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Texts: A Case Study of Joint Action

Abstract: Our linguistic communication often takes the form of creating texts. In this paper, we propose that creating texts or 'texting' is a form of joint action. We examine the nature and evolution of this joint action. We argue that creating texts ushers in a special type of joint action, which, while lacking some central features of normal, everyday joint actions such as spatio-temporal collocation of agency and embodiment, nonetheless results in an authentic, strong, and unique type of joint action agency. This special type of agency is already present in creating texts in general and is further augmented in creating texts through digital media. We propose that such a unique type of joint action agency has a transformative effect on the experience of our sense of agency and subjectivity. We conclude with the implications of the proposal for social cognition and social agency. The paper combines research in philosophy of mind with the emerging fields of digital humanities and text technology.

Keywords: texts, joint action, digital media, social agency, distributed agency, social cognition

1 Introduction

Creating texts are a ubiquitous form of linguistic communication. In this paper, we investigate the nature of texts as a case of joint action. Human social life revolves around successful performance of joint actions. A joint action is broadly defined as two or more agents intentionally coordinating to bring about a goal (e.g., Bratman 1992, 2014; Butterfill 2011; Gilbert 2009; Gold and Sugden 2007; Tomasello 2008). Joint actions occupy a central role in the development of human social cognition (e.g., Meyer, van der Wel, and Hunnius 2016; Tollefsen 2005; Tomasello 2008; Tomasello and Carpenter 2007). To date, the study of joint actions in interdisciplinary philosophy of mind has mostly focused on everyday scenarios that involve

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the direct, physical interaction between human agents. In this paper, we propose that creating texts is a case of joint action although it does not share some of the features of normal, everyday joint actions as described in the current literature. We further propose that the creation of texts through digital media increasingly reveals the inherent nature of texts as joint actions. By digital media, we broadly understand tools that transmit content over the Internet, mobile or computer interfaces. Our analyses of texts as joint actions may be considered as a case study of how current technology clearly brings to the fore and even augments certain inherent, but overlooked, features of a cognitive act. This enables us to not only obtain a better understanding of the nature of the cognitive act but also to examine how technology may transform it. In the course of our discussion of texts as joint action we shall also discuss some of the unique challenges posed to human joint action in digital media and the transformative effects of such media on human agency and human intersubjectivity. The discussions in the paper combine research in interdisciplinary philosophy of mind with the emerging fields of digital humanities and text technology. In the following section (section 2) we discuss the case of creating texts, or 'texting' as we call it, as a case of joint action. In section 3 we elaborate on the nature of joint agency in creating texts. In section 4 we conclude with the implications of our proposals for research in human social cognition and social agency.

2 Texts and Joint Action

Joint action is broadly defined as action involving two or more agents intentionally coordinating to bring about a goal.[1] Some examples of joint action found in the current literature[2] are as follows – lifting a heavy sofa together, painting the house together, preparing a hollandaise sauce together, going to Chicago together, and walking together (e.g., Butterfill 2011). Current interdisciplinary theories of joint action disagree on some of the details about the nature of joint actions. For example, some influential accounts describe joint actions as 'shared intentional activity' and propose that joint actions are enabled by 'shared intentions' (e.g., Bratman 1993). However, some other accounts contend that describing joint actions as proceeding

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1 A widely used definition of joint action as discussed in philosophy of mind comes from Sebanz, Bekkering, and Knoblich (2006), who define joint action as, "…any form of social interaction whereby two or more individuals coordinate their actions in space and time to bring about a change in the environment." (Sebanz, Bekkering, and Knoblich (2006), 70).
2 For an overview of the current literature on the topic of joint action in the domain of philosophy of mind, see e.g., Bolt et al. 2016; Bratman 2014; Butterfill and Sebanz 2011; Kiverstein 2017; Richardson et al. 2018.

via shared intentions places too high a cognitive burden on the notion of joint actions. These latter views prefer to describe joint actions in terms of 'shared goals' (e.g., Butterfill 2011; Sacheli, Aglioti, and Candidi 2015; Vesper et al. 2010). In spite of such disagreements, theories of joint actions are unanimous in claiming that joint actions function to coordinate two or more agents' activities and plans. In this paper, we focus on the notion of coordination as central to joint action.[3]

We consider the case of creating texts as a case of joint action. In this context, creating texts is used in the broad sense of creating or equipping documents with meaning (Pichler, In Press). Such documents may be both paper based and digital media based. Texting is a form of linguistic communication. A number of authors have argued in favour of the view that communicative acts, which include linguistic communication, are a form of joint action. Before entering into our discussion of texts as joint action, we shall briefly consider some prominent discussions of linguistic communication as joint action that we build on but also diverge from as our account of texts as joint action develops. The general discussion of linguistic communication as joint action is greatly influenced by the work of Grice (1957, 1989). A central aim in Grice's theory of meaning and communication is to analyse semantic meaning in terms of a pragmatic notion of communicative intentions. Such an analysis places linguistic communication firmly within the domain of joint action because a speaker cannot act with communicative intention in the absence of a hearer (Grice 1957). In the Gricean account, for a speaker A to mean something (p) by an utterance (x), A must have three interdependent intentions. A must intend that (1) the hearer will be convinced that p, (2) that the hearer recognizes A's intention in (1), and (3) that it is because of this recognition in (2) that the hearer is convinced that p. Thus, linguistic communication requires at least two agents – the speaker and the hearer.[4] Not only must the speaker engage in the act to intentionally communicate something to a hearer but the hearer also must intentionally engage in acts of attention and inference to successfully recover the speaker's meaning (Jankovic 2014; Tomasello 2008). There is a further component in Grice's theory that has influenced the discussion of linguistic communication as joint action. This is the notion of cooperation. For example, Grice writes, 'Our talk exchanges do not normally consist of a succession of disconnected remarks, and would not be rational if

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3 It must be noted that neither do we claim that all cases of coordination are also cases of joint action nor do we claim that joint action is only coordination. We focus on the notion of coordination as one of the central features of joint action as discussed by mainstream accounts of joint action and situate our discussion of texts in relation to this central feature.

4 The physical agency of the speaker/author and the hearer/reader may be located in the same person, as for example, when one is talking to oneself. However, even if the physical agency is located in the same person, there are two agentive capacities/roles at play here. Also, some authors (e.g., Avramides 1989) propose to treat such cases as derivatives.

they did. They are characteristically, to some degree at least, cooperative efforts; and each participant recognises in them, to some extent, a common purpose or set of purposes, or at least a mutually accepted direction' (Grice 1989, 26). This notion of cooperation has been given a central role in a number of later discussions of communication as a joint action (e.g., Jankovic 2014; Tomasello 2008). In our proposal of texts as a form of joint action, we contend that although texts are a form of linguistic communication what secures the nature of texts as a joint action is coordination of an agent with an evolving knowledge base rather than straightforward cooperation between agents. However, before we enter into this discussion, we shall briefly present another influential work that treats language as a form of joint action.

Herbert Clark in his book *Using Language* (1996) argues extensively that language in its actual use is a type of joint action. He writes, '…just as language use arises in joint activities, these are impossible without using language…. [W]henever people use language, they are taking joint actions. Language use and joint activity are inseparable. The conclusion … is that we cannot understand one without the other. We must take … an action approach to language use….' (Clark 1996, 29). Clark's discussion of language as a joint action builds on the insight that joint actions arise because of the need to coordinate the actions of two or more agents and each joint action is an attempt to solve a coordination problem. Following Clark, we take as our starting point the centrality of coordination when considering language as a case of joint action. In Clark's account the coordination problems that language attempts to solve relate to both coordination of *content*, or what the participating agents need to do, and coordination of *processes*, or the physical and mental systems that participating agents recruit in carrying out their plans to coordinate. Clark distinguishes between – (i) synchronous joint actions for language, such as speech and conversation, where there is coordination of both content and processes, and (ii) asynchronous joint actions for language, such as writing and reading, where there is coordination only of content. To elaborate on the distinction, in case of synchronous joint action *embodied* communicative acts, for example, eye gaze, gesturing, facial expressions, pointing, etc., importantly secure the coordination of content and the coordination of the processes of the participatory actions. In case of asynchronous joint actions, the coordination of content is secured by cognitive factors such as background knowledge, conventions, joint salience, and so on. Clark gives the example of writing a letter to his sister as a case of asynchronous joint action. Here, coordination of content is enabled by coordination devices such as mutual background knowledge, familiarity with the topic of the discourse, familiarity with each other's expectations, etc. Thus, even if there is no coordination of processes via embodied communicative acts, there is joint action via coordination of content secured by the cognitive context.

In the case of texts, we propose that while texts may be described as asynchronous joint actions, we also need to take into account that creating texts, both on paper and through digital media, is potentially an on-going process without end and an author may not have very specific knowledge about readers (and vice versa). This results in some important developments regarding the nature of coordinated activity in the joint action of creating texts. In what follows, first we analyse the nature of texting and propose that the main coordinating activity in this context is securing coordination between an agent and an evolving knowledge base and not necessarily securing cooperation between agents as such. Second, we shall consider how the absence of embodied communicative acts in texting may affect its nature as a joint action.

2.1 Texts as Coordination Devices

A broad working definition of text may be stated as – a text is a document with meaning and to produce a text is to produce or equip a document with meaning. A fundamental feature of text is that producing a text (= texting) results in an unstable and potentially continuously ongoing, endless, and open-ended entity (Pichler, In Press). Thus, meaning-making via texting inherently contains within it the participation possibilities of multiple agents in a context of dynamically evolving networks of meaning. Thus, while texting as a form of linguistic communication inherently contains within it the participation of at least two agents, it may not necessarily be modelled simply along the lines of a joint action where two agents intentionally *cooperate* to bring about a shared goal. In the previous section, we noted that linguistic communication is a joint action where both the speaker and the hearer intentionally participate. The speaker's intentional act is expressed via communicative intentions and the hearer's intentional act is expressed by the deployment of attentive and inferential processes to uncover the speaker's meaning. In the context of texting, we may describe the hearer or the reader's intentional act as an act of understanding of the speaker's meaning.

However, texting lacks the face-to-face communication between speaker and hearer that is characteristic of most forms of joint action. In the absence of such face-to-face communication, the primary source for the reader to grasp the communicative intention of the speaker is via interpretation of the linguistic content contained in the document. In such an act of interpretation, the common ground that secures communication may be largely varying, especially if we consider the fact that texting is potentially an ongoing act with massive spatio-temporal spread. This implies that the speaker may not have specific knowledge about the reader and vice versa. For example, consider Clark's case of writing a

letter to his sister as mentioned in the preceding section (Clark 1996). When his sister reads the letter, the common ground between them consists of long-term familiarity with each other, common personal background knowledge, on-going long-term plans, etc. Now imagine that Clark's letter has taken its place in an archive of his life's works and people with diverse interests come to visit the archive and read the letter among his other works. Many of these people may not have the kind of personally shared common ground that Clark has with his sister. Yet, the letter conveys meaning to them and this meaning is determined by an act of interpretation based on the reader's interests and plans. It would be arbitrary to claim that Clark's act of beginning a text (via writing the letter) is a case of joint action only when the reader is his sister and is not a case of joint action when someone visiting the archives reads it. If, following Clark, we accept that linguistic communication is necessarily a joint action then the act of creating a text, which is a form of linguistic communication, is necessarily a joint action irrespective of the specificity of who reads it. We contend that this is both the strength and the peculiarity of texting as a form of joint action.

What secures the nature of any communication as a form of joint action is common ground or common knowledge between two intentional agents. Tomasello (2008) describes the notion of common ground as follows, 'For humans the communicative context is not simply everything in the immediate environment, from the temperature of the room to the sounds of birds in the background, but rather the communicative context is what is "relevant" to the social interaction, that is, what each participant sees as relevant and knows that the other sees as relevant as well – and knows that the other knows this as well, and so on, potentially ad infinitum. This kind of shared, intersubjective context is what we may call, following Clark (1996), common ground… Common ground includes everything we both know (and know that we both know etc.), from facts about the world, to the way that rational people act in certain situations, to what people typically find salient and interesting …' (Tomasello 2008, 74–75). The critical feature of common ground as a basis for joint action is that '…it takes people beyond their own egocentric perspective on things' (Tomasello 2008, 76). In the case of texting, we propose that, due to the nature of texts as potentially *endlessly* on-going acts of meaning-making, the main role of common ground is to secure coordination between an agent and an evolving knowledge base rather than cooperation between two agents. For example, Clark may have written to his sister about attending a party together. In this case there is, in a sense, an attempt at establishing cooperative behaviour between the two agents (Clark and his sister). However, the act of texting itself is not a cooperative behaviour between two agents as such (unlike face-to-face linguistic communication) but the act establishes a knowledge base that serves to coordinate the actions of the agents in accordance with the knowledge base. Thus, we may say, that by

creating the text of the letter Clark's communicative intention is to let his sister know of a future plan and his sister participates in this joint action of texting by participating as a reader and coordinating her behaviour with a common knowledge base. However, this knowledge base may be different when someone visiting Clark's archive reads the letter. Such a reader certainly does not have any cooperation plans with Clark's invitation to the party but, for example, she may have an academic interest in knowing why Clark wrote a particular piece around the time he also wrote the letter to his sister. In this case, the reader participates in the joint action of linguistic communication by coordinating her interpretation of the communicative intention of the text with an evolving knowledge base comprising of the speaker's other works and her own academic interests. Thus, while common ground in joint actions may take people '…beyond their own egocentric perspective on things' (Tomasello 2008), it is not necessarily the case that, in the linguistic act of texting, common ground takes people out of their egocentric perspective to a perspective of cooperating with another agent. Our proposal is that the role of the common ground in the joint action of texting is to take people out of their egocentric perspective and put them into a perspective of coordinating their interpretation of another agent's communicative intentions primarily in terms of an evolving knowledge base.

There is a further reason to consider in favour of our claim that in the joint action of texting an agent coordinates her action with an evolving knowledge base rather than directly cooperating with another agent. The reason is the possibility of misinterpretation and disagreements when interpreting linguistic communications. In fact, some authors contend that such misinterpretations and disagreements are a part of the common ground in the joint action of linguistic communication. For example, Bjørndahl et al. (2015) write, 'When interacting with one another, interlocutors routinely work to establish common ground: shared knowledge, beliefs and plans for the activity (Clark and Brennan 1991). Central to the establishment of common ground is detecting and correcting misunderstandings and disagreements between interlocutors, through mechanisms of *repair* (Bjørndahl et al. 2015; Cahn and Brennan 1999; Clark 1996; Clark and Schaefer 1989). In the case of texting, repair mechanisms are largely employed to coordinate an agent's interpretation in accordance with an evolving knowledge base and not necessarily to cooperate with another agent. For example, there can be misunderstanding about certain contents expressed in the letter when a third person interprets Clark's letter to his sister. The repair mechanisms that the interpreter may use for detecting, and possibly correcting, her interpretation largely function to secure for the interpreter a coherent knowledge base in accordance with her interests and goals. This role of repair mechanisms is particularly the case for texts due to the potentially infinite number of agents who may participate in the joint action of texting. Thus, meaning-making through texts carries with it a high possibility of disagreements and

misinterpretations due to the large number of participating agents. Coherent meaning-making in such a case requires an agent to coordinate with an evolving knowledge base, which includes the common grounds for the joint action, but does not necessarily require cooperating with any particular agent.

To further clarify the claim that texts are joint actions, where agents primarily coordinate with an evolving knowledge base rather than cooperate with another agent, let us consider a case of creating texts through digital media. We propose that considering the case of texting through digital media further clearly reveals some of the inherent features of texts as joint actions. For example, consider the case of creating and using an on-line philosophical research resource such as the digital edition of Wittgenstein's *Nachlass* by the Wittgenstein Archives at the University of Bergen (WAB).[5] In the context of digital editing, some authors draw a distinction between different levels and kinds of linguistic understanding involved (e.g., Pichler 1995) as also a distinction between editorial methods such as 'transcription' and 'presentation' (e.g., Pichler and Bruvik 2014). Transcription is defined as '…the set of procedures aiming to record and document the physical, structural, and semantic data that the editor understands the source material to contain …' (Pichler and Bruvik 2014, 180–181). A transcription is thus not a mere reproduction of the original; it is not an act of producing a photographic document. Rather, by transcription from the source material a document is prepared which is informed by a great number of normative parameters inherent in the transcription context; for example, WAB's Wittgenstein *Nachlass* transcription is prepared with certain user communities in mind. Presentation, on the other hand, is defined as '…the set of acts to determine and instruct how the registered data of the source material are to be processed with regard to selection, display and format …' (Pichler and Bruvik 2014, 181). Such a separation between transcription and presentation is usually absent or at least invisible in paper-based editing, at least from the perspective of the user. However, the separation between the two in digital editing enables us to separate important,

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5 Our specific case study of the digital edition of Wittgenstein's *Nachlass* looks at texting in digital media where the primary focus of editors and users is on academic interests. Of course, creating texts through digital media can be undertaken with many different perspectives, for example, creating content in social media. We do not want to deny that the reason people create texts in digital media can be very different in different cases. We also do not want to deny that the different reasons may lead to (qualitatively) different kinds of interaction between the participants. However, in this paper we wish to emphasise that creating written content in digital media shares important features irrespective of the intention of the creators and the different types of interactions between participants. Some of the features that we discuss in this paper are the following: creating potentially endless content, potentially involving an almost indefinite number of agents, absence of embodied face-to-face interactions, and creating content that can potentially exist for an indefinite period of time. We thank an anonymous reviewer for highlighting this point to us.

but subtle, aspects of agentive behaviour and participation in the process of meaning-making. Importantly, a digital edition has the potential to make explicit and extractable the types of interpretation (and their differences) that are used during the transcription process. Thus, it gives the users the possibility of choosing between different levels of interpretation and realizing them in different ways (Pichler 1995). This is termed interactive digital editing. It implies that the user of the digital edition of the *Nachlass* is also in possession of some editorial capacities, and the active participation possibilities of the reader in the meaning-making process are clearly demonstrable. Moreover, such digital meaning-making is inherently multi-layered and different components of agentive behaviour are easily teased apart, thereby giving participating agents a wide choice of engaging with multiple types of agency in meaning-making. The whole act of meaning-making is carried out with the aim of securing for the interactive reader a coherent knowledge base. The digital editing of the *Nachlass* clearly reveals the great complexity inherent in the joint action of texting. There are large numbers of agents acting on the linguistic content in accordance with their communicative intentions, for example, the original communication by Wittgenstein, the subsequent editorial work by the trustees of the *Nachlass*, the later editorial work by the creators of the digital edition, and the interactive use of the content by the readers with some editorial capacities. This creates a dynamic, potentially ongoing knowledge base constituted by the communicative acts of multiple agents. This base acts as a common ground for the participating agents, and each agent's meaning-making act is (ideally) an attempt to coordinate with this potentially ever-evolving knowledge base.

   In this section, we have argued that the role of common ground in the joint action of texting is to secure coordination between an agent and an evolving knowledge base and not necessarily secure cooperation between two agents, as in the case of joint actions such as painting a house together or moving a sofa together. In the following section, we shall discuss another feature of coordination in the joint action of texting. This is the feature of securing coordination in the *absence* of embodied interactions between agents. In section 3 we shall argue that these two features – namely, coordinating with an evolving knowledge base and the absence of embodied interactions – result in a peculiar type of agency in the joint action of texting.

2.2 Texts as 'Non-embodied', Coordination Devices

In the interdisciplinary social cognitive literature, joint action is typically studied within the paradigms of embodied interactions between two or more agents

(e.g., Richardson et al. 2018). Such embodied interactions extend from the most basic types of motor coordination, for example, synchronized finger tapping or gaze following, to highly complex ones such as coordinated dance or musical performances. All such embodied joint action scenarios explore the rhythmic nature of coordinated motor activities. The successful performance of joint actions requires grasping the possibilities offered by the 'action space' or perceiving the 'affordances' offered by the environment and the other participating agent(s) (e.g., Davis et al. 2010). For example, if two or more people are to move a big sofa out of a room through a door, each person needs to be aware of her own behavioural possibilities in relation to the other agents' behavioural possibilities – all of which are constrained by the structure of the object (sofa) and the details of the environment. The dynamics of embodied interactions exploiting the perception of affordances serve two important functions for successful joint actions, namely, (i) stabilizing the ways of interaction and (ii) gradually shaping the agency of the individual (Nomikou et al. 2017).

In creating a text, the dynamics of embodied interactions that structure everyday joint actions, such as moving a sofa together or even using language via speech and conversation (Clark 1996), are usually not present in real-time. Let us imagine a scenario where the three literary heirs of Wittgenstein, namely Rush Rhees, Elizabeth Anscombe, and Georg Henrik von Wright, meet after Wittgenstein's death to discuss the transcription and publication of his *Nachlass*. During their discussions there would have been many expressive behaviours, gesturing, etc., to convey their satisfaction or dissatisfaction with any part of the transcription and editing process. From an embodied cognition perspective on meaning-making, such expressive behaviours would count towards the process of jointly creating meaning (e.g., Alac and Hutchins 2004; Lindblom 2015; Nathan 2008). However, written language is usually free of such embodied behaviours and introducing the digital process in creating texts has the consequence of even further 'sanitizing' the content from 'messy' human embodied ways of interacting with a document. For example, the pages of Wittgenstein's *Nachlass* (Wittgenstein 2015) are littered with additions, corrections, various types of markings, over-writings, and sometimes even doodles, all of which broadly describe the author's embodied interaction with the document. If we compare the facsimiles of the *Nachlass* with WAB's interactive digital text edition (Wittgenstein 2016), we find that the digital production is largely an endeavour to 'tidy up' and 'linearize' the content for users by letting them choose which of Wittgenstein's additions, various types of markings, over-writings, and doodles they wish to see in the content. Importantly, what the users choose to see may have significant bearings on how they understand the meaning of what they see. If we think of Wittgenstein's handwritten documents with all the 'messy' insertions, etc., as a form of his

embodied engagement with the world, then the digital editions are typically striving to provide for a text that is supposed to present, what an editor understands to be, the essential semantic content. When users approach the content, they are able to use filters or selection parameters whereby they choose to include the messy embodied inputs or reject them as part of their interpretation of the content. We may surmise that if the editor is a human agent then she may allow for more of the messy content to be part of the core text than if the editor is an automated agent. The reason for this is that algorithms and programs written for the creation of digital documents are largely built on a logical understanding of semantics for machine readability rather than on an anthropological understanding of meaning. This, in turn, forces upon the user a concept of a meaning-making agent as essentially a strictly logically operating agent rather than an agent whose meaning-making acts dynamically evolve as part of interaction in a community. While producing a text through digital media is potentially an endless process inviting the participation of multiple agents, it is nonetheless partly still governed by logical operations for machine content. Thus, texts, which are in general rather 'non-embodied' forms of linguistic communication, become even more so when created through digital media.[6] Thus, agents participating in the joint action of texting operate within an action-space that is devoid of embodied interactive processes.

Embodied interactive processes that constitute joint actions serve the crucial function of setting up a functional joint action space. Through such interactive processes groups are created that operate on a certain type of practical certainty and trust in the other person. For example, studies in developmental psychology abound with cases of how an infant's sense of agency develops and consolidates via successful joint actions with a caregiver (e.g., Hobson 2002; Reddy 2008; Rochat 2004; Trevarthen 1998). There is also a, somewhat disconcerting, paradigm to test what happens when the infant's expectations of establishing an ongoing embodied interaction is not met. This paradigm, which is known as the still face paradigm, was designed by Tronick et al. (1978). In this paradigm, after establishing a baseline of normal, affective interaction with an infant, the adult becomes unresponsive and maintains a neutral facial expression. This confuses the infant, who initially tries to re-engage the adult in the affective interactions, but eventually gives up and becomes withdrawn. The paradigm demonstrates the critical role of embodied interactions in successfully establishing a joint action space that

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6 In this context, it is interesting to note that digital media is, at the same time, constantly striving to model its rules and programs on flexible ground conditions that encourage the development of emergent connections that are capable of accommodating huge networks of collective knowledge (Rettberg 2005).

allows the participating agents to flourish and thrive. A main reason the lack of embodied interaction from the adult confuses the infant is that, as embodied agents participating in joint actions, we are naturally conditioned, so to speak, to trust the other embodied agent and have a deep practical certainty that our interaction efforts will be reciprocated. In fact, the other agent's embodied interactions are crucial to create the right 'affordances' for successful joint action.

However, how are such affordances as described above relevant in the context of creating text? Does their apparent absence imply that we have less trust and certainty in the actions of other agents participating in the act of texting? Is texting too cognitive and abstract an activity to be adequately described in terms of our everyday joint action capacities? Is it 'joint action' in a rather weak sense of the term? In the absence of embodied interactions, does texting mimic a variation of the still face paradigm and eventually lead to an agent's withdrawal from the act of meaning-making? These questions become especially important if we consider that with the advent and ubiquitous presence of digital media we encounter the possibility of creating rich, meaningful content in practically endless amounts with agents who do not enter into embodied interactions with us – interactions that generate a strong sense of trust and certainty. This certainly raises the prospect that the nature of agency in texting may be of a different type than agency in joint action scenarios such as lifting a sofa together or painting a house together. The difference(s) is further augmented in creating texts through digital media. In what follows we present a first outline of the possible nature of agency and joint agency in texting.

3 Texts, Joint Action, and Distributed Agency

Texting is an act of meaning-making that essentially has another agent at play. It is an intrinsically joint action involving the dual agencies of an author and an understanding reader. In the literature on joint actions, the agentive intentions underlying the performance of joint acts may be described in terms of what some authors call 'we-intention' (e.g., Tuomela 2006). We-intentions are a special kind of mental states that enable joint actions. Tuomela (2006) describes we-intentions as follows: 'The central condition of satisfaction of the we-intention is that the we-intending agent *intends to participate* and accordingly intentionally participates in the joint action. That is, he intends by his own action, his part or share, to contribute to the joint action. Thus, the agent's having the we-intention to perform a joint action together with the others (or that the participants perform that joint action) entails his participation intention, which is an action intention' (Tuomela 2006, 37). According to Tuomela, a defining feature of we-intentions is that such

intentions are created and maintained by a participant in a group. He writes, '…the participants intend as group members because of a group reason…This contrasts with 'I-mode' joint or shared intention. When the participants intend in the I-mode they intend solely as private persons – in contrast to the we-mode case where they must function as group members and where intending for a group reason must be at play' (Tuomela 2006, 35).

However, we-intentions of texting do not exactly mirror the conditions of we-intentions in joint action scenarios such as lifting a sofa together or painting a house together. To start with, texting potentially offers the participation of endless agents creating endless content and hence it is impossible for any agent to foresee and fully control the unfolding of the meaning-making act. Regarding joint intentions in the performance of physical joint actions, Tuomela observes, 'The formation of a joint intention (and hence a we-intention, a personal "slice" of the joint intention) requires that the participants jointly and typically intentionally make up their minds to bring about something, thus exercising joint control over the possible courses of action and settling for a particular content. The formation of a joint intention (or plan) is based on their various personal and, especially, shared desires and mutual and other beliefs' (Tuomela 2006, 37–38). But in the context of meaning-making via texting, it is not a straightforward case of 'the participants jointly and typically intentionally make up their minds to bring about something' given the potentially endless nature of the meaning-making act. The details of the action plan of each participating agent over time may be largely unknown to other agents and in fact to the agent herself, for example – how exactly an editor/user creates and selects filters to her current and future readings of the Wittgenstein *Nachlass*. Moreover, the 'something' that the agents choose to bring about is not necessarily a fixed goal or fixed content. It is potentially, constantly evolving, dynamic content. This is not to say that the joint action space of creating text is chaotic and there are no constraints structuring the creation of meaning. Creating or equipping a document with meaning operates with both explicit and implicit constraints. The explicit constraints may be the editorial rules and guidelines while the implicit constraints could be the understandings and practices within a community of users, for example, the philosophy research community using the *Nachlass*.

We propose that the joint action of creating texts is best understood in terms of what we call 'distributed agency'. In our use of the term, 'distributed agency' is group agency so vast and temporally and spatially spread out that it defies the traditional ideas and boundaries of agency. To be a text creator is to participate in a distributed agentive structure. Distributed agency exploits we-intentions but, more importantly, it is structured by the background knowledge frameworks or contexts of engagement. We-intentions in distributed agency are not straightforwardly like

we-intentions in traditionally discussed cases of everyday joint actions such as moving a sofa together or painting a house together. In everyday joint action scenarios, for example, moving a sofa together, the focus is importantly on what the other agent is doing and coordinating one's own action with that of the other agent. So, for example, while moving a sofa together we may simulate the other's action plans in detail, in real-time, and motorically.[7] We-intentions for texting, typically, would not require motoric, real-time simulation of another agent's actions. Instead, they build on our capacity of predicting another agent's cognitive engagement with the content and, importantly, thereby coordinating one's own actions with the possible evolution of the content. A defining feature of the mindset of such we-intention is the acceptance of open-endedness of one's own understanding of the joint action, both in terms of what another agent would do and in terms of how the content would change. Such open-endedness, crucially, does not usually jeopardize the joint action space. This is unlike the joint action of moving a sofa together where the evolving action is much more constrained in terms of what is achievable by the acting agents. Distributed agency, by contrast, operates by including large 'grey' zones of possible meaning-making actions by other agents and subsequent evolution of the content. The flexibility of agentive participation in distributed agency is made possible by any constellation of document carriers, documents, and author and reader agents, but it is particularly prominent in the digital media's inherent capacity to separate subtle but important aspects of our agentive behaviour in a meaning-making context. For example, parentheses in Wittgenstein's *Nachlass* can have quite different functions (besides the conventional use: e.g., suggesting a deletion, marking a possible substitution, etc.). In digitally editing or creating a text for the *Nachlass* the editor/user may disambiguate and encode differently the different functions of the parentheses. This ensures different layers of meaning-making for the same document.

To sum up the discussion so far, we propose that creating texts is a joint action involving a particular type of agency that we term 'distributed agency'. It is also a case of asynchronous joint actions (Clark 1996) where there is coordination of the content of the joint action but not necessarily of the processes of the joint action. Moreover, distributed agentive actions are not simply joint actions, they are *necessarily* joint actions in the sense that the action does not come about without the participation of at least two agents. This contrasts the distributed agentive act of texting with joint actions such as moving a sofa together or painting a house together. The act of moving a sofa as such may, in principle, be carried out by a single agent. The act becomes a joint action when two or more agents participate. But the distributed agentive action of texting *necessarily* requires the participation

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7 For example, see Gallese et al. (1996) and Gallese and Goldman (1998).

of at least two agents. Thus, distributed agentive actions are 'joint actions' in a strong sense of the term.

Furthermore, our discussion of distributed agentive actions reveals that 'joint actions', in a strong sense of the term, do not necessarily exploit our embodied interaction with another agent. However, while lacking the sense of agency characterising robust embodied activity, distributed agentive action is not equivalent to 'disembodied' mental action, for example, when one is lost in thought. Distributed agentive action is real, meaning-making act that necessarily involves other agents. What is crucial to secure the coordination of agents in distributed agentive actions is cognitive coordination for the purposes of maintaining an abstract shared goal. For example, in the meaning-making act of texting, agents cognitively coordinate to maintain and evolve a knowledge base. In the following, we briefly consider the nature of the action space in distributed agency.

3.1 Distributed Agency and Stable Joint Action Space

Joint actions typically require that a participating agent trusts the other agent(s) for successful performance of the joint action. For example, if I am moving a sofa out of the room with a friend, I believe that when we agree to lift a corner of the sofa my friend will play her part and do the required action. The synergy of acting agents in such a joint action scenario is largely established by coordinated motor activities that deliver a practical certainty about how the joint action will unfold. The joint action of creating a text is, however, not usually able to exploit the practical certainty of face-to-face coordinated motor behaviours, as we have noted in the preceding sections.

The interaction in creating text is largely of a cognitive nature where embodied interactions are not generally present. Yet the joint action of creating meaning/text requires belief in agentive capacities of other agents and a certain degree of trust even if we sometimes disagree with the semantic content expressed by the other agent. We may not face-to-face meet the other agents engaged in the joint action of texting but our belief in the other agents is different from, for example, our belief in invisible supernatural agency. We believe that the other agents operate with the required attitudes and cognitive and rational capacities of entering into the particular meaning-making act. Do we also believe that these other agents are humans like us? Or rather, do we *need* to believe that the other agents are humans like us for the successful joint action of creating text? Our proposal is that while we may believe that the other agents participating in the joint action are intentional human agents like us, we do not *need* to believe this to be the case unless there is a

breakdown of the meaningful structures of emerging collective knowledge. In the case of creating texts, the coordination dynamics of joint action is established in the emerging patterns of participatory architecture and collective knowledge structures. It is such emerging, participatory architecture and knowledge structures that scaffold the joint action of meaning-making. Thus, in the joint action of texting there is a shift from affordances offered by individual agents (as is the case for joint actions like moving a sofa together) to the knowledge structures of the common meaning-making context. The success of the joint action of creating texts relies not primarily on coordinating the meaning-making act with another agent but on identifying emerging meaningful structures in the knowledge platform. Coordination, in this context, is then primarily between an agent and the dynamic knowledge base. Trust, in this context, then takes on the form of epistemic trust in the evolving knowledge structures or trust that the evolving knowledge base is a reliable provider of information. An example to consider in this context is the case of Wikipedia. The creation of Wikipedia entries is largely self-regulatory even when run by 'amateurs' (e.g., Rettberg 2005). While Wikipedia is open to vandalism and anarchy, there are large enough numbers of contributors and participants who are passionate about keeping the knowledge base reliable and meaningfully evolving. Also, at present, official editors have received a more authoritative role in regulating the content.[8] Such commitment to the knowledge structures provides a stable joint action space where the cognitive acts of meaning-making by individual agents are conditioned and coordinated by evolving knowledge structures.

4 Conclusion: The Changing Structure of Subjectivity and Intersubjectivity

Producing texts is an act of meaning-making that fundamentally instantiates what it is to create meaning through practice and participation in a community. It thus enables us to study cognitively sophisticated meaning-making as quintessentially a form of practice within a community.[9] According to this line of thought, to learn the meaning of expressions is to learn a way of acting describable according to the rules and norms within a community. Furthermore, as an agent's or

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8 We thank an anonymous reviewer for pointing this out to us.
9 Here in passing, one may also be reminded of later Wittgenstein's anthropological or pragmatic views on meaning where meaning may be regarded as a form of action and participation in society (Johannessen 1988; Hacker 2013).

meaning-maker's behavioural repertoire expands there is a similar expansion in the agent's horizon of possible thoughts, feelings, and meaningful worlds.[10]

In this paper, we have proposed that the act of creating texts is a joint action in the strong sense in that it is *necessarily* a joint action. We have also argued that while texting is a strong form of joint action, it significantly differs from ordinary, everyday cases of joint action discussed in the literature, for example, moving a sofa together. The main differences are as follows.

First, ordinary, everyday joint actions proceed primarily by coordinating one's own actions with those of another agent. While texting requires belief in the other agent's capacity for cognitive participation, it is the evolving knowledge structures, rather than one-to-one cooperation between participating agents, that critically scaffold the joint action space. This results in a sort of transfer of trust from the coordination dynamics between agents to the coordination of an agent's actions with the evolving knowledge base, as the primary determinant of the dynamics of the joint action.

Second, ordinary, everyday joint actions importantly rely on face-to-face embodied coordination and embodied understanding of another agent's actions. Such embodied understanding delivers a practical certainty about the coordination dynamics of the agents and is critical for successful performance of the joint action. However, such embodied dynamics is not necessary for texting. In our proposal, texting is a joint action in a strong sense but it does not necessarily, in any direct way, call upon embodied agentive understanding. Thus, we have a case of joint action that is satisfactorily described as a robust meaning-making act but not as a typical case of embodied understanding.

Third, texting as a joint action is built on what we term 'distributed agency'. This is group agency so vast and temporally and spatially spread out that it defies the traditional ideas and boundaries of agency. However, ordinary, everyday joint actions such as moving a sofa together or painting a house together do not involve such distributed agency. Distributed agency operates by including large grey zones of possible meaning-making actions by other agents and subsequent evolution of the content. Ordinary, everyday joint actions, by contrast, are much more constrained by the spatio-temporal situatedness of participating agents.

Fourth, distributed agentive actions are joint actions in a strong, necessary sense. This is in contrast to cases like moving a sofa together or painting a house together. In the latter cases, the action may, in principle, be carried out by a single agent and it becomes a joint action when executed by two or more agents. But the

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10 A line of future development of the discussions presented in this paper would be to situate the discussions within the rich philosophical literature on hermeneutics, for example, the discussion of shared knowledge base in Gadamer's works (e.g., Gadamer 2004).

act of texting is necessarily a joint action in that the action does not come about without the participation of at least two agents.

We conclude our discussion by proposing that, in light of the above considerations, there are significant differences in the experience or phenomenology of a distributed agentive action, such as texting, and everyday joint actions, such as moving a sofa together. Moreover, the differences are further augmented if we consider digital media as the joint action space, and creating texts through digital media clearly brings to the fore the peculiarity of agency in texting.[11]

The potentially on-going characteristic and open-endedness of the meaning-making act in texting is greatly augmented in a digital platform and enables an author's/user's sense of agency as a participant in a vast agentive structure. The repertoires of the contents of digital media, for example, the Internet, provide at least in theory greater durability through time than physical repertoires such as paper. This may generate in agents a particularly strong sense of agency as potentially creating meaning that may last indefinitely, at least in theory. As the meaning-making joint action is not constrained by temporality, the participating agent's sense of agency may be strengthened as the creator of virtually timeless content. However, on the other hand, such strong, potentially infinite, meaning-making action also usually proceeds without the involvement of embodied interaction between agents. We have previously noted that distributed agency generates a peculiar sense of agency that is robust but at the same time lacking the practical certainty of embodied agentive behaviour. In the context of creating texts through digital media, this peculiarity may become more apparent due to the frequency with which agents in the current world create texts through digital media and the strong sense of agency it entails because of the vast agentive structures and potential timeless character of the content. In other words, agents creating texts through digital media regularly engage in a robust joint action scenario that entails a strong sense of agency but without the practical certainty and trust enabled by embodied agentive interactions. This implies that in the current world vast number of agents regularly and frequently participate in rich joint action scenarios that generate a peculiar sense of agency, robust but at the same time lacking in the practical certainty and trust enabled by face-to-face embodied agentive interactions. There is perhaps a somewhat implicit acknowledgment of this peculiarity and attempts to 'redress' it in the fact that digital technology actively strives towards more and more embodied forms of user interactions,

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11 One line for future research in developing the ideas presented in this paper would be to situate the discussions within the context of 'mediated action' (e.g., Wertsch 2017) or actions that involve cultural tools and focus on the nature of the cultural tools in joint action, comparing and contrasting them to the tool(s) of digital media. We thank an anonymous reviewer for pointing this out to us.

for example, immersive game scenarios, sensory augmentation techniques, multi-sensory interfaces for everyday communications, etc. However, it is of interest to note that a considerable amount of such technologies not only aim at recreating embodied experiences but also at creating 'super' embodiment where it is possible to have embodied experiences that we normally would not have. How the experience of such super embodiment may change our sense of agency is a topic of research in itself.

A further feature that requires future exploration in the context of creating texts through digital media is how our meaning-making actions shape our experience of beliefs and emotions. This is of particular relevance in the context of creating texts that are of a personal and subjective nature. It is perhaps not surprising that large volumes of digital textual communication of personal contents take place via use of visual imageries (e.g., emoticons) rather than merely language because in the absence of real-time embodied engagements language may be unable to convey rich subjective states by words alone. Such imagery often convey mental states where the subjective feelings associated with the state may not be fully expressible simply by words, and, in non-digital everyday contexts, is expressed via embodied behaviours. The impact of such a visual-imagery-filled use of language on how emotions are felt when communicated via such language is an emerging field of research (e.g., Aldunate and González-Ibáñez 2017). However, some studies have suggested that the use of such imagery-filled language may lead to a certain 'objective' and 'cognitive' understanding of emotions, both of another person's and of one's own (e.g., Kim et al. 2016; Shin et al. 2008; Yuasa, Saito, and Mukawa 2006). Thus, such language use may usher in a different way of experiencing our own mental states and that of other people, and it merits extensive investigation for future research.

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