academic disciplines such as language, the body and material structures, in CA are analyzed together "as integrated components of a common process for the social production of meaning and action" (Goodwin 2000a, p. 1490).

Conversation analysis was influential in generating key "observational studies" of gestures not least because gestures form a domain in which speech, materiality and the body interact so clearly (see Goodwin, 1980; Goodwin, 2000a; Heath, 1986; Streeck & Hartge, 1992; Streeck, 1993). CA approaches to gestures (e.g., Goodwin, 1979, 1986, 2000a, 2003; Goodwin & Goodwin, 1986; Hayashi, 2003; Heath, 1986; Sidnell, 2005; Schegloff, 1984; Streeck, 1993, 1994) have demonstrated how gestures play an important role in interactional organization or how "speakers parcel out between speech and gesture what they project in their utterance in ways that vary appropriately in relation to the communicative circumstances in which they find themselves" (Kendon, 1994, p. 188). In an analysis of medical interviews, for example, Heath (2002, p. 601) shows how gestures, "demarcate the position, the scale…and the character of the suffering. They enliven, if only momentarily, different parts of the body and provide a dramatic display of the symptoms and suffering incurred by the patient." Gestures have been shown to serve as cues relevant for the organization of interactions, i.e., turn-taking (Goodwin & Goodwin, 1986; Schegloff, 1984; Streeck & Hartge, 1992), spontaneous forms of collaboration (Hindmarsh & Heath, 2000), eliciting

responses (Streeck, 1994) and so on. Such work has shown gestures to serve as much more than a "visual mirror of lexical content," displaying aspects of meaning not present in the accompanying stream of speech (Goodwin, 2000a, p. 1498).

In summary, gestures studies is a mature internationally recognized multidisciplinary field researching a range of diverse issues such as first and second language acquisition (Ozcaliskan & Goldin-Meadow, 2005; Tellier, 2008), narratives and gestures (Jacobs & Garnham, 2007) sign languages (Corina & Gutierrez, 2016; Green, 2017) conditions such as aphasia (Goodwin, 2000b) and language impairment (Sanjeevan et al., 2016), gesture recognition (by humans and computers) (Cassell, 1998), and robotics (Ng-Thow-Hing, Luo & Okita, 2010). It is also theoretically pluralistic with diverse frameworks ranging from semiotics (Bouissac, 2008), ethnomethodology (Goodwin, 2000a), deconstruction (Montredon, Amrani, Benoit-Barnet, Chan You, Llorca, & Peuteuil, 2008), and microanalysis (Streeck, 2008a) to cultural studies (Quinn, 2008) and cognitive linguistics (McNeill, 1992). In building our protocol we have thus made choices regarding which theoretical and methodological resource to engage. To develop a comprehensive but practically useful protocol for naturalistic settings, we have used mainstream approaches that grant us access to *representational*, *pragmatic* and *deictic* gestures (Kendon, 2017) (see Table 1 below for an overview of these gesture types, their communicative roles, theoretical and methodological resources and guiding assumptions). The relations between these approaches and the extent of their compatibility are addressed later in the paper.

INSERT TABLE 1 ABOUT HERE

Understanding Entrepreneurial Pitches

We develop and demonstrate our protocol for the analysis of gestures in naturalistic settings by examining gestures within the context of "investor pitches" where entrepreneurs are given a limited amount of time to "sell" their business propositions to an audience of potential investors (Clarke et al., 2019). The resulting protocol is not specific to entrepreneurial contexts and is relevant for the analysis of gestures in a wide range of organizational settings where interpersonal or group communication, understanding or persuasion is important.

The acquisition of investment is a critical step for many entrepreneurs in the early stages of their ventures; as such, attracting appropriate investors to support their entrepreneurial ventures is essential if their businesses are to grow and succeed. Entrepreneurs, however, typically face challenges in convincing investors of their ventures at this stage due to the "liability of newness" associated with their ideas with often little in the way of a track record, obvious asset value or profitability to show (Brush, Greene & Hart, 2001; Cassar, 2004). In this context, how entrepreneurs communicate about their ventures is crucial for convincing stakeholders to support the ventures and securing investment that can allow these entrepreneurs to further develop their ventures (Bird & Schjoedt, 2009). Most prior research on entrepreneurial communication has focused on linguistic forms of communication including how entrepreneurs use specific forms of speech such as rhetorical argumentation and narratives to impress a particular understanding on stakeholders (Aldrich & Fiol, 1994; Navis & Glynn, 2010; Van Werven, Bouwmeester & Cornelissen, 2015).

Here we focus on a specific form of entrepreneurial communication, the "investment pitch," which has emerged as the industry standard in recent years whereby entrepreneurs present and describe their venture ideas to prospective investors over a period of five to ten minutes (Brooks, Huang, Kearney & Murray, 2014; Clark, 2008). As Pollack, Rutherford and Nagy (2012, p. 912) state "the communication-focused behavior of pitching to potential equity stakeholders, such as angel investors and venture capitalists, is one of the most

important behaviors that an entrepreneur will enact in the exploitation process." High levels of uncertainty characterize such pitches, as investors have to judge the feasibility of a venture and its future capacity to generate revenue based on the limited information provided in the pitch. Although a good pitch is unlikely to overcome a baseless or flawed opportunity, having an excellent idea is not sufficient to ensure funding and "without a good pitch, resources will not likely be forthcoming" (Pollack et al., 2012, p. 917). In sum, investment pitches offer an opportunity for entrepreneurs to personally communicate their ideas and a successful "performance" is essential in gaining support and resources from investors (Cardon, Wincert, Singh & Drnovek, 2009; Chen, Yao, & Kotha, 2009).

Like research on entrepreneurial communication more generally, previous research on entrepreneurial pitches has tended to primarily focus on the linguistic and rhetorical strategies that entrepreneurs use to persuade investors to fund their ideas (Clark, 2008; Pollack et al., 2012). Mason and Harrison (2003), for example, analyzed the reactions of 30 business angels to a video recording of an entrepreneur's real-life pitch presentation and found that the clarity, content and structure of the presentation featured heavily in business angels' decisions on whether to invest. Pollack et al. (2012) highlight the pitch as a narrative process through which entrepreneurs craft and tell a story that engages investors by justifying the existence of the venture and by convincing them to offer their financial support. While there have been suggestions that embodied dimensions of pitching may be important, related research has been limited (Huang & Pearce, 2015). Alongside narrative structures, Chen et al. (2009) examined the importance of entrepreneurs expressing passion while making pitch presentations, defining passion as the use of energetic body movements, rich body language and animated facial expressions. More recently, Clarke et al. (2019) have shown that while employing verbal strategies in pitching to investors, entrepreneurs also use hand gestures to emphasize important points and to help convey product and venture ideas.

We aim to build on this research by attending to the embodied aspects of entrepreneurial communication observed during pitch presentations. In particular, we argue that entrepreneurial pitches provide one interesting and high-stake context from which to examine how gestures are used in organizational communication, and we thereby aim to contribute to previous literature in these areas, which has overlooked the entrepreneurial body as a key semiotic domain in pitch presentations.

Protocol for Gesture Analysis in Naturalistic Settings

Below, a six-step protocol for gesture analysis is described drawing upon an original dataset of video recordings of investor pitches. As we outline above, we see "investment pitches" as a particularly appropriate setting to develop and apply our protocol given that research is increasingly showing that effective communication through both speech and gesture is integral to an entrepreneur's success (Clarke et al, 2019). However, the protocol we outline below can be applied far beyond this domain in a wide range of organizational communication contexts. This could include formal and informal organizational presentations and interactions (briefings, keynotes, meetings or discussions) either with small or large groups of individuals. Figure 1 provides a visual overview of this protocol for gesture analysis in naturalistic settings.

INSERT FIGURE 1 ABOUT HERE

Step 1: Data collection

Gestures are fleeting and appear in subtle and sudden ways in naturalistic settings. Attempting to analyze gestures from memory or through note taking would therefore be very difficult and so video-recording gestures for later analysis is the standard approach. This

audio-visual capturing of gesture aligns with recent developments in organizational research where video is fast becoming a key resource for those studying communication and multimodality (Goodwin 2000a; Gylfe et al., 2016; Heath, Hindmarsh & Luff 2010; Hindmarsh & Llewellyn 2018). Video analysis allows us to examine "starkly visible 'extralinguistic' features," creating new possibilities for researchers by facilitating microlevel analysis through the repeated scrutiny and frame-by-frame examination of the same motion/speech events (Kress, 2011, p. 253; Luff & Heath, 2012).

For the present paper, data were collected by one of the authors who attended Business Angel pitching events throughout the UK, collecting 54 video-recorded "investor pitches." All speakers signed an ethics approval form, and all investors were given a chance to "opt out," meaning that any questions they asked would be removed from the digital record. When introducing the project, our interest in gestures was not revealed to limit the likelihood of speakers reflexively or playfully gesturing during their presentations.

Videoing interaction is, to differing degrees, intrusive. A common question concerns whether participants alter their behaviors when videotaped. Entrepreneurial pitches are, however, routinely videotaped, and the presence of the video camera was not considered at all unusual. Rather than asking whether videotaping changes participants' behaviors, an alternative approach involves considering how people orient themselves to the camera by thinking in terms of "analytics" rather than "ethics" (Speer & Hutchby, 2003). In our data, for example, one entrepreneur oriented to our camera through a dietic (pointing) gesture when explaining the difference between what it costs to make the presented product and its selling price. Gesturally, he implies that the video will "give the game away." A camera is thus used to enable the entrepreneurs to develop a sense that he is letting the investors in on "trade secrets."

The video camera was mounted on a tripod and placed at the back of the presentation room. Decisions on where to point the camera have drawbacks and should be theoretically informed. In cognitive linguistics, authors such as McNeill define "gesture space only with reference to the body of the party producing the gesture" (Goodwin, 2000a, p. 88). Microanalytic approaches (Schegloff, 1988) record both the body of the party making the gesture *and* interlocutors to recover how gestures are "oriented to" by others. For our data this was a challenge, as there were a large number of potential next speakers. At least two additional cameras would have been needed to capture key angles, which was deemed too obtrusive. A further approach would have involved allowing the camera to "rove," but this also presents drawbacks, it is difficult to anticipate where the next matter of interest will occur resulting in the researcher being one step behind the action (Heath et al., 2010, p. 41). Like all data then, ours present limitations; they were produced with a single fixed position camera focused on each speaker and providing side views of audience members. Future researchers employing this protocol will also have to make similar trade-offs between being excessively intrusive and capturing all activity, even in smaller group interactions the position and distance of the camera must be carefully considered to ensure, for example, interlocutors are not unduly bothered by its proximity and location.

Step 2: Identify recurrent gestures

For expositional purposes here we only consider how to recover the different embodied phases of gestures. At this point in the analysis the focus is not on what the gestures "mean" but rather the aim is to highlight the most common gestural forms in the dataset. In order to understand the meaning or use of the gesture, the visual form must be combined with the speech, which we will consider in the next section (step 3).

We performed an initial descriptive coding that first involved viewing and reviewing the video to identify recurrent gestures throughout the data. As typical in gesture studies, we focus predominantly on the 'stroke' phase of a gesture which is the gesture phase involving the most distinct exertion of effort as opposed to the preparation phase leading up to the gesture or the retraction of the hand after the gesture (Kendon, 2004). Our corpus of pitches revealed a common repertoire of gesture shapes that ran alongside speech: (a) "cutting" (Kendon, 1994) or "slicing" (Streeck, 2008b), (b) "drawing shapes in the air" that represent semantic content (Kendon, 1997), (c) "M form" gestures from the center outward and from the outside inward, (d) the "ring" or "precision grip" (Napier, 1980), (e) parsing gestures (Streeck, 2008b) and (f) pointing. We found that this framework of key gesture forms, accounted for much of the gesturing across the sample. These basic gestures are also likely to be present in many other forms of organizational communication given they have been extensively identified and detailed in a wide range of settings across the wider gesture literature (Streeck, 2008b).

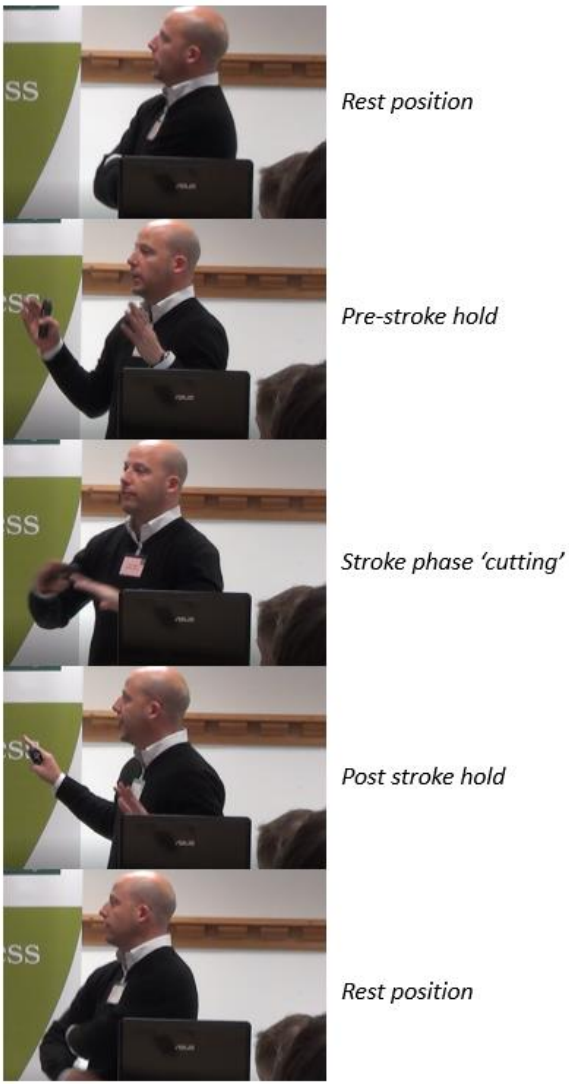
Within the present sample, several of these gestures took a readily ideal-typical form that has been described in prior literature. Such gestures include "the cut" and "precision grip" (Kendon, 1994; Streeck, 2008b). These were identified relatively simply as was their recurrence. A further class of pragmatic gestures directing the conduct of others was identified. These were also quite easy to identify because under the study settings, subjects typically use these gestures to perform one of two actions: selecting the next speaker or directing the visual attention of the audience members.

Other cases posed more challenges. In ongoing conduct, speakers cannot be relied upon to reproduce well-known gestures starting and ending at rest. Rather, arms and hands often move constantly and sometimes idiosyncratically with one gesture quickly morphing and blending into another. Many sections of data therefore require granular and repetitive

empirical work. When viewed closely, for example, we found many seemingly random movements to be parsing out a pragmatic structure, i.e., the hands would rise and fall while beating out syllables. Below we introduce the "shape" of only the most recurrent gestures identified from our dataset.

(a) Cutting gestures. In these pitching environments, one gesture that reoccurred is the "side-stroke" or "cut" (Kendon, 1994), and an illustration is provided in extract 1. In this case, the hands and arms are initially at rest, and then they take an "excursion" (Schegloff, 1984). At the prestroke hold, both hands are raised with fingers out stretched and with palms facing one another. The stroke phase involves them being brought together, after which they are pulled apart to the left and right with a "swooshing" motion. Of course, there are subtle variations in practice. In some cases, the palms of the hand are held together, as if in prayer, before being moved apart in a cutting motion.

Extract 1 [YABA (1) 4:30]



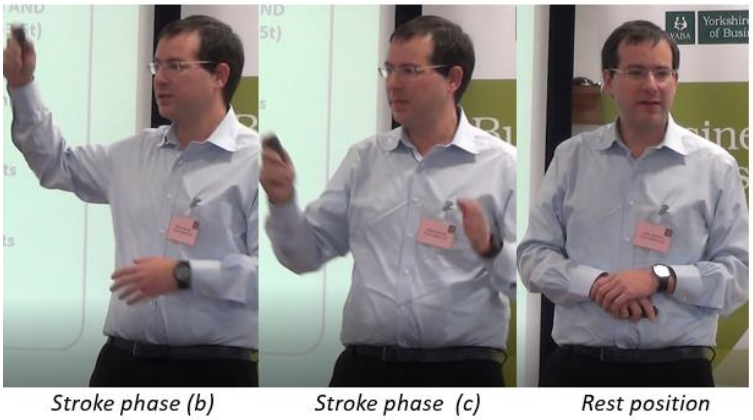
(b) Drawing shapes in the air. Entrepreneurs also routinely drew shapes in the air (Kendon, 1997). On some occasions, space would be fashioned as a quantitative tableau; gestures made close to the ground would depict something "small" while the space above the speaker's head

would be used to depict something "large." Otherwise, a geographical tableau would be invoked. The space above the speaker denoted "north," and the space close to the ground denoted "south." Shapes "drawn" tended to be representational.

In the case illustrated below (extract 2), in the "rest" phase the left hand is inert and the speaker is holding the "clicker" with his right hand. The gesture then begins. At the prestroke hold both hands are raised apart with palms held open and facing one another. The gesture then involves three phases. While maintaining the formation, both hands move to the bottom left and are held there before the right hand moves to the top right with a rare lassoing motion before both move to the center (phase c). Analytically, the third phase (phase c) *is* part of the gesticulation and should not be confused with rest or retraction. With a rapid up and down motion, his hands mark the space in the center; they are *doing something* at this point. His hands then return to a rest position and are held across his middle.

Extract 2 [YABA (4) 2:52]

Rest position *Pre-stroke hold* *Stroke phase (a)*

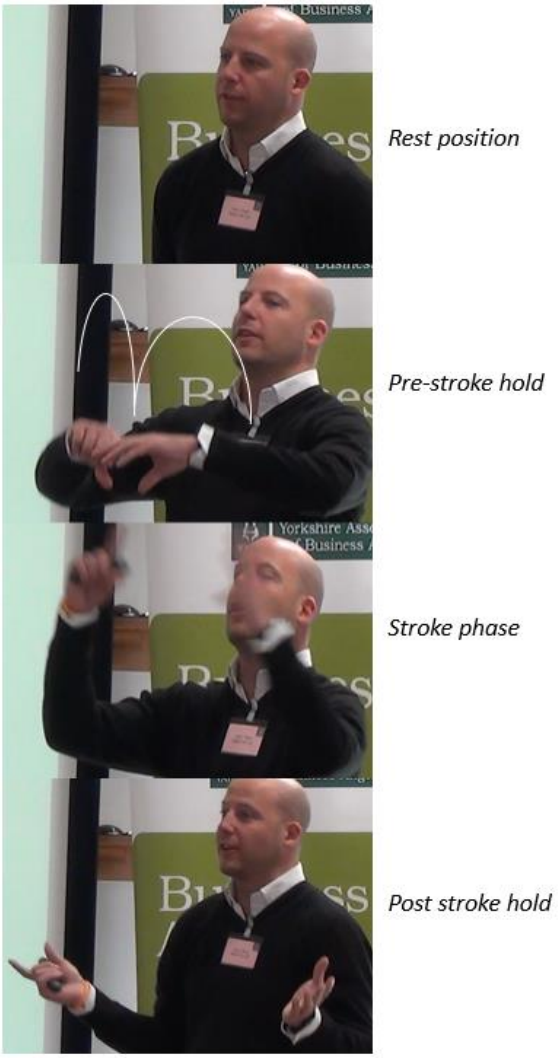


Stroke phase (b) *Stroke phase (c)* *Rest position*

(c) Outward and inward M-form gestures. Another common gesture was a distinctive M-shape drawn by the hands either from the center outwards (extract 3) or from the outside inwards (extract 4).

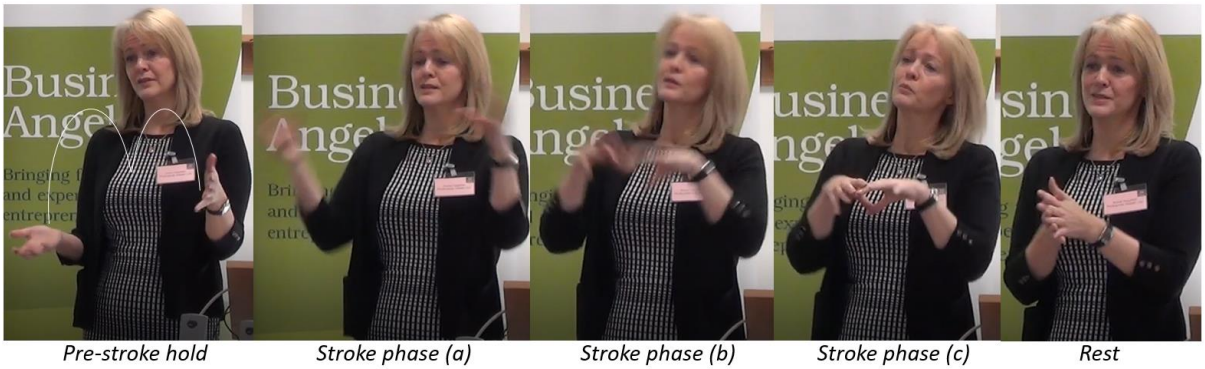
For the prestroke phase illustrated in extract 3, the hands are drawn together from rest into the middle. The index fingers of both hands are touching. In the stroke phase they are drawn apart outwards and then upwards along a curve. On occasion, the hands are moved all the way across and back to their starting position. In this case, they are held in the final position (the third image shown below in extract 3) before immediately starting to perform a new parsing gesture.

Extract 3 [YABA (1) 13:17]



In a second example (extract 4), the speaker starts with her hand positioned at the outside of the M-shape and then moves them inwards. At the preparation phase, the hands are apart. The stroke phase brings the hands upwards and inwards until they meet. In this case, the speaker is gesticulating constantly. She moves into the prestroke hold from a prior *iconic* gesture to depict the shape of a container and from rest immediately into a parsing gesture.

Extract 4 [YABA (2) 28:36]



Pre-stroke hold *Stroke phase (a)* *Stroke phase (b)* *Stroke phase (c)* *Rest*

(d) "The ring." The gestures mentioned thus far involve hands moving in expressive ways, but more subtle hand gestures are also significant. One such form reoccurs in our sample and is called "the ring" or "precision grip" (Napier, 1980). Here, the index or middle finger connects with the thumb, forming a circular shape to connote specificity or precision in everyday communication (Kendon, 2004).

Extract 5 [YABA (2) 18:17]

Rest *Stroke phase (a)* *Stoke phase (b)* *Post stroke hold* *Rest*

In the example illustrated above (extract 5) the entrepreneur's left hand is initially at rest before being raised with the thumb, index finger and middle finger though without them touching. The gesture rises and falls. On three occasions the grip moves up and down (for brevity, not all are shown in the images above). This hand shape may be doing two things at once, denoting precision (Kendon, 2004) and parsing out semantic structure (Streeck, 2007).

(e) Parsing or "beating" gestures. The most recurrent gestures observed in these materials are parsing gestures where one hand rises and falls in isolation or in combination with the other. An example is provided in extract 6 where the speaker repetitively brings his hands together. In this case, from the images alone it might be assumed that the speaker is counting, as the right hand pulls back and is brought down upon the little finger as if starting to count with a number sequence. As with all of the cases considered above, this can only be determined when the visual form is combined with speech, as one modality elaborates the other.

Extract 6 [TVIN (6) 6:40]

Rest *Stroke phases*

(f) Deictic gestures. Finally, while many of the gestures considered above are "metaphorics" (McNeill, 1992) that communicate images of abstract concepts, pointing is more obviously involved in practical activity and in the business of directing the visual and embodied conduct of others (see Goodwin, 2000a). Very often, as is already apparent, entrepreneurs pointed at their PowerPoint slides and in this way found themselves in a close, expressive and embodied relation with the material technology in the setting. Pointing directed the visual attention of audience members to the slides or to specific details presented on particular slides. Entrepreneurs would point to direct the visual attention of the audience to objects within the room, and pointing was also a key resource used to manage speaker allocation and transitions.

Step 3: Link gestures and speech

We next incorporate speech into the analysis by examining how bodies move in relation to speech. Do gestures merely reflect speech or do they also embellish it? Matters of timing are also considered; do gestures travel ahead, behind or alongside speech? To the extent that speech and the body mutually elaborate one another, recipients may grasp the speaker's message not from hand movements alone but from the "configuration of activity" (Goodwin, 2000a) as a whole. It is in this step that we begin to see what the gestures are adding to the communicative account and the features that would ordinarily be neglected if gestures were not taken into account.

(a) Gestures that reflect speech. In a range of cases the gestures considered above reflected the lexical content of speech, acting to further emphasize or support the point or argument being made. Returning to extract 1 (as discussed above), the speaker is framing the proposed

business idea as a solution to a problem. This is a commonly recurrent feature of the observed pitches. Entrepreneurs describe business problems that they are eliminating; problems that they had initially experienced but can now be eradicated by using their novel product or service. It is in these communicative environments that we find "side-strokes" or "cutting" (Kendon, 1994) gestures. In extract 1 the speaker makes a cutting gesture (lines 4) as he describes how his product removes a major logistical challenge associated with existing technologies ("you don't have to worry about that," lines 12-3).

Extract 1 (contin.) [YABA (1) 4:30]

1	Ent:	typically you've got (.) >you know< a thirty
2		ton tanker of polymer modified
		Pre-SH
3		bitumen requires (.3) six hundred tons of
		SPC
4		finished mix (.) which is about twenty
		Post-SH
5		trucks of finished mix (.) you don't have to
6		worry about that.

Pre-stroke hold (Pre-SH)

Stroke phase 'cutting' (SPC)

Post stroke hold (Post-SH)

When we moved through our categories in this fashion incorporating speech, what emerged was a basic descriptive pattern of the way gestures aided the entrepreneurs in the communicative challenges they faced. To summarize, (1) the "cutting" (Kendon, 1994) or "slicing" (Streeck, 2008b) gesture routinely appeared as part of *negation-talk* where the entrepreneurs speak about overcoming problems. (2) Entrepreneurs "drew shapes in the air" particularly when spatially *demarcating the markets* for their products while (3) "M-form" gestures denoted *expansion* or the establishment of *new combinations*. (4) The "ring" or "precision grip" (Napier 1980) occurred where *points of detail* were presented or when unique selling points were described while (5) parsing and (6) pointing gestures sectioned up

speech. This framework is not exhaustive, and of course there are variations, but it serves as a useful starting point. We call this combined and refined typification of six gestural forms used alongside speech an "entrepreneurial gesture code" because the gestures are omnipresent across the pitches and are closely associated with the business of communicating entrepreneurial ventures, including matters such as "expansion" (into new markets), new resource "combinations," "negation" (eliminating problems), "demarcation" (into different market segments), and "specificity" (unique selling points). When addressing problems related to entrepreneurial work, the body is enlisted in recurrent and recognizable ways. Future researchers drawing on this protocol can similarly develop a specific "code" for their organizational communication setting of interest based on the common gestural forms used alongside speech to achieve certain communicative goals in their particular research context.

(b) Gestures that embellish speech. Gestures often do more than simply reflect lexical content. They often either recast lexical content or add aspects *not* apparent from speech and which would otherwise be overlooked if gesturing was not examined. An example is presented in extract 7 (see also extracts 10 and 11), which highlights the remarkably fine interplay between speech and the body. Here, in response to a question, the entrepreneur is explaining how his firm generates its margins. This hinges on the cost of inputs into the production process. The entrepreneur discusses alternative ways of repairing road surfaces, claiming that his product, made from recycled car tires and bitumen, is cheaper to make and use than the alternatives. From his speech alone the entrepreneur is simply listing the cost (per ton) of the main three alternatives. However, when a gesture is drawn into the account, we see subtle ways in which the entrepreneur puts a slightly different spin on things, invoking images of value not present in the accompanying speech (Goodwin, 2000a). In this case, he

combines two aspects of the "entrepreneurial gesture code," namely, "precision grip" and sketching diagrams or shapes in the air (Kendon, 1997).

As the entrepreneur lists costs (line 1), he also starts his gestural work, raising his right arm. He draws a series of three lines in the air in the same direction away from his body. In each case, the line is mapped using the thumb and forefinger, which form a "precision grip." The lines are drawn at three different heights, which correspond to a scale of value running from low (towards the floor) to high (upwards).

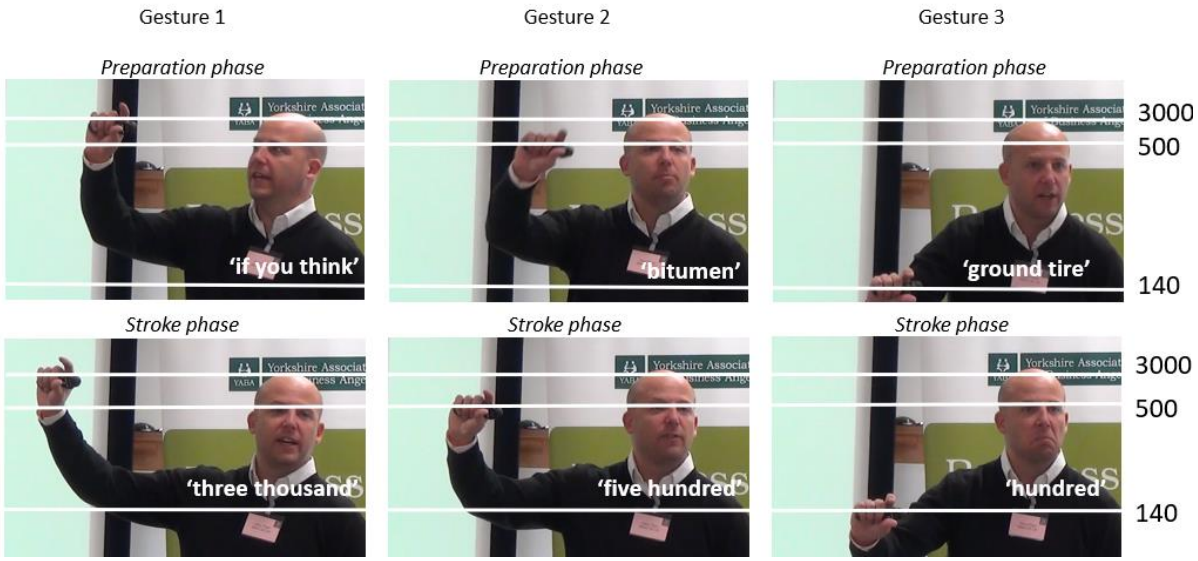
Extract 7 **[YABA (1) 15:40]**

G1-Prep G1-Stroke G2-Prep G2-Stroke

1 Ent: …if you think >that< sbs's. (.2) three thousand, bitumen's five hundred,

G3-Prep G3-Stroke

2 un'ground tire rubber is (.) a hundred and ↑forty, …



When the speaker embarks upon each list item, he moves his hand into position and holds it there in "preparation" (Streeck, 2002). His hand only moves through the line as part of the "stroke phase" (Streeck, 2002) as he comes to the *cost*. The gesture marks not the pragmatic structure of his speech, i.e., the beginning of each item on the list, but the item of real importance *within* each lexical unit – namely, the cost. Moreover, the gestural work does not literally depict quantities. The gap between 3000 and 500 is considerably smaller at both

the preparation and stroke phase than the gap between 500 and 140. The entrepreneur's cost advantage hinges on this second gap between bitumen and ground rubber. The numbers are organized in gestural space to persuasively inflate a sense of the firm's cost advantages. The gestures are not simple visual mirrors of lexical content "but a semiotic modality in their own right" offering additional and complementary information (Goodwin, 2000a, p. 1498).

(c) Timing. Finally, and staying with the same speaker, we consider the matter of timing; whether speech and gesture coincide or indeed become temporally separated. Consider an example in this regard (extract 8). Here the entrepreneur is discussing the product that he is pitching, pellets, a sample of which are on display at the back of the room. Alerting the audience to this, he gestures towards the table where they are positioned *before* telling the audience where they are. His gestural work overtakes his speech. The pointing gesture is fully extended as he says "or" (line 1), which comes *before* he tells the investor where the pellets are displayed (lines 4-5).

Extract 8 [YABA (1) 3:36]

		Points	Retracts	Investor shifts gaze
1	Ent:	or you can see some on the.		
2		(.2)		
3		th' table, at the back.		

The fact that his gestural work occurs ahead of his speech is useful because when an audience member shifts her gaze to the back of the room (see middle image above), we have strong evidence to claim that she is "orienting her conduct to" (Sacks et al., 1974) the

speaker's gestural work rather than to his speech because she turns to look *before* the speaker states where the pellets are. We see here that "gestures communicate" (Kendon, 1994) with the audience member being guided to find the referent (in this case the entrepreneur's product) from the gesture. The data capture her response and thus her sensemaking in how she has rendered the import of the speaker's embodied conduct.

Step 4: Link gesture and speech to the material context

We now incorporate materiality into our analysis (Hindmarsh & Llewellyn, 2018). The entrepreneurs we recorded were often holding a material object in one hand (see extracts 1, 2, 3, 5, 6, 7, and 8), and as we have seen, their gestures often involved two hands. As such, speakers needed to spontaneously develop local improvisations that allowed them to incorporate the material object into the gesture. For example, to perform a cutting gesture, which involves two flat palms, the speaker in extract 1 found a way to press the clicker into his open palm with his thumb. In extract 2 the speaker sketched shapes in the air to demarcate his market. He points to the floor with both hands to denote the market for small trucks but he is holding the clicker in his right hand and thus must adapt. His little and third finger moves off the clicker to point while his grip is maintained by his index and ring fingers.

In extract 3, the speaker makes an expansive gesture, drawing an "m-shape" in the air. He improvises by sketching the curve with the thumb and index finger of his encumbered right hand.

The clicker does not act in isolation but in tandem with slides projected onto a screen behind the speaker. Entrepreneurs elaborated on their slides verbally and by gesturing towards the screen. We found that entrepreneurs often engaged the gesture code narrowly and infrequently when presenting to slides. The body became progressively less active. Unless entrepreneurs established localized improvisations, gestures became limited to "parsing," "pointing," and "listing" semantic content with the clicker used as a conductor or baton.

When speakers placed the clicker down before taking questions, a transformation was often evident. The inert right hand suddenly became active. In extract 9 (further below), for the duration of the presentation the speaker's left hand *only* performed parsing and pointing gestures. The "gesture code" is engaged in a limited manner. After 18 m 41 s the clicker is placed down and the mode of bodily engagement has changed. Immediately, both hands expressively gestured together and towards the audience. When not active, the hands assume an entirely new "at rest" position, ready to be called into action. To understand patterns of engagement with a "gesture code" it is necessary when analyzing gesture in any naturalistic setting to explore how materiality enables and constrains gesturing rather than making premature assumptions about an interlocutors' gestural expressivity.

Step 5: Analyze the interactional and pragmatic functions of gestures

Kendon (2017) suggests that gesture studies tend to be positioned between one of two central poles, i.e., between an action-oriented concern with the pragmatic and interactional work performed by gestures, and cognitive approaches that view gestures as providing insight into

how people are "thinking." In this step we consider the pragmatic work performed by the gestures. Gestures supply people with resources for performing social actions (Kendon, 2017) and can contribute in a range of ways to multiparty interactions (Schegloff, 1988; Goodwin, 2000a). In the present data corpus, gestures were deployed to perform two recurrent sets of social actions: (1) speaker allocation, i.e., passing on a question to a co-presenter or selecting an audience questioner, and (2) guiding the attention of audience members to an object, person or detail within the room. Examples are considered below.

Methodologically, those analyzing the pragmatic function of gestures can claim strong evidential basis (Sacks et al., 1974) that gestures do what they claim. An illustration is already presented above in extract 8. In this case, because the dietic gesture occurred ahead of speech and because the video captured the embodied response of an audience member who turned and redirected her gaze *before* the speaker mentioned the whereabouts of the object, we were able to gain a strong "evidential warrant" (Sacks et al., 1974) for the claim that the gesture itself *did something*, i.e., it guided the audience member's conduct and directed her attention within the scene. The analyst can ground his or her interpretations by taking into consideration the displayed orientations of participants who, confronted with a gesture, determine and display what they take the gesture to mean. In addition to recovering social actions performed by gestures, they can be analyzed pragmatically to recover rules and norms operative within organizational settings. In this sense, gestures are both interactional and social. As an example, take extract 9 below where the entrepreneur gestures towards an audience member. From the visual channel alone the gesture itself might be confused with a blocking gesture. The hand is held in front of the speaker with the palm raised and facing the recipient as if to request that they stop talking. Quite to the contrary, the gesture is pragmatically "oriented to" by all parties as selecting an audience member to speak.

Extract 9 [YABA (2) 18:40]

1	Ent:	((gestures, open palm, then retracts))
2		(.2)
3	Ent:	thank you.
4		(.2)
5	Aud:	is- is there a particular a::ge group…

| 1.2 seconds |

To grasp how the gesture is oriented to in this fashion, we must consider not just speech and materiality but also an appreciation of norms within the setting in which the gesture engages. In this case, the entrepreneur has just placed the clicker down, signaling the end of the presentation phase of the pitch. He pauses and looks up, accountably scanning the audience for a question. He orients to a new participation framework (Goffman, 1981). As he does so, a hand is raised in the audience just wide of the shot. The entrepreneur orients to this *emblematic gesture* (i.e., a raised hand) by gesturing towards the investor (captured by the image above) with his palm raised and facing the recipient. Rather than preventing the individual from speaking, he is clearly identifying them as the next speaker with a *dietic gesture*. This hinges not on the handshape itself or on what the speaker is "thinking", but on where the gesture appears in this unfolding sequence. As his gesturing hand moves back to a resting position, the entrepreneur says, "thank you," verbally marking the successful accomplishment of the embodied work performed by their mutually elaborating gestures.

The subtle normative nature of this stretch of embodied conduct is apparent enough. The investor does not simply shout out a question. Rather, the investor waits for an

appropriate time to make a contribution by making a gesture that signals a desire to speak. In and through this gestural work, the parties "orient to" and reproduce a simple social constraint that is relevant to the organization of conduct in this setting.

The two examples presented above show how gestures direct the conduct of interlocutors and how they can thus be understood as intersubjective accomplishments rather than, for instance, products of mind or some underlying reasoning. For LeBaron and Streeck (2000, p. 119), gestures "originate neither in the speaker's mind nor in the process of speaking…rather gestures originate in the tactile contact that mindful human bodies have with the physical world." In the cases considered, clear evidential grounding for analytic claims is noted, arising from the fact that the gesture relevance was "oriented to" by participants themselves.

To some extent, whether studies pursue interactional work performed by gestures or examine the insight that gestures provide into how people are "thinking" (Kendon, 2017) will reflect prior theoretical commitments. However, we argue that they should also be driven by pragmatic considerations on the nature of the setting considered – with such theoretical commitments emerging from observations and initial gestural depictions. When a surgeon gestures to request a scalpel, the central concern in this setting is pragmatic, i.e., whether the action implication of the gesture is recognized accurately and swiftly. What the surgeon is "thinking" is, comparatively, less interesting. In other settings, the reverse is true. In analyzing the business keynote speeches of Steve Jobs, Wenzel and Koch (2018) describe the central role of expressive gestures. However, during the examined keynote speeches, gestures did not play a strong pragmatic role, and audience members could only exhibit collective affiliation with the message by applauding or cheering. For keynote speeches the key question concerns how speakers communicate their thoughts. Likewise, with investor pitches, audience members are for the most part listening rather than directly responding to what is

said. As such, in our data, the pragmatic functions of gestures are largely secondary to what the gestures represent or convey to an audience. Investors wanted to hear business ideas and concepts and to be engaged with the entrepreneur's vision, and it is to this point that we now turn. Therefore, in future research using this protocol the interactivity of interlocutors in the specific organizational context will play a role in the level of importance attached to the pragmatic function of gestures in the analysis.

Step 6: Gestures and metaphors

Finally, we incorporate a specific concern with *metaphorical* gestures and with the images that entrepreneurs create through their speech and their body to communicate ideas. This sixth step is based on strong evidence from the multidisciplinary field of gesture studies (Cienki, 1998), which shows that a large proportion of gestures across communicative contexts are metaphorical in nature, depicting abstract ideas through concrete gestural embodiment and symbolization. In the specific context of entrepreneurship, metaphors can encode and articulate novel ideas that entrepreneurs have in terms of familiar domains of understanding that when well-chosen may deeply resonate with, reassure or stimulate recipients (Cornelissen & Clarke, 2010).

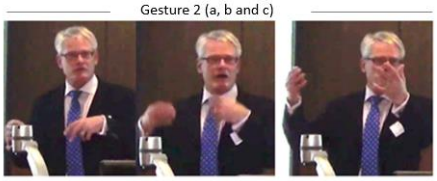
To illustrate the importance of metaphors in gesture using our dataset, we start with extract 10. Clearly, this extract is laden with metaphorical expressions and imagery. A source domain for each metaphorical word or expression was developed to characterize the underlying metaphor (Pragglejaz, 2007). Words used metaphorically are underlined and the associated source domain codes follow in brackets and capital letters. Many of these correspond with source domains identified elsewhere within cognitive linguistics (Grady, 1997, 2005; Lakoff, 1993; Lakoff & Johnson, 1980, 1999).

Extract 10 [ONIN (2) 4:54]

1 Ent: we spent the next eighteen months creating a built for purpose
2 product to actually sit down and nail down ((PHYSICAL MANIPULATION OF
3 OBJECT)) these difficult infrastructures that are becoming more
4 widespread, there's a growing set of security risks on that ((INCREASE AS
5 GROWING)), you know, the explosive growth of this market ((INCREASE AS
6 GROWING)) you've got a relentless increase in security holes ((SECURITY
7 PROBLEM AS HOLE)), you've got reliance, and this is one of the key issues
8 here, reliance of third parties…
9 …a lot of companies are outsourcing IT services to third parties ((IDIOM
10 TO GIVE WORK AWAY)) and even those third parties are outsourcing
11 to fourth parties…
12 …so you end up ((IDIOM OF PROGRESSING AS JOURNEY)), with many
13 potential security holes ((SECURITY PROBLEM AS HOLE)) and this is the
14 problem that ((company name)) is trying to nail down ((PHYSCIAL
15 MANIPLULATION OF OBJECT))

Gesture 1 (a and b)

Gesture 2 (a, b and c)



Gesture 3, 'filling holes'

In this example, considering the interplay between metaphorical speech and gesture reveals several interesting general patterns in our material, including gestures that: (1) embellish verbal metaphors, (2) add metaphorical elements to nonmetaphorical speech and (3) cue upcoming metaphors used in speech.

As the extract begins, the entrepreneur has both hands apart and facing each other, palms held flat. In the stroke phase, the right hand moves into a claw-like formation and rises up and down numerous times in succession. Rather than *parsing* semantic content, this is a *metaphoric* gesture; he is pushing something down, which then rises up. The gesture represents the company trying to "nail down" (line 2) a solution to security problems in the cyberspace market. His gestural work is engaging and embellishing the metaphoric content of his speech. The gesture is not literal; the speaker does not depict the act of hammering down a nail, but rather emphasizes a "downwards" motion representing the battle to suppress problems that would otherwise spread.

Gestures can also contribute entirely new metaphorical elements (see also Cornelissen, Clarke & Cienki, 2012). Consider the second gesture (gesture 2) in extract 10 (lines 9-11). In the preparation phase the entrepreneur moves his hands together and turns

them so that the backs of his hands are now facing the audience. In the stroke phase he moves his hands outward in an M shape, and then he turns them so that his palms face the audience as if he has thrown or flicked something outwards. This gesture elaborates upon the term "outsourcing" invoked through his speech. His speech addresses how companies often outsource IT services to "third parties" who might also pass them onto "fourth parties." Although "outsourcing" is a highly conventionalized expression, we see that the speaker physically activates this expression *through gesture* by moving his hands to enact the movement of throwing or giving something away. For cognitive linguistics, this gesture stands as evidence of the speakers' situated cognition; he is thinking in an embodied fashion illustrating metaphorically that companies are "handing" work to others.

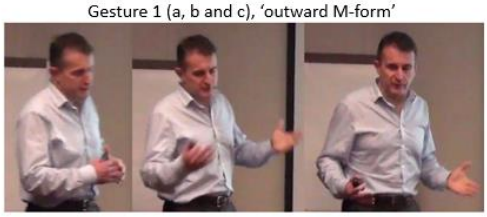
Metaphoric gestures can also occur ahead of speech, cueing audiences about forthcoming content. This idea is illustrated when the entrepreneur states that "outsourcing" results in a number of "security holes." In this case, he produces a *metaphoric* gesture *before* articulating the verbal metaphor. While shaping his right hand like a claw facing towards the audience, he moves in a manner that suggests placing an object into a space or "filling holes."

A second extract (extract 11) is also dense with embedded metaphors. As the extract begins, the entrepreneur verbally likens digital information about his clients to a sound that may be "amplified." There is an accompanying gesture that embellishes this metaphor. In the preparation phase the entrepreneur's hands are touching with both palms facing one another at the center of his body. In the stroke phase he produces an expansive M-form gesture where both palms move upwards and outwards and then down in an arching motion. The gesture works together with the verbal content, clarifying the metaphor. The gesture represents not only a simple increase (in volume), but also an expansion and growth outwards from a central point.

Extract 11 [TVIN (6) 3:28]

1 Ent: so, what are the real benefits of the platform, well,
2 it's obviously that amplification ((DIGITAL MESSAGES
3 AS ENLARGEMENT)), getting that brand message out
4 there ((CONDUIT)) to a much wider ((SIZE)) audience
5 than you can...
6
7 ...just through ((CONDUIT)) your own corporate social
8 media account, your corporate social media accounts
9 are doing a good job, getting to ((MOVEMENT ARRIVAL))
10 a certain amount of followers...
11
12 ...but they're not really driving it down ((ACTIVITY AS
13 FOCUSED MOVEMENT)) to where it really matters
14 ((IMPORTANCE AS POSITION)) between that partner...

Gesture 1 (a, b and c), 'outward M-form'



Gesture 2, 'precision grip'

Gesture 3 (a, b and c) 'shapes in the air'

The outward M-form gesture denoting amplification is quickly followed by a second gesture, an adaption of the "precision grip" where the index fingers and thumbs of both hands are arranged as if holding very small objects in order to depict the small number of "followers" that clients can generate through their own "social media accounts." A creative invocation of scale-based gestures is apparent. In extracts 2 and 7, the entrepreneurs invoked a scale of low/small (towards the floor) to high/large (towards the ceiling). In this extract (extract 11), the entrepreneur uses the M-form (denoting large) and an adaptation of the precision grip (denoting small).

In the final gesture in extract 11 (lines 12-14) the entrepreneur moves his hands in three successive movements as if he is pushing (or "driving") an object downwards into an imagined space. He is describing how his social media company can enhance his clients' online presence by digitally "driving" or "forcing" information into social media sites. He draws on these familiar embodied movement metaphors to convey meaning to investors in a way that naturalizes how the product works and the overall feasibility of the venture.

From these data we see that metaphors can encode and articulate business ideas in terms that are already largely familiar to listeners or recipients (Cornelissen & Clarke, 2010). The metaphors used in speech combine powerfully with gestures and work to compress the complex development of novel ventures into familiar categories or scenes, and may be crucial to how entrepreneurs transfer their ideas to the public domain and allow others (employees, investors, customers, etc.) to better understand the venture, thereby achieving "shared cognition" (Zietsma, Saparito, Matherne & Davis, 2005; Cornelissen, 2005; Hill & Levenhagen, 1995).

Metaphoric gestures can help entrepreneurs but also other organizational actors such as CEOs, strategists, team leaders etc. (Gylfe et al, 2016) to communicate effectively with others through enabling listeners to understand new ideas or unfamiliar situations through familiar domains of embodied knowledge (e.g., Alibali, Heath & Myers, 2001; Gibbs, 2006; Grady, 1997; Lakoff & Johnson, 1999). Specifically, by simulating bodily experiences, metaphoric gestures play a role in helping us process metaphoric and abstract expressions (e.g., Boulenger, Shtyrov & Pulvermüller, 2009; Gibbs 2006) and can convey meanings more directly or more clearly than the accompanying speech (Cienki 1998; McNeill, 1992). As Gibbs (2008, p. 296) notes, metaphoric gestures combined with speech do not just communicate redundant information, but they "express something different." Listeners can use information from gestures to inform their constructions of meaning and to help activate embodied intentions and plans for action (Gallese & Lakoff, 2005; Iverson & Thelen, 1999).

Discussion

In the paper we have argued that gestures are a significant aspect of human communication (Kendon, 2004) that have been largely overlooked in prior organizational research aside perhaps from recent video-based studies that consider embodiment and multimodality more

generally (see Hindmarsh & Pilnick 2007; Llewellyn, 2014; LeBaron et al., 2016). The present paper demarcates gestures as a specific subset of embodied conduct (Kendon, 1994) and as a distinctive modality with its own forms and discourse functions.

We developed a protocol for gesture analysis in naturalistic settings and have illustrated this protocol through the analysis of an original corpus of video-recorded investment pitches. We considered recurrent gestures used to elaborate on and embellish key entrepreneurial messages through the "entrepreneurial gesture code", including how aspects of this code are enlisted to perform social actions in line with a microanalytic approach (Heath, 1986; Goodwin, 2000a; Streeck, 2008a), and to enliven, introduce and cue abstract ideas and metaphors drawing on resources from cognitive linguistics. We found investor pitches to provide a rich context where the gestural expressions of entrepreneurs are likely to play a role in the impressions that investors form. When entrepreneurs delineate their markets, explain the basis of their margins and describe their products, these explanations cannot be reduced to speech or text. We found gestures are rarely passive reflections of verbal content and that verbal content rarely expresses the totality of meaning conveyed by a speaker. Examining gesture in these communicative episodes offers us a more holistic understanding of the verbal and embodied messages and their interplay, which would be missed if the focus were solely on rhetorical or narrative strategies. Not attending to the gesture in organizational interactions will allow much of the embodied nature of communication to go unnoticed.

While there are many gesture forms, we have demonstrated that in particular settings speakers may draw upon a relatively narrow repertoire. This recurrent use of a small number of gestures forms is apparent in other gesture research also, for example, in analyzing the speeches of democratic presidential candidates, Streeck (2008b) identified a "gesture code" consisting of four main forms: the *slice*, *pointing*, the *power grip* and the *ring*. Gestures are

perhaps less idiosyncratic than might be imagined. Moreover, it is therefore possible to gain a degree of analytic traction from large datasets relatively quickly, as the analyst can identify recurrent gestures and how they engage with other modalities to perform actions and convey particular images and metaphors. The protocol we have developed here should enable such work in other organizational contexts, describing key analytic challenges and illustrating how they can be addressed: (1) how to video record gestures in an inductively rich but theoretically informed fashion; (2) how gesture phases (*rest*; *prestroke hold; stoke phase; poststroke hold or retraction; rest*) should be identified and how to deal with complicating issues; (3) how the relation between gestures and speech can be accessed, identifying gestures that *reflect*, *embellish*, or *add* content and recovering the *temporal relation* between gestures and speech; (4) how to empirically recover the ways in which materiality enables and constrains gestures; (5) how gestures perform social actions, e.g., how dietic gestures direct the conduct of interlocutors and how gestures embody norms within social settings; and (6) how the role of gestures function in the construction and extension of metaphoric content and in the engaging expression of ideas. Our protocol supplies resources for analyzing the three main categories of gestures described by Kendon (2015), namely, *pragmatic*, *deictic* and *representational.*

While presented in a fairly pragmatic fashion, the protocol we have developed crosses various theoretical lines that divide approaches in terms of their operation and underlying assumptions. As Kendon (2016) notes, methodological resources for gesture studies have different histories and theoretical underpinnings which result in differences in *foci* and procedures. The microanalytic approach (Streeck, 2008a), which draws resources from conversation analysis (Goodwin, 1986; 2000a; Heath, 1986; 2012), analyzes the organization of social actions rather than the articulation of ideas. Streeck (2008b, p.182) is clear that the question of how "impressions are formed and how they affect people's…decisions are

questions that cannot be answered by microanalysis." Microanalysis reveals the detailed order and organization of gestures' relations to speech, social norms, participation frameworks and material contexts. For some researchers, and in some settings, this will not be enough. For example, in the context of investment pitches if we assume that investors make decisions at least partially based upon pitches, then we need an analytic account of "what exactly it is that [investors] react to when they form impressions of [entrepreneurs] and judgements of the type of persons that they are" (Streeck, 2008b, p.182).

While the microanalytic approach refuses to go "beyond the data," and grounds analysis only in the displayed orientation of participants, cognitive linguistics is guided by *a priori* theoretical insights, which suggest a particular relationship between speech, embodiment and the "thinking" subject. Comparatively, it claims more empirical freedom to infer from speech and embodiment what people are "thinking." From this theoretical perspective, metaphors have special importance, depicting scenes essential to human experience; this provides their use with "human scale" and a "direct and experiential basis" (Gibbs, 2006, p. 117), and from this basis they can be easily understood (Grady, 1997, 2005; Lakoff & Johnson, 1999). Metaphors can reduce abstract or new ideas, into existing embodied understandings that are concrete and more easily understood. The creation of such human-scale metaphorical scenes (i.e. ideas scaled to a level that can easily be understood in everyday imagery) and the employment of gestures in their articulation can support the individual's communicative goals in both the context of entrepreneurial pitches and other organizational communicative activities.

Although these approaches are built on different theoretical models and images of communication and interaction, there are intriguing overlaps between them. Most obviously, as with gesture studies as a whole, both share an interest in detailed microanalytic procedures of the type that allow for a finer-grained analysis of entrepreneurial communication than is

available from prior work on investor pitches (e.g., Chen et al., 2009). Both use video recordings and analyze gestures in granular detail as they unfold through recognized phases. Both prefer to analyze speech and embodied activity in naturalistic settings and produce "situated" accounts. Both are non-individualistic approaches – they view cognition and action as concertedly produced. In cognitive linguistics, shared ideas are at the heart of "understanding," which is likened to jointly establishing or building a physical base and often involves adducing metaphors to ground an understanding of abstract concepts such as new ideas or new ventures (Cornelissen & Clarke, 2010). In conversation analysis, understanding is the product not of shared mental images, but of common interactional procedures for displaying, checking and repairing sense. Despite their different intellectual histories, both approaches have found their subject matter to be best understood through the detailed analysis of language use and through embodied activity in naturalistic settings.

There is therefore some scope for developing synergies and dialogue between these two nonexperimental approaches to analyzing gestures and situated activity. In any setting, the establishment of "common ground" (Clark, 1996) between interlocutors relies upon a suite of interactional practices described by conversation analysis, through which actors display and monitor "sense" turn by turn and "repair" troubles as they arise through actions performed through speech and other embodied behavior (Schegloff, 1995). However, establishing "common ground" between organizational actors can sometimes depend on more than this. For example, in the context described here, the uncertainty and ambiguity of the venture, means the entrepreneur must also construct meaning for investors, compressing the complex and uncertain process of commercializing a venture into concrete and familiar scenes (Hill & Levenhagen, 1995; Lounsbury & Glynn, 2001). Here gestural metaphors may be mobilized alongside pragmatic gestures to achieve communication goals and to arrive at mutual understanding. Thus, to understand how investors and entrepreneurs find themselves

"on the same page," it is also necessary to engage a wider sense of semiotics. It is likely that such an enlarged sense of semiotics will also be useful for other organizational communicative episodes and as such, there are grounds for bridge-building between these quite different approaches that may ultimately lead to novel hybrid research studies.

Conclusion

In this paper we have developed and applied a protocol for gesture research in natural settings, using the context of entrepreneur investment pitches as illustrative of one type of organizational communicating setting. In presenting a fine-grained analysis of gesture in an entrepreneurial context we have illustrated the importance of attending to "modes" beyond the "verbal," indirectly challenging "language-only" versions of communication (McNeill, 2012).

In relation to research in the context of entrepreneurship, our analysis strongly suggests that studies of entrepreneurial pitching and communication should not restrict themselves to speech alone (Van Werven et al., 2015), but that future research should take account of its multimodal character and embrace a more embodied perspective. In this way, we add to recent calls for an embodied, situated and interactive account of the entrepreneurial process (Mitchell, Mitchell & Randolph-Seng, 2014). Instead of seeing entrepreneurs as individual cognitive agents with thoughts largely stemming from their dispositions and mental states, an embodied perspective frames entrepreneurship as a dynamic process co-constituted by the actions that entrepreneurs initiate as part of the entrepreneurial process (Gylfe et al., 2016; Mitchell et al., 2014). In this sense, cognition and communication pair up with thoughts being interactively created and shared as entrepreneurs engage with others such as investors in context (Clarke & Cornelissen, 2014). Specific modalities of communication,

such as gestures are able to prime and simulate action in others, impacting exchanges between entrepreneurs and investors.

As we have alluded to throughout, future research could use the protocol we present here to examine how gestures plays out in a range of interactional contexts as the scope for examining gestures in organizations is much broader than solely entrepreneurship settings. Gestures are vital to a range of strategic communications and organizational presentation settings including for example, keynote speeches, CEO strategy presentations, annual general meetings and press conferences (Biehl-Missal, 2011; Gylfe et al., 2016; Whittington, Yakis-Douglas, & Ahn, 2016). Like pitches, such contexts represent high-stake scenarios for organizations in which actors must use all available bodily means to communicate effectively to large audiences to "raise awareness of, disseminate, rationalize, and mobilize support" (Wenzel and Koch, 2017, p. 643). Future studies could also use the procedure described here to examine gestures in more informal day-to-day organizational interactions involving dyadic and small-group interactions, as the basis for effective communication to large audiences may be markedly different from communicating effectually with individuals. There is therefore much utility in detailed research conducted on speech and gestures used in more intimate organizational communications, both within organizations and with a variety of external stakeholders (e.g., customers, employees, and suppliers) (Balogun & Best, 2015; LeBaron, Jarzabkowski, Pratt & Fetzer, 2017). In sum, future research can draw on our protocol to develop a systematic and concerted focus on gestures that draws attention to the empirical and theoretical significance of gestures for organizational communication, discourse and collaboration.

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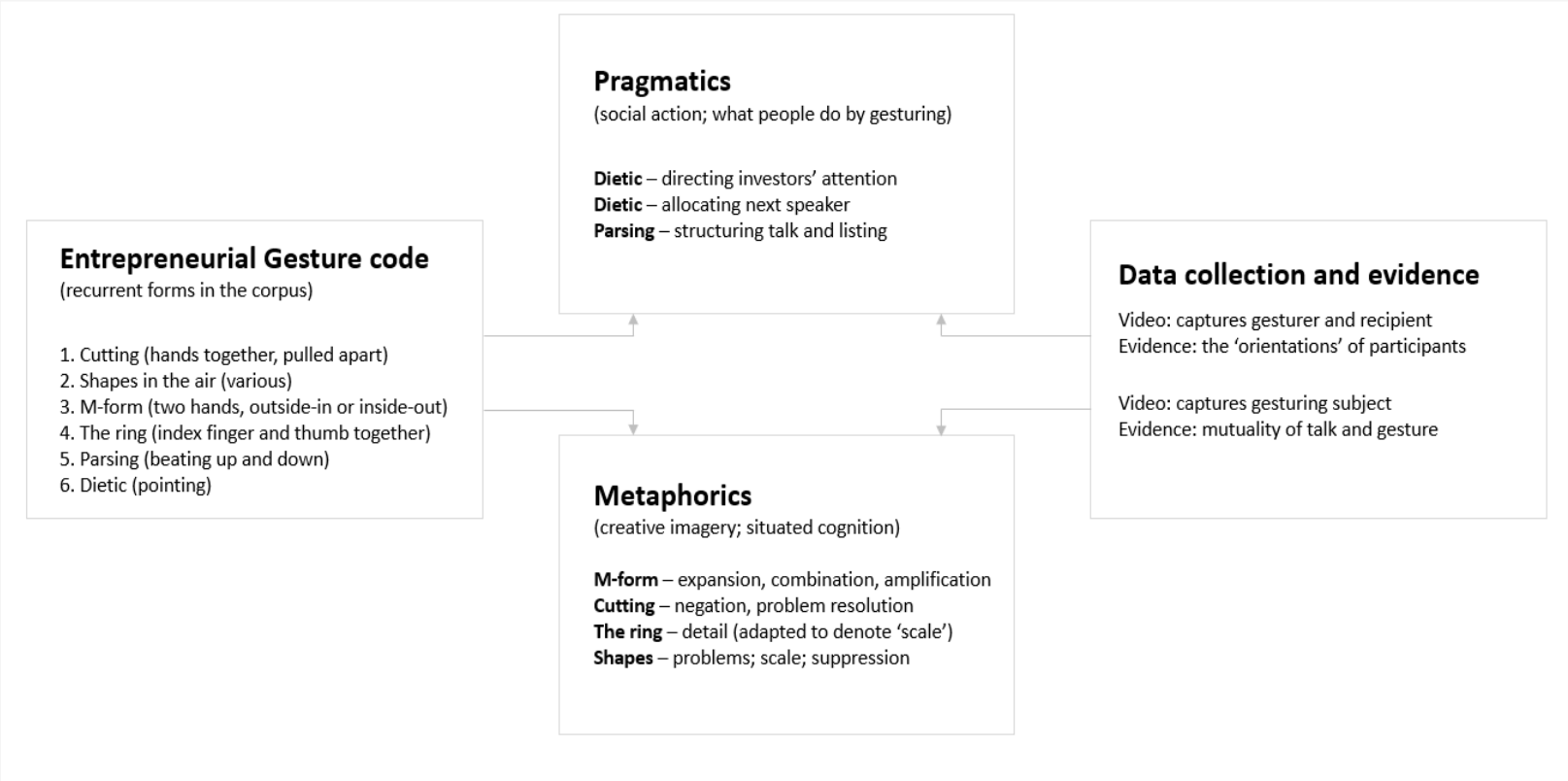
Gesture type	Communicative roles	Theoretical and Methodological Resources	Guiding assumptions
Representational (iconic or metaphoric)	Depict objects, persons, spatial relations, and so on, which may be literal or metaphoric.	Cognitive linguistics	Gestures reveal metaphors that underpin situated cognition; Requirement to video record the speaker
Pragmatic Deictic	Reveal the action being performed Direct the attention of others	Conversation analysis	Gestures are resources for the accomplishment of concerted actions; Requirement to video record the speaker and recipient

Table 1: Overview of Gesture Types



FigurFigure 1: Protocol for Gesture Analysis