



Working together
**A longitudinal study on the management of deontic
rights in joint activities**

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by
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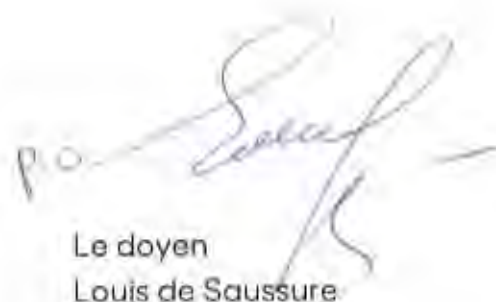
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Le doyen
Louis de Saussure

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Summary

Everyone at some point in their life enters a new community. People enter new schools, they start new jobs, they pick up hobbies and make friends. Entering a new community of practice can be an incredibly complex, exciting, and sometimes frightening endeavor. The object of this thesis is to examine the trajectory of the newcomer in workplace settings. Specifically, this thesis focuses on cooperation and resistance, and how newly acquainted co-workers navigate to delicate issues when working together. Power and cooperation are conceptualized in this thesis as participants **deontic rights**, and the ability to decide on one's own actions or the actions of another. Drawing on ethnomethodologically informed and longitudinal conversation analysis (CA) this study looks at speakers' multimodal practices for navigating through joint courses of action in a semiotically rich, workplace environment. Data consists of audio-video recordings collected longitudinally of a newcomer and co-worker working in a physics laboratory. The analytical focus of the thesis focuses on (1) the organizational structure of initiating, engaging, and delegating responsibilities in joint actions, (2) the practices for displaying resistance to joint actions through disagreement and non-compliance, and (3) how participants alter a recipient's ongoing actions to resolve troubles. Using multimodal conversation analysis, these chapters document the complex, assemblies of language, multimodal resources, and objects at different levels of sequential and synchronous organization to accomplish the above actions. Documenting how participants **recipient design** their actions at various levels of joint activities, shows the local, temporally emergent routines that arise out of the practical need to conduct coordinated workplace interactions. Furthermore, by adopting a longitudinal approach, the study also shows how the management of **deontic rights** is a longitudinal, interactional accomplishment that changes with participants shared interactional histories and evolving social relationships. The study presents a novel contribution to longitudinal CA, multimodal interaction, and workplace studies while providing further empirical evidence for the fundamentally rich, socially and materially distributed nature of social interaction.

Keywords: Longitudinal Conversation Analysis, Multimodal Conversation Analysis, Deontic Authority, Deontic Rights, Recipient Design, Workplace Studies, Workplace Socialization,

Interactional Competence, Joint Activity, Joint Action, Resistance, Applied Linguistics,
Language and Power

Résumé

À un moment ou à un autre de sa vie, chacun entre dans une nouvelle communauté. On entre dans une nouvelle école, on commence un nouvel emploi, on s'adonne à des passe-temps et on se fait des amis. Entrer dans une nouvelle communauté de pratique peut être une entreprise incroyablement complexe, excitante et parfois effrayante. L'objet de cette thèse est d'examiner la trajectoire du nouvel arrivant sur le lieu de travail. Plus précisément, cette thèse se concentre sur la coopération et la résistance, et sur la manière dont les nouveaux collègues de travail abordent les questions délicates lorsqu'ils travaillent ensemble. Le pouvoir et la coopération sont conceptualisés dans cette thèse comme des **droits déontiques** des participants, et la capacité de décider de ses propres actions ou des actions d'autrui. S'appuyant sur une l'Analyse Conversationnelle (AC) ethnométhodologique et longitudinale, cette étude examine les pratiques multimodales des locuteurs pour naviguer à travers des plans d'action conjoints dans un environnement de travail riche en sémiotique. Les données consistent en des enregistrements audio-vidéo collectés longitudinalement d'un nouvel arrivant et d'un collègue travaillant dans un laboratoire de physique. L'axe analytique de la thèse se concentre sur (1) la structure organisationnelle de l'initiation, de l'engagement et de la délégation des responsabilités dans les actions conjointes, (2) les pratiques de résistance aux actions conjointes par le biais du désaccord et de la non-conformité, et (3) la façon dont les participants modifient les actions en cours d'un destinataire pour résoudre les problèmes. En utilisant l'analyse des conversations multimodales, ces chapitres documentent les assemblages complexes de langage, de ressources multimodales et d'objets à différents niveaux d'organisation séquentielle et synchrone pour accomplir les actions susmentionnées. Le fait de documenter la manière dont les destinataires des participants conçoivent leurs actions à différents niveaux d'activités conjointes montre les routines locales et temporelles émergentes qui découlent de la nécessité pratique de mener des interactions coordonnées sur le lieu de travail. En outre, en adoptant une approche longitudinale, l'étude montre également comment la gestion des droits déontiques est un accomplissement longitudinal et interactionnel qui évolue en fonction de l'histoire des interactions partagées par les participants et de l'évolution des relations sociales. L'étude présente une nouvelle contribution à l'AC longitudinale, à l'interaction multimodale et aux études sur le lieu de travail, tout en fournissant des preuves empiriques supplémentaires de la nature fondamentalement riche, socialement et matériellement distribuée de l'interaction sociale.

Mots-clés : L'Analyse Conversationnelle, études longitudinales, analyse multimodale des conversations, autorité déontique, droits déontiques, études sur le lieu de travail, socialisation sur le lieu de travail, compétence interactionnelle, activité conjointe, action conjointe, résistance, linguistique appliquée, langage et pouvoir.

Transcription Conventions

The following conventions are used in all transcripts and based on Jefferson (2004) conventions for verbal talk and Mondada (2019) for multimodal conduct.

[]	Overlap onset and end
=	Latched speech
(0.0)	Pauses in tenth of seconds
(.)	Pause (one tenth of a second)
<u>Stress</u>	Indicates stress or emphasis on a word/syllable
::	Elongated pronunciation
↑↓	High and low pitch, respectively
.	Falling intonation
,	Low-rising intonation
ˊ	Slightly-rising intonation
?	High-rising intonation
-	Cut-off
°talk°	Lower volume relative to surrounding talk
°°whisper°°	Whisper
.hhh	In-breath
Hhh	Out-breath
ha / .ha / th(h)at's f(h)unny	Laughter with in-breath / out-breath / co-occurring with speech
>fast<	Sped up relative to surrounding talk
<slow>	Slowed down relative to surrounding talk
(xxx)	Unintelligible talk (one x per syllable)
/ symbol /	Phonetic transcription
→	Focal turn
* α ∞ ∇ Ω	Symbols indicate multimodal conduct in relation to speech Multimodal conduct is transcribed in grey
.....	Preparation phase of gesture/movement/multimodal conduct
-----	Stroke phase of gesture
,,,,,,	Retraction of gesture/movement/multimodal conduct
*->	Multimodal conduct continues until...

->*	Multimodal conduct ceases
->>	Multimodal conduct continues through end of extract

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Chapter 1. Introduction

[C]o- operative action creates an unfolding diversity of languages, cultures, and settings.

This poses for every community the task of building competent members with the skills and knowledge required to see and act in the world in just the ways that make possible the ongoing accomplishment of the activities of that specific community.

Goodwin (2018, p. 12)

How does one become a member of a particular community? People are not born speaking French, German, English, Vietnamese, or Finnish, and yet under the right circumstances, they come to speak fluently. No one is born a football player, lawyer, conversation analyst, or physicist, but inevitably, many people come to participate in these fields at some point in their lives. Some become experts. Others may participate only occasionally. Some may take up an interest in a particular hobby or profession, then drop it later and pick it up again years later. People *do* become experts, so why bother asking how?

In the quote above (and along with many other works), Goodwin convincingly argues for the empirical study of the social processes that allow people to become “skilled, competent inhabitants” (2018, p. 446). Cumulative, empirical evidence from a variety of domains that research social interaction shows that cognition and knowledge are distributed (Hutchins, 1993) and that basic capacities that involve the creation and distribution of knowledge rest on the capacity for human cooperation (Tomasello, 2014), and the “human-interaction” engine (Levinson, 2006). Another way to put it is that the same basic components that allow people to carry on a conversation (turn-taking, repair, action formation, and ascription) are the fundamental building blocks for creating specialized workplaces and institutions (Heritage, 1984). As in everyday interaction, accomplishing workplace activities and displaying expertise is socially distributed and interactive (Collins & Evans, 2007; Arminen & Simonen, 2021). Being a competent member and being *recognized* as a ‘competent member’ therefore interfaces with knowledge (Ryle, 1945), social communities (Lave & Wenger, 1991), member identities (Van De Mierop & Schnurr, 2017), and shared experiences and common ground (Deppermann & Schmitt 2021, 2023).

Expertise is not a given, but it is co-constructed (Jacoby & Gonzales, 1994). Studies in epistemics (Heritage 2012a, 2012b) and deontic authority (Stevanovic 2013; Stevanovic & Peryäkylä 2012) have shown how the inherent asymmetries in interaction—the differential

distribution of knowledge and authority—are omnipresent in everyday conversations and collaborative decision-making. The practices for establishing, navigating, or contesting such asymmetries unfold in moment-by-moment interaction.

This thesis focuses on how power and authority figure into newcomers' developmental trajectories and workplace socialization. More specifically, it examines how participants initiate, engage in, and resist joint courses of action in a physics laboratory. With a specific focus on power, it considers the following:

[T]he ability to see relevant entities is lodged not in the individual mind but instead within a community of competent practitioners. This has a range of consequences. First, the power to authoritatively see and produce the range of phenomena that are consequential for the organization of a society is not homogeneously distributed. Different professions—medicine, law, the police, specific sciences such as archaeology—have the power to legitimately see, constitute, and articulate alternative kinds of events. Professional vision is perspectival, lodged within specific social entities, and unevenly allocated (Goodwin, 1994, p. 626).

When people come together, they inevitably face issues of authority. The uneven allocation Goodwin speaks of applies across communities but also to professionals within communities. Professional vision is therefore contested vision (Goodwin, 1994, pp. 615-629) and studies of how professionals cooperate—work together to achieve a goal—or co-operate by accumulating, transforming, and building upon the actions of one another (and not always for cooperation) throws light on what it means to be a 'member' of a community and the processes involved in workplace socialization.

The focus of this thesis then is related to but not explicitly concerned with the technologically specific practices that make up a professional's daily work, but instead about how newly acquainted, professional colleagues develop practices for managing joint activities with one another. Managing joint activities with objects entails multiple activity management moves (Stevanovic & Monzoni, 2016), and deciding on moves, therefore, involves the management of deontic rights.

1.1 Structure of the thesis

The thesis is organized into seven chapters. Chapter 2 outlines the empirical findings on the development of interactional competence and language socialization in the workplace. I then relate these findings to relevant domains of workplace socialization and ethnomethodologically

informed conversation analysis (EMCA) workplace studies. Next, I discuss how **deontic authority** relates to coordinating joint actions and **recipient design**. I conclude by synthesizing these related facets and identify key gaps within the research.

Chapter 3 outlines the methodological procedures for collecting, transcribing, and analyzing audio-video recordings of naturally occurring actions. Then, I discuss the methodological requirements of conducting **longitudinal CA research**. Next, I outline the workplace context—a physics laboratory located in the French-speaking region of Switzerland—the focal participants, and processes for selecting the research terrain, collecting data, and building collections. I conclude this chapter with a discussion of the limitations of the study.

Chapter 4 focuses on how the focal participants, a newly arrived Ph.D. researcher and his colleague, manage the organization of **joint activities** in the laboratory. Through fine-grained analysis of **longitudinal data**, I discuss how the two participants mutually orient to their **deontic status** relative to one another and how this unfolds in the structural organization of initiating and carrying out joint activities. I describe the **practices** (including complex assemblages of language, the body, and materials) through which participants manage joint activities and how these results relate to the participants developing acquaintanceships.

Chapter 5 focuses on joint activities but from a different angle: how resistance is manifested in joint activities. The analysis shows how the two participants display and manage resistance to co-participants rights to control joint activities. I describe the practices for doing resistance and how these practices impinge on joint actions. Finally, I discuss the results with a longitudinal perspective.

In chapter 6, I investigate how practices for proposals and resistance combine and fluctuate across participants' local interactional histories (Deppermann, 2018) as they manage unexpected troubles and disagreements in the lab. I focus on how the sequential positioning of specific activity management moves interacts with longitudinal changes over time. The implications and limitations of this question are discussed with directions for future research.

In chapter 7, I summarize the findings of these research questions and synthesize the findings to discuss in detail the overall findings. In this chapter, I detail the novel contributions of the thesis and directions for future research.

1.2 Aims and contributions of the study

This thesis contributes to three specific domains of research. First, this study presents a unique and novel insight into longitudinal, interactional studies on how professionals the interactional practices that allow them to display their expertise in complex, workplace settings. The contributions here are relevant for studies on the development of (second language) interactional competence, language socialization, and workplace studies. The present thesis provides a unique addition to longitudinal CA research in institutional and workplace environments. It also furthers research on how participants elaborate and change multimodal practices over time.

Second, this study will provide valuable insights into **recipient design**, action formation and ascription, and how **interactional histories** change across multiple timescales impinge on the practices employed for social actions.

Finally, this thesis documents the relationship between **deontic rights** and **interactional competence**. It provides a novel perspective on the longitudinal management of deontic rights at the nexus of evolving social relationships.

In this thesis, I address the following research questions.

RQ 1 How do newly acquainted co-workers manage the delegation of responsibility and deontic entitlements in joint courses of action, over time?

- What is the overall structural organization for initiating and engaging in joint courses of action?
- What are the verbal and multimodal practices for initiating and carrying out joint courses of action? How are they organized synchronously and successively?
- How do participant methods for managing deontic authority interrelate with processes of socialization?

RQ 2 How do newly acquainted co-workers manage deontic entitlements in disagreements about joint courses of action, over time?

- What is the overall structural organization for displaying resistance in joint courses of action?
- What are the verbal and multimodal practices for displaying and responding to resistance in joint courses of action? How are they organized synchronously and successively?

-How do changing practices for managing deontic authority and resistance intersect with processes of socialization?

RQ 3

How do participants' interactional histories interrelate with joint, longitudinal changes over time?

How do co-participants upgrade attempts to control a co-participant's ongoing action?

Chapter 2: Background

This thesis addresses a central question: how does one become a member of a shared community with a common goal, such as a workplace or scientific laboratory? Institutions, including workplaces, schools, sports teams, or political parties, can be defined as communities of practice (Lave & Wenger, 1991): a group of people who come together and work for a shared goal. Lave & Wenger's (ibid.) influential work on communities of practice respecified learning from what was typically considered a primarily cognitive process involving the transfer of information to a socially distributed, participatory phenomenon. In addition, the authors re-specified the sites where learning takes place, focusing on settings of novice-expert training and apprenticeship. Their view of 'peripheral participation' suggested that viewing newcomers' transitions into communities and trajectories to more or less skilled, competent members should be the object of focus. What these trajectories look like is a matter of empirical investigation, and adequately capturing the specificities of situated learning requires fine-grained data collection through audio and video recordings. While single instances of novice-expert interactions within professional settings abound, fewer studies have used longitudinal audio-video data to capture the detailed specificities of developmental trajectories for newcomers in the workplace.

Research within Ethnomethodology and Conversation Analysis (EMCA, CA) has always been rooted in understanding interactional competence (Heritage, 1984 p. 241), that is, to explicate the 'member's methods' for producing and recognizing accountable actions (Garfinkel, 1967). Interactional competence is fundamental to accomplishing social interaction, gaining membership, and participating within communities of practice. Studies on the development of interactional competence are primarily rooted within studies of second language (L2) interaction (but see Wooton 1997). However, their import and relevance for studies of workplace interactions, among other domains, should not be understated.

The design of the current study, its epistemological orientations, and analytical methods draw from studies in longitudinal conversation analysis (CA) (Wagner, Pekarek Doehler, and Gonzalez-Martínez 2018; Depperman & Pekarek Doehler, 2021) and the development of L2 interactional competence. In the following sections, I describe the historical antecedents of research on the development of interactional competence and longitudinal CA and their

empirical contributions. I then discuss prior research on workplace studies in social interaction and how deontic authority (Stevanovic, 2013) interrelates with longitudinal workplace studies.

2.1 The development of interactional competence

The historical antecedents of studies in the development of IC are rooted in the field of Second Language Acquisition (SLA). In particular, these studies arose from a view that SLA focused too heavily on individualistic and theory-first cognitivist explanations, which construed language learners as deficient while wholly ignoring social and contextual factors of learners' authentic language use. Firth & Wagner (1997) famously lodged some of these first critiques against the predominant research agendas in SLA (but see already Kachru, 1985; Kachru & Kachru, 1990) and, to borrow a term from Garfinkel (1964), called for the respecification of SLA's analytical objects. In particular, rather than focusing on L2 speakers as deficient and focusing on their mistakes, Firth & Wagner (ibid.) argued for a bottom-up approach collecting the fine-grained details of what L2 speakers *could* accomplish and how they went about doing it.

To break from the literature for a second, most of the readers of this thesis probably have experiences traveling in a country with a foreign or unfamiliar language. Despite the glaring challenges one might face in these situations, it is probably quite likely that they were able to accomplish quite a bit: ordering a cup of coffee, checking into a hotel, and even asking for directions are all likely possible in many situations where speakers do not share the same language. Studies on the development of L2 interactional competence take this notion as a precept. Interacting in an L2 is more than learning, and using an L2 involves recalibrating language practices to suit their local, sequential, and interactional contexts. When participants interact in an L2, they recalibrate their methods for accomplishing the generic principles of social interaction that are often the analytic foci of CA. For example, studies have documented how L2 speakers develop practices for turn-taking (Barraja-Rohan, 2015; Cekaite, 2007; Pallotti, 2001; Watanabe, 2016, 2017; Young & Miller, 2004), repair (Balaman, 2016; Brouwer & Wagner, 2004; Hellermann, 2009, 2011; Pekarek Doehler & Berger, 2019) opening phone-calls (Brouwer & Wagner, 2004), actively responding and displaying listenership (Ishida, 2011; Kunitz & Yeh, Sert, 2019; Taleghani-Nikazim, 2019), and opening-up sequences such as dyadic tasks or storytellings at the dinner table (Hellermann, 2007; 2008; Pekarek Doehler & Berger, 2018) and coordinating talk with multimodal resources (Eskildsen & Wagner, 2015; Skogmyr Marian & Pekarek Doehler, 2022). Other studies have focused on specific actions

such as requests and directives (Al-Ghatani & Rover, 2012, 2013; Roever & Al-Ghatani; 2015; Skogmyr-Marian, 2018; Skogmyr Marian et al., 2017) disagreeing (Pekarek Doehler & Pochon-Berger, 2011) or communicative activities such as storytelling (Berger & Pekarek Doehler, 2018) and complaints (Skogmyr Marian, 2021; 2023).

The cumulative empirical evidence in these studies demonstrates that when L2 speakers develop interactional competence, they (1) **recalibrate** and **diversify** their practices (Pekarek Doehler, 2019) to incorporate increasingly varied sets of resources and practices for accomplishing actions. More recently, some studies have shown that the routinization and simplification of practices equally are involved in developing interactional competence (Pekarek Doehler & Balaman, 2019; Pekarek Doehler & Skogmyr Marian, 2022). Whether practices become more elaborate or more compact, the studies show these changes (2) allow participants to tailor their actions in increasingly context-sensitive ways to social circumstances and recipients (Nguyen, 2011; Pekarek Doehler & Pochon-Berger). Documented change over time can then be observed and traced to describe **developmental trajectories** (Pekarek Doehler, 2019), and, in some cases, tracing such trajectories allows researchers to pinpoint the mechanisms that catalyze change, such as troubles or repair (Nguyen, 2012; Nguyen & Malabarba, 2019) or evolving social relationships (Brouwer & Wagner, 2004; Greer, 2019; Pekarek Doehler & Berger, 2019; Skogmyr Marian, 2018), or interactional histories (Skogmyr Marian, 2021; 2023).

To sum up, an increasing number of studies document how participants tailor and develop practices for social interaction to become increasingly efficient over time and that social interaction is a longitudinal, ever-evolving accomplishment. As Pekarek Doehler (2019) put it:

The capability to interact with others, and to adapt one's own conduct to that of others as well as to the social situation at hand, is a central vector for social and professional integration, and has proven to be key to people's being recognized as valid participants, social agents and—ultimately—members of a social group. The importance of understanding what it is that makes people proficient in engaging in social interaction, and in particular in the in situ dynamics of verbal interaction in real time—be it in an L1 or an L2—cannot be overestimated (p. 47).

More recently, studies in the development of interactional competence have taken root and provided similar findings for outside L2 contexts. Nguyen's (2006, 2011, 2012, 2018)

documented pharmacists developing interactional competence in patient consultations and role-plays (Nguyen, 2018). The author (Nguyen, 2012) identified changes in the way the two participants in the study engaged in patient consultations, including topic management, sequencing and transitioning actions, and the formulation of medicines, side-effects, and other relevant objects. The findings demonstrate that changes in delivering smooth, efficient consultations did not follow guidelines within the profession but were instead local interactional accomplishments (pp. 228-229). The two pharmacists displayed an increased ability to transition between actions within the consultation smoothly and to recipient-design (re)formulations of medicines, objects, and processes while responding to while pre-empting possible troubles in achieving intersubjective understandings of these processes with the patients,

Nguyen ultimately showed that the local problems and solutions to the interactional accomplishment of patient consultations for pharmacists are a longitudinal achievement (p.228-229), with the participants displaying increasing responsiveness to the local contingencies of the interactions, such as responding to implicit knowledge requests from patients. Nguyen's study showed a developmental trajectory different from the guidelines that pharmacy consultation materials and training suggested. Rather, the recurrent participation in multiple consultations allowed the participants to display their expertness through increasingly context-sensitive practices across subsequent consultations. The development of interactional competence for novice pharmacists involved distinguishing between the technical *expertise* necessary for pharmacists' work and the expertness (Nguyen, 2006) with which they could design actions and respond locally during consultations.

Nguyen's studies mentioned above have important implications for the studies on institutional interaction (Drew & Heritage, 1992), workplaces, and other institutions. The findings again reinforce the omnirelevance of practices for conducting local interaction even in settings where experts in the field or institutional organizations may prescribe top-down procedures for conduct. By taking an emic-perspective to longitudinal data, Nguyen details various social actions and practices related to the sequential organization of talk in pharmacist-patient consultations while also charting differences in the trajectories of two different pharmacists with one participant elaborating her practices for patient consultations and another increasing his assertiveness (Nguyen, 2012, p. 225).

Similarly, studies of language socialization (typically L2 socialization) have emphasized the direct relationship between participation and workplace interactions. L2 socialization studies address the “manifold complexities of children or adults with already developed repertoires of linguistic, discursive, and cultural practices as they encounter new ones” (Duff & Talmy, 2011). Researchers often take a somewhat broader focus than the micro-level details of the moment-to-moment accomplishment of interaction (though they do not necessarily ignore them), employing ethnographic methods and interviews in addition to or instead of audio-video recorded data. Empirical foci zoom in on issues such as identity, agency, and language attitudes and ideologies (ibid. p.103-104). These studies highlight L2 speakers memberships as novices in communities of practice focusing on the detailed ways in which language learners assume and calibrate their social identities as part of (or apart from) the language classroom (Block, 2009; Friedman, 2009; Morita, 2004), or as situated interstitially within diverging linguistic communities such as the language of home and the language of school (Guadardo, 2009; Schecter & Bayley, 1997), or the language of the workplace (Goldstein, 1997; Li, 2000; Vickers, 2007). Empirical findings contribute to how the contexts of L2 language communities (Guadardo, 2009; Talmy, 2008) can provide or prevent participation opportunities based on a speaker’s proficiency (Goldstein, 1997; Vickers, 2007). Others show how other cultural aspects of identity are enacted through L2 use (Gordon, 2004; Li, 2000; Siegal 1996), allowing members to situate themselves as part of that community of practice. Studies such as Vicker’s (2007) have used video-recorded analyses to challenge assumptions of monolingual, lingua franca workplaces. Others, such as Li’s (2000) study on language socialization in the workplace, show how L2 speakers orient to using more ‘target-like’ grammatical forms when making requests in English. The focus on L2 use in workplace contexts highlights important areas of study but comes with certain analytical challenges as well.

On the one hand, like studies of L2 interactional competence, L2 (workplace) socialization studies emphasize the joint nature of development, or as it is frequently termed within the studies, the bidirectional nature of socialization (Ochs & Schieffelin, 2008, 2012). By emphasizing workplace socialization as a bidirectional (joint) process, these studies eschew problems of conceptualizing language and socialization as processes of transfer. The active role of participants and their agency to accept, resist, or shape their socialization process is a prominent topic of interest. Agency is the focus of programmatic papers in the field (Duff & Talmy, 2011; Talmy, 2008), and various studies have shown how participants actively resist

target language and cultural norms (Fogle, 2012; Siegal, 1996; Guadardo, 2009). Siegal (1996) documents how a Japanese as a foreign language learning student in the United States showed how one participant, a white, middle-aged American female, resisted a learner identity by avoiding the use of a particular linguistic resource (in this case, the honorific form) in lieu of others (epistemic modals) to express politeness stances in asymmetrical hierarchical interactions (discussions with a professor). On the other hand, the emphasis on aspects such as language ideology may only sometimes fit within an emic perspective. The value and contributions of the research should not be discounted, but the potential sacrifices that come from focusing on ideological views of language should not be tossed aside either.

In particular, while studies on L2 workplace socialization emphasize the inextricable nature of language use and participation, there are certain details that deserve critical evaluation. First, the focus on participants as novices and newcomers poses analytical issues in studying social interaction from the bottom up (B & Smith, 2021; Hindmarsh, 2010). The a priori categorization of members as novices or newcomers only sometimes captures the comprehensive intricacies involved in workplace settings. Furthermore, what is missing from many studies on language socialization in the workplace are the precise details of the practical work that participants engage in when taking up a new job or entering a new community. More recent distinctions of L2 workplace socialization as “double socialization” (Li, 2000; Roberts, 2010) seem to posit that language use and workplace socialization are two separate phenomena occurring in parallel. Adopting a perspective that considers the practices (language or otherwise) for social interaction both serve and are rooted in the very interactions in which they take place aligns with studies on the development of interactional competence and may reveal robust findings in the observable, emically-oriented details that occur in workplace studies.

In a nutshell, studies on the development of (L2) interactional competence provide robust evidence and a strong analytic framework for detailing how participants who are, in some sense, newcomers—whether that be to a new language or new profession—develop practices to deal with the routine, practical problems of everyday interactions. By shedding light on **developmental trajectories**, studies on the development of interactional competence mutually elaborate EMCA research and findings. Promising studies by Nguyen have demonstrated the applicability of developmental studies in institutional settings that form an empirically-driven, participant-oriented perspective that details from the bottom up the

problems and practiced solutions newcomers face. With this thesis, I attempt to partially address this gap by taking this approach precisely.

So far, this literature review has focused on the development of interactional competence, the empirical findings within the research, and its applicability to institutional and workplace contexts. The following section details relevant literature from non-longitudinal workplace studies and their relevant contributions to this thesis.

2.2 EMCA workplace studies

EMCA-informed workplace studies have been fruitful in documenting the complexities of collaboration within the frameworks of institutional talk and workplace studies programs. For example, the so-called institutional talk program (Drew & Heritage, 1992; Arminen, 2005) has examined how professionals and laypersons interact, taking settings such as doctor-patient interactions, journalist interviews, courtroom testimonies, and classrooms. In contrast to the focus on how laypersons and experts negotiate and how institutional requirements impinge on the organization of talk, workplace studies focus on the ‘shop floor’ (Garfinkel, 2002) problems participants face and the practical methods they employ for solving them.

Typically, these studies focus on complexities of interaction in technologically rich workplace environments, emphasizing the situated, embodied, and material conduct that aids or constrains the production of professional work. Workplace studies span a range of professional contexts from air traffic control rooms (Harper & Hughes, 1993), airplane cockpits (Nevile, 2004), control rooms in the London underground (Heath & Luff, 1992), surgical settings (Heath & Luff, 2021; Koschmann et al., 2007/2011; Koschmann & Zemel, 2011; Mondada 2011, 2014, Zemel & Koschmann 2014, among many others), and business meetings (Asmuß & Svennevig, 2009; Asmuß & Oshima, 2012; Boden, 1994; Deppermann, Schmitt & Mondada, 2010; Svennevig, 2012) among others (see also the volumes in Day & Wagner, 2018 and Llewellyn & Hindmarsh, 2010).

What ties these studies together are Suchman’s definitions of workplaces as “centres of coordination” (1997) and “situated improvisation” (1992). In contrast to primarily ethnographic studies of work, Suchman’s work has attempted to explicate in minute detail how activities are conducted in relation to the spatial and material environment of the workplace, the arrangement of tools, technology, and artifacts, and how these resources are employed by participants in co-ordinating with others. Goodwin’s work on archaeological apprenticeship

(1994, 2018), airplane control centers (1995), and chemists in the laboratory (1997) have demonstrated the inextricable nature of human bodies, objects, and their environments in building knowledge in professional settings. Hindmarsh and Heath's (2000) study on the achievement of deictic references in a telecommunications control office showed how the apparently simple practice of deixis and pointing was organized not just around the pointer, but the object of referent, the availability of the referent to participants, and the workplace activities in which participants were engaged. Various works on surgical settings in operating theaters (Heath et al., 2021) identify the microlevel coordination of transferring objects and monitoring co-participants' bodies in high-stakes settings.

Workplace studies have contributed to EMCA research on situated learning, novice-expert relations, and how members are brought into communities of practice. Studies of novice-expert surgeons in the operating detail the incremental achievements in locating and identifying anatomic elements (Koschmann et al., 2011; Koschmann & Zemel, 2011, 2014; Zemel 2011, 2014). Alaç (2009) has shown how expert MRI technicians combine verbal descriptions, gestures, and brain scans to display how to read and interpret otherwise opaque artifacts. Goodwin (1994, 2000) also shows how experts use embodied participation frameworks, gestures, and talk to show novices' practices for coding, seeing, and transforming objects into a scientific phenomenon.

A second contribution of workplace studies relevant to this thesis is the focus on coordinative routines in professional settings (Luff et al., 2000). Hindmarsh & Pilinick (2002, 2007) examined how an anesthesiologist and trainee coordinate their bodies and actions during the intubation of patients in the operating room. While there are ordered and delicate steps to the intubation process, they show how the routines are not fixed but flexible, ongoing, and interactionally emergent, resulting in constant adaptations to co-present bodies during the intubation process. LeBaron et al. (2016) have similarly described flexible routines in physician handoffs at an ICU. In these meetings, one physician who had worked a shift in the hospital meets with the replacement physician to discuss patient files. Rather than a series of fixed moves in the handoff routine, the authors show that the physicians tailored the sequences of moves in the handoffs according to the conditions of the patient. The authors identified a series of moves, such as skipping or rearranging discussion points according to their local relevance. Altering the routine in these methods was typically done at transition relevance points within the routine. More recently, González-Martínez & Drew (2021) identified how routine nurse

call procedures are adapted by nurses according to the type of declarative troubles informings they give to recovery room attendants and how different formulations recruit different methods of assistance.

Goodwin's studies (1994, 1995, 2000, 2003, 2018) have shown how professional communities are constituted by the same common, generic practices employed by participants in mundane interactions, and they work to build up the lifeworlds that constitute professional practices and their members (1994, p. 628). Communities of practice are not impenetrable 'black boxes' (Latour, XXX) that exist independently of the outside world, but, As Heritage (1984) put it:

No social institution can be treated as a self-subsistent entity which exists independently of the accounting practices of its participants. The reproduction of institutional settings and the accounting practices through which they are constituted is an elementary and fundamental fact of institutional life. And to demand that institutions function in independence from these reproductive processes is, to adapt an earlier observation of Garfinkel's, very much like complaining that if the walls of a building were only gotten out of the way one could see better what was keeping the roof up' (p. 229).

Workplace studies uncover relationships between the interactional order of everyday human life (Levinson, 2006) and the institutional order of culturally specific settings (Mondada, 2013 p. 2). Studies of everyday social interaction and workplace interactions mutually inform each other as to how the multimodal, semiotic resources participants use in everyday interaction manifest their social realities.

- The accomplishment of institutional/workplace tasks is locally situated and context sensitive. It involves the coordination of talk, technological materials, objects, and artifacts at various levels of sequential and synchronous organization (Mondada 2011).
- Institutional/workplace tasks rest on the skilled, competent members of a community of practice who can observe, manipulate, respond to, and display their competencies through practices of seeing, manipulating objects, and drawing attention to joint domains of scrutiny (Goodwin 1994).
- The smooth, successful coordination of tasks rests on **routines** which make upcoming actions (manual and turns at talk) projectable for participants (Heath & Luff, 2021)

- Instructional settings and novice/expertise interactions in workplace settings are perspicuous sites for revealing how interactionally competent members are engaged in various communities of practice.

In addition to the evidence documented above, emerging studies show how interactional change over time manifests in institutional and workplace contexts. Mondada (2018) and Gonzalez-Martinez & Giglio (2020) examine how members in business meetings orient to items on an agenda in consecutive meetings. Hazel (2018) has shown how theater rehearsals. Similarly, Hazel (2018) and Northon (2019) show how actors in a stage play transform play scripts during theater rehearsals leading to the emergent accomplishment of a scene. Deppermann & Schmitt (2021) tracked the emergence of a lexical item, *wabi sabi*, in theater rehearsals documenting the ways in which actors build a shared, common understanding of its meaning. More recently, Deppermann & Schmitt (2023) documented the emergence of shared routines in theater rehearsals demonstrating that the repeated, interactionally shared practice of joint actions allows participants to project and anticipate upcoming actions. The increasing reliability of next actions allowed participants to work through a routine scene with increasing flexibility and creativity.

EMCA workplace studies and CA studies focusing on mundane interactions have a strong sense of mutualism. Workplace studies provide evidence for the generic, embodied practices that allow participants in professional settings to enact their work and accomplish distributed actions. Novice-expert interactions highlight the stepwise processes involved in performing institutionally specific actions. Yet, few studies look at the facets of expertise in instructive settings among peers, or how their processes of developing practices might be accomplished longitudinally. Since most of these studies focus on relatively fixed participant roles, more research is needed to look at how elements of peripheral participation change over time. Coordinating actions with others is a multilayered phenomenon. Participants must coordinate their talk, bodies, and objects, as well as their identities, roles, rights, and responsibilities in unfolding interaction. In this final section, I examine the role of deontic authority in interaction.

2.3 Deontic Authority

Deontic authority, simply put, is the capacity of an individual to determine action (Stevanovic 2013, 2018; Stevanovic & Peryäkylä, 2012). Stevanovic (2013) distinguishes between *deontic status* and *deontic stance*. Deontic authority refers to an individual's role within the interaction,

which may be their formal credentials or status within an institution. Deontic stance refers to how participants position their authority *relative* to coparticipants in interaction. Participants may position themselves congruent to their status (deontic congruence) as a parent giving their child a bald directive to perform an action or by trumping the sequential context of their turn in progress (Kent, 2012). Deontic authority and stance may also be *distal* or *proximal*, with the former reflecting an individual's right to decide on another's actions and the latter referring to participants' rights to open-up or close-down topics (Stevanovic, 2015). So, deontic stance is achieved at both actional and sequential levels.

Stevanovic (2012, 2013a, 2013b, 2013c, 2021) examined organizational meetings between a pastor and cantor of a church as they make arrangements for future activities in church services and events. The author focuses on how participants make and respond to *proposals* in joint decision-making sequences. In a series of articles, Stevanovic demonstrates various ways in which participants display their relative deontic authority according to the sequential organization of the joint decision-making process as well as the resources used by participants for displaying and acquiescing or contesting deontic authority through a variety of interactional features:

Stevanovic's studies have shown work to maintain deontic symmetry in joint decision-making routines through a variety of interactional features:

1. Proposals may be constructed at the verbal level as declaratives, conditionals (Stevanovic & Peräkylä, 2012), or thoughts (Stevanovic 2013a) whereby the speaker invites the participant to engage in joint decision-making activity or act as informings about future events for which recipients may not have a say. Different forms index different levels of **deontic stance**. Speakers may preface asking and stating conditionals to project less constrictive responses allowing recipients to
2. Responses to proposals may be constructed to (a) establish access to the subject matter of the proposal, (b) express agreement with the speaker's views, and (c) display commitment to carrying out the proposed action. These various junctures in the decision-making plan may be altered or bypassed by recipients leading to different outcomes.
3. Disapproving responses including prosody and humming (Stevanovic 2013b, 2013b) where (a) humming sustains the appearance of joint involvement in the encounter while building a dispreferred response and (b) differing prosodic contours of action responses

(*yeah let's take it*), positive evaluations (*yeah that's good*) display prior proposals as being accepted (dynamic prosody) whereas the same utterances with flat prosody are treated as not-yet-confirming responses, leading to further discussion of the proposal.

4. Proposals may also be expanded post-sequentially with displays of uncertainty by the speaker resulting in recipients confirming or dispelling the speaker's doubts.

Studies on deontic authority have typically studied decision-making for courses of action that are either distal (future), particularly in business meetings (Asmuß & Oshima, 2012; Svennevig & Djordjivolic, 2015), participatory democracy meetings (Magnusson, 2020) medical treatment settings (Heritage, 2021; Landmark et al., 2015) and therapeutic settings (Ekberg & LeCouteur, 2015). Most settings involve joint decision-making processes for distal (future) actions and, therefore, involve how participants decide on co-participants' future conduct. More recently, studies by Thompson, Fox & Raymond (2020) and Raymond et al. (2021) demonstrate the relationship between grammatical form and deontic stance, with different forms operating on a cline of deontic stance.

A key finding in studies of **deontic authority** is the relationship between *deontic status*, *deontic stance*, and *action formation* and *ascription*. When participants display their deontic stance as relatively high or low, they do so by combining multimodal resources (speech including grammar, prosody, non-lexical vocalizations, withholding talk), gestures, facial expressions, and gaze. The assemblage of these resources constitutes particular practices for routinely and recognizably displaying their deontic stance to co-participants. Recipient design—or how a participant designs a turn-at-talk for a specific other—is thus a key component of deontic authority. In the following section, I will discuss empirical findings for recipient design.

2.4 Recipient Design

Recipient design refers to how speakers design a turn in a way that orients to specific facets of the recipient (Sacks, Schegloff & Jefferson, 1974; Sacks, 1992). Early studies (Sacks & Schegloff, 1979; Schegloff, 1996) documented how participants minimize the descriptions of referents under the presupposition that the referent will be known to the recipient. Goodwin (1979) showed how a speaker calibrates the online emergence of his turn according to the embodied conduct of multiple recipients and the recipient's prior knowledge about the unfolding announcement. Participants in interaction have indefinite resources for definite

meaning (Heritage 1984, p. 144). That is, they have a range of resources that participants select from and choose to employ to accomplish specific actions, which may be verbal, including grammatical, lexical, and prosodic, or may involve multimodal conduct, including gestures of the hands and arms, positioning of the legs and torso, gaze, and movements of the head, such as nods or headshakes. These multimodal assemblies (Goodwin, 2013) are by no means incidental. *Turn design* is a systematic resource that allows participants to accomplish precise meanings and achieve intersubjectivity within specific sequential contexts (Drew, 2013). Speakers may design their turns in response to multiple facets of interaction. They may do so to enact particular roles within institutional contexts (Drew & Heritage, 1992; Levinson, 2013), in relation to the entitlements and contingencies of the action being performed (Antaki & Kent, 2012; Craven & Potter, 2010; Curl & Drew, 2008), according to spatiotemporal contingencies of their local material environment (De Stefani & Gazin, 2014; Fox & Heinemann, 2020; Gubina, 2021; Sorjonen & Raevaara, 2014), in response to the unfolding multiactivity setting (Mondada, 2014), or based on the action's urgency (Bolaños-Carpio, 2020), delicateness (Lerner, 2013), or the costs and benefits to be gained (Clayman & Heritage, 2014).

In a seminal study, Curl & Drew (2008) compared the use of two requesting forms *I wonder if* and *modal interrogatives* for making requests. By comparing two different contexts—informal interactions between family and friends and after-hours calls made to a general physician—the authors documented that the difference in request forms was not attributed to the institutional context, politeness (Brown & Levinson, 1979), or social status. Instead, what participants oriented to in their selection of request forms were their entitlements to make the request and the contingencies surrounding the request. Participants systematically used modal interrogatives to make requests when they had high entitlements to make the request (medical emergencies). *I wonder if* requests were deployed by participants who oriented to either low entitlements to make a request or possible contingencies that the request could not be granted.

The accountability participants assign to themselves in being responsible for a particular turn-at-talk (cf. Enfield 2012), its relation to prior talk, and the kind of response it projects (Raymond et al., 2021) thus features as a core element of talk-in-interaction. By projecting or constraining a particular response, participants employ specific recipient-designed forms to establish intersubjectivity. Participants may use negational components to restrict a recipient's possible understanding of the propositional content of an utterance (Deppermann, 2014), to

make arguments, to give instructions, or avoid problematic expressions (Deppermann & De Stefani, 2019). Recipient design is, therefore key to managing social relations, including indexing stance toward relationships through greetings (Pillet-Shore, 2012), and in ways that it accumulates across participants' interactional histories (Deppermann, 2018). Studies addressing how recipient design figures into the developmental processes, interactional histories, socialization, and evolving relationships are a promising avenue for this research.

2.5 Synthesis, Rationale, and contributions of the study

To sum up the key points above in a nutshell: Becoming a member of a community of practice is a longitudinal, achievement. Becoming a member is locally situated and contextually bound to the community, institution, or workplace, its socio-material ecology, and overall objectives. Ethnographic studies of workplace socialization and situated learning have documented how moving from apprenticeship to novicehood involves changes in participation, which is often defined by the *scope* of participation (as described by Hutchins pp. 73-76). While workplace studies offer abundant evidence for the moment-by-moment ways in which professionals build their expertise in interaction, fewer studies have addressed the joint, longitudinal accomplishment of such expertise. Studies on the development of interactional competence and longitudinal CA provide a practical, empirically driven solution to uncovering workplace socialization. This is the first contribution of the present thesis.

A second novel contribution is that this thesis conceptualizes deontic authority as a facet of interactional competence. By showing how participants develop and elaborate practices for managing deontic authority in interaction over time, this study provides further insight into existing studies on deontic authority. Additionally, by looking at the management of deontic authority in practical, object focused centered actions, I expect this thesis to contribute to the contextually-bound nature of deontic authority in joint, object-centered interactions and how the synchronous and sequential organization of verbal and embodied conduct allows participants to negotiate their relative deontic authority, over time.

Finally, this thesis expands on workplace socialization issues by providing empirical support for the notion of joint development and how the development of routines and changing practices for initiating routine actions indexes joint orientations to changing participant roles.

- RQ 1 How do newly acquainted co-workers manage the delegation of responsibility and deontic entitlements in joint courses of action, over time?**
- What is the overall structural organization for initiating and engaging in joint courses of action?
 - What are the verbal and multimodal practices for initiating and carrying out joint courses of action? How are they organized synchronously and successively?
 - How do participant methods for managing deontic authority interrelate with processes of socialization?
- RQ 2 How do newly acquainted co-workers manage deontic entitlements in disagreements about joint courses of action, over time?**
- What is the overall structural organization for displaying resistance in joint courses of action?
 - What are the verbal and multimodal practices for displaying and responding to resistance in joint courses of action? How are they organized synchronously and successively?
 - How do changing practices for managing deontic authority and resistance intersect with processes of socialization?
- RQ 3 How do participants' interactional histories interrelate with joint, longitudinal changes over time?**

Chapter 3: Methodology

3.1 Research Questions

This thesis addresses the following research questions:

- RQ 1 How do newly acquainted co-workers manage the delegation of responsibility and deontic entitlements in joint courses of action, over time?**
- What is the overall structural organization for initiating and engaging in joint courses of action?
 - What are the verbal and multimodal practices for initiating and carrying out joint courses of action? How are they organized synchronously and successively?
 - How do participant methods for managing deontic authority interrelate with processes of socialization?
- RQ 2 How do newly acquainted co-workers manage deontic entitlements in disagreements about joint courses of action, over time?**
- What is the overall structural organization for displaying resistance in joint courses of action?
 - What are the verbal and multimodal practices for displaying and responding to resistance in joint courses of action? How are they organized synchronously and successively?
 - How do changing practices for managing deontic authority and resistance intersect with processes of socialization?
- RQ 3 How do participants' interactional histories interrelate with joint, longitudinal changes over time?**
- How do participants deal with non-compliance when re-directing a co-participant's ongoing action?

I tackle each of these questions with a longitudinal perspective by outlining the *practices* for accomplishing the above actions, including the verbal, embodied, and material resources. I focus on how these resources are assembled and calibrated at various moments within the joint activities. First, I discuss the methodological foundations of CA, multimodal CA, and longitudinal CA. Next, I present the context of the study, research terrain, data collection process, focal participants, and an overview of the data collected. I then describe the principles behind my criteria for analysis.

3.1 Methodology

3.1.1 Conversation Analysis

Conversation Analysis (CA) emerged in the late 1960s and early 1970s as a research program inspired by Garfinkel's (1967) work in ethnomethodology. Harvey Sacks's lectures and interest in developing a new kind of sociology are credited as being foundational in what would later become the field of CA (Heritage 1984 p.233-244, Lynch 1993 ch. 6). Harvey Sack's had an interest in how to deal with developing a "natural," "primitive" and above all egalitarian sociology that would allow anyone to see, observe and draw conclusions on the ordinary conduct of social interaction. A revolutionary yet simple solution emerged: the tape recorder.

It was not from any large interest in language or from some theoretical formulation of what should be studied that I started with tape-recorded conversations, but simply because I could get my hands on it and I could study it again and again, and also, consequentially, because others could look at what I had studied and make of it what they could, if, for example they wanted to be able to disagree with me. (Sacks, 1992: 26)

Sacks and his colleagues began recording informal conversations, phone calls, therapy groups, and service encounters, many of which would feature in Sack's various lectures as starting points for the following interests in his lectures (1992). For Sacks, using audio recordings as raw materials that could be democratically observed and contested "again and again" and which could ultimately lead to "vernacular observations" which were not bound to any particular sociological training or specifications was a way of dealing with the "actual details of actual events," "handle them formally" and be "informative in ways in which primitive sciences tend to be uninformative" (Sacks, 1984, p. 26). The collection of audio recordings would eventually lead to the foundational paper in CA authored by Sacks, Schegloff & Jefferson (1974), *A simplest systematics for the organization of turn-taking in everyday conversation*.

[T]he existence of organized turn-taking is something that the data of conversation have made increasingly plain. It has become obvious that, overwhelmingly, one party talks at a time, though speakers change, and though the size of turns and ordering of turns vary; that transitions are finely coordinated; that techniques are used for allocating turns, whose characterization would be part of any model for describing some turn-taking materials; and that there are techniques for the construction of utterances relevant to their turn status, which bear on the coordination of transfer and on the allocation of speakership. In short, a body of factual

material, accessible to rather unmotivated inquiry, exposes the presence of turn-taking and the major facets of its organization. (ibid, p.699)

SS&J thereby formulated conversation as a locus of human social interaction, one in which the participants themselves had to methodically deal with the seemingly apparent facets of taking turns. The facts of conversation derived by SS&J include that participants must deal with speaker-change, rules that “one party talks at a time,” that conversations are overwhelmingly characterized by only brief occurrences of overlap in talk by transitions in speakership with “no-gap, no-overlap.” Furthermore, conversations are characterized by a lack of preordained fixedness in terms of the variation in turn order, distribution of turns, turn size, the continuous or discontinuous nature of talk, what participants say or do with their turns, and the overall length of conversation. Finally, SS&J also draw attention to particular mechanisms such as turn-allocation techniques when a speaker selects another to talk by addressing a turn to them or when a hearer self-selects as the next speaker, which can be done through various turn-constructional units (TCU’s) varying from single words to ‘sentential’ length, and repair mechanisms for dealing with turn-taking errors such as two parties talking in overlap or with troubles in understanding.

SS&J underscored the relevance of using raw materials for uncovering members' methods (Garfinkel, 1967) relative to the “actual details of actual events” (Sacks, 1992, p.26). For SS&J, the organization of the turn-taking machinery was an undeniable fact made increasingly plain in their observations of the data rather than a sociological fact that was first and foremost sought out and attempted to capture. The ‘body of factual material, accessible to *unmotivated inquiry*’ (Sacks, Schegloff & Jefferson p.699, italics mine) led the authors to make an important observation about the ubiquity of conversation and its organizational mechanisms as interactional accomplishments:

Conversation can accommodate a wide range of situations, interactions in which persons in varieties (or varieties of groups) of identities are operating; it can be sensitive to the various combinations; and it can be capable of dealing with a change of situation within a situation. Hence there must be some formal apparatus which is itself context-free, in such ways that it can, in local instances of its operation, be sensitive to and exhibit its sensitivity to various parameters of in a local context. Some aspects of the organization of conversation must be expected to have this context-free, context-sensitive status; for, of course, conversation is a vehicle for interaction between parties with any potential identities, and with any potential

familiarity. We have concluded that the organization of TURN-TAKING for conversation might be such a thing. That is, it appears to have an appropriate sort of general abstractness and local particularization potential. (ibid, p. 699-700)

What SS&J seemed to suggest was an empirically driven understanding of certain tenants of face-to-face interaction that might exist as a more general, perhaps universal, infrastructure for social interaction across contexts. They note that conversation, and thus methodological procedures for taking turns in conversation or doing conversation, exists in a wide range of situations, including so-called mundane interactions and more specific interactional contexts. This 'context-free yet context-sensitive' nature of talk in interaction suggested that turn-taking may be the potential site for understanding a vast array of sociological inquiries, including language use and development, membership categories, and how social institutions of varying capacities were organized.

CA research has inspired a focus on turn-taking as a situated accomplishment for a wide range of researchers in sociological domains, as well as full-length tutorials on the methodological procedures for doing conversation analysis (Hepburn & Potter, 2021; Hutchby & Wooffitt, 2008; Liddicoat, 2007; Sidnell & Stivers, 2012). In the following section, I consider some of the central tenants regarding CA, including data collection and transcription procedures, unmotivated looking, and building collections and analyses.

After Sacks and his colleagues' investigations into examining tape-recorded conversations as raw materials for formal analysis, audio and, more recently, video recordings have become fundamental to CA's research program. Audio-video recordings allow the analyst to capture, observe, diffuse, agree, and contest the actual details of the interaction that are likely unrecoverable from field notes or ethnographic observations and non-existent in mere speculations about interactions. These details may be viewed repeatedly, allowing the analyst to uncover the 'seen but unnoticed' (Garfinkel, 1964) facts of everyday life and making those commonplace consequentialities of everyday interaction 'visible' to the analyst. Capturing the interaction through audio-video recordings is the first step. The second step is making these features visible for inspection and proper analysis.

A problem emerged in studying the language of talk-in-interaction, namely the issue of how to transcribe and present snippets of audio-recorded conversations in a way that represented the

rich complexities of spoken language, including grammar, lexical items, pronunciation, phonological variation, and prosodic features, and so on. Gail Jefferson was the first to pioneer the transcription conventions which would attempt to preserve and expose these features to the analysis, adopting a variety of symbols to represent such prosodic and temporal features (including overlap and pauses) which can be found in Appendix A. Indeed the CA transcription is a learned skill, sometimes opaque, and one which has by some scholars been called into question for its usefulness in maintaining Sacks's and Garfinkel's visions of an 'ordinary science.' In a 1985 paper regarding CA transcription conventions, Jefferson put it like this:

Why put all that stuff in? Well, as they say, because it's there. Of course there's a whole lot of stuff "there", i.e.; in the tapes and it doesn't all show up in my transcripts; so it's because it's there, plus I think it's interesting. Things like overlap, laughter, and 'pronunciational particulars'... for example. What good are they? I suppose that could be argued in principle, but it seems to me that one cannot know what one will find until one finds it. (p.15)

Jefferson was probably being a bit 'tongue-in-cheek' in the above quote while also drawing an essential maxim to the domain of ethnomethodological CA: that no detail should be discarded as irrelevant prior to analysis (Heritage 1984) and that social interaction consists of the 'seen but unnoticed' features of daily life (Garfinkel, 1964). For Jefferson, issues such as exhortations out-breaths, mishearings, and their ensuing repairs, or the elongation or abrupt cut-off of lexical items were possibilities, not just for representing what occurs in interaction but for uncovering Sacks's (1992) 'order at all points' maxim whose representation and preservation "led to the discovery of ranges of orderliness" many of them which are "yet to be explored" (Jefferson, 1985, p.23).

Transcriptions, then, are not merely an effort to put words onto paper. Transcripts are a fundamental component of the analysis. It is a step to uncover what is happening in the data, how the participants are orienting to what is happening, and how this represents the participants' own *emic* perspectives of the unfolding talk in interaction (Hellermann, 2015). By virtue of being part of the analysis, however, transcription is never neutral but part of the epistemological orientations of the researcher, their theories, and what they wish to show in the data (Bucholtz, 2000; Ekström, 2007; Hutchby & Wooffitt, 2008; Ochs, 1979; Psathas & Anderson, 1990). Transcription choices always foreground some aspects of the interaction while backgrounding others. The burden is then on the researcher to make informed decisions about how the transcriptions adequately represent the *emic* perspectives of participants in interaction.

Despite the complexities Jefferson (1985) mentioned above, initial CA made ground in highlighting the sequential organization of talk, and particularly how certain first actions (questions, complaints) make conditionally relevant second actions (answers, apologies) (SS&J 1974, p.728). The notion of so-called ‘first’ and ‘second pair parts (FPP, SPP) in CA research quickly became a central focus for many researchers. And while researchers may choose to focus on so-called ‘first actions’ (Heritage, 2013; De Stefani, 2018) or ‘responsive actions’ (Thompson, Fox & Couper-Kuhlen, 2015), at the core of CA research is a focus on the adjunct of the sequence (Enfield, 2011), namely, what does a response require to be counted by participants as an adequate next turn? (Levinson 2013, p.107). In an idealized example, the typical adjacency pair might look something like the following:

1 A: FPP (Question)

2 B: SPP (Answer)

In line 1, participant A performs some action, a question, for example, which is characterized by features of turn-design (Drew, 2013) which make it publicly accountable as a question (question-words, rising intonation). Then, in line 2, participant B responds with an answer. This answer is constituted as an answer by its position within the sequence and its turn design features that make it accountable as a response.

Such ideational, clear-cut examples indeed do exist in everyday interaction, but interactions are also punctuated by the other ‘messy’ interactional details seen in SS&J’s (1974) work. Uncovering these features, as Jefferson suggested, strengthens the robust, empirically driven nature of CA research in identifying the social and interactional accomplishments of seemingly mundane routines, such as opening and closing phone conversations (Schegloff & Sacks, 1973), and how participants orient to routines, moment by moment as they unfold. Talk and its other audible counterparts (laughter, breathing, non-lexical vocalizations) are essential to most interactions, but the embodied nature of face-to-face interaction brings about additional considerations for participants and researchers. In the section below, I discuss issues related to multimodal analyses.

3.1.2 Multimodal CA: Multiple modalities and temporalities

To further add to Jefferson’s proverbial “stuff” that is “there” in everyday conversations, the face-to-face nature of much of social interaction and its primordially embodied nature (Streeck, Goodwin & LeBaron, 2011) has, in some ways, complexified the analysis of ordinary

conversation while also fueling more “seen but unnoticed,” everyday, mundane features including gesture, gaze, postures, movement and manipulation of objects.

C. Goodwin’s (1979) paper was perhaps one of the first to systematically analyze the role of gaze in the construction of a first announcement and how achieving mutual gaze with recipients could lead to a FPP being incrementally adjusted and adapted to co-participants’ conduct. As he noted:

The turn at talk provides an area where nontrivial social, linguistic and cultural phenomena, as well as such nonvocal phenomena as gaze, can be analyzed as elements of a single integrated process. Such an integrated perspective upon this field of action might be not only valuable but necessary for the accurate description of the phenomena under analysis. For example, in traditional linguistics it has been assumed that the analysis of sentences can be performed upon examples isolated from the process of interaction within which they naturally emerge. The analysis presented here has argued, to the contrary, that the sentence actually produced within a particular turn at talk is determined by a process of interaction between speaker and hearer. Their collaborative work in constructing the turn systematically modifies the emerging structure of the sentence, adding to it, deleting from it, and changing its meaning. Insofar as this is the case, the procedures utilized to construct sentences are, at least in part, interactive procedures. (p.112)

The above quote highlights the importance of both analysis and representation of turns-at-talk, the actions they perform, and the range of responses they engender. Later work done by both M.H. and C. Goodwin would take great detail in demonstrating social interaction as a multimodal accomplishment (Goodwin 1994, 1995, 2000, 2006; Goodwin & Goodwin 1986, 1996).

Mondada (2007b) argued that researchers interested in multimodal conduct should analyze and re-present in fine detail the temporal features and adjustments of talk, gestures, facial expressions, and object manipulation and how the methodical coordination of such embodied features by participants are mobilized for participants in accomplishing adjacency-pair sequences. Building on practices developed by Heath (1986), Goodwin (1980), Kendon (1990), and Streeck (1993), Mondada (2018c) developed a systematic notation system for transcribing multimodal conduct, which has now been widely adopted and used by many CA practitioners.

Mondada's conventions are not the only practices. Elsewhere, Laurier (2014) has used 'comic book grammar' using image-based transcripts organized in a time series to provide the reader with an impression of the visual changes that occur in unfolding interactions when participants walk through public streets for example. By adding text balloons, the reader can gain an impression of the moments where talk occurs within the visual actions. However, Laurier (ibid.) notes that comic-book transcripts are not an analytical step but rather a way of presenting analysis for publications.

As with transcribing talk in interaction, transcribing multimodal conduct in interaction means taking rigorous, sometimes painstaking, efforts in repeated viewings and transcription of the data and observing any features of interaction that might be relevant without discarding anything *a priori*. There are advantages and disadvantages to these processes and to the two different methods of presenting transcripts mentioned above. While Laurier's comic-book grammar provides an ease to the reader who might be overburdened with the technical details of a multimodal transcript, it also sacrifices the fine-tuned detail and attention to temporality. Mondada's (2018c) conventions, on the other hand, preserve these details but can provide complications for the reader and present the author with issues of space requirements for journals and publications.

In a nutshell, there is no single solution to transcribing and representing data. Transcription remains a fundamental piece of the analytical process, uncovering the "stuff" that occurs in everyday interactions and the formation of actions and their responses. The treatment of fine-tuned multimodal transcriptions has led to a range of studies documenting how the body is instrumental in accomplishing openings and closings in mobile settings (Broth & Mondada 2013, 2019; Mondada, 2014a), how pointing gestures and their various trajectories co-occur with deictic references and gaze (Mondada, 2014b; Stukenbrock, 2018), and how actions such as requests may be pre-empted by offers or visible displays of trouble (Drew & Couper-Kuhlen, 2014; Kendrick & Drew, 2016) or in the selection of grammatical formats (Fox & Heinemann, 2016). In section 3.2.3 below, I will discuss in detail how practices of multimodal transcription as an analytical step led to my discovery of the data-driven focus of this thesis. Before that, I turn to the issues of building collections and doing so for longitudinal CA in particular.

3.1.3 Longitudinal CA: Tracking change over time

CA research has always been, in at least one sense, a field of comparative study. In the earliest papers by Sacks, Schegloff & Jefferson (1974), it was clear that the aim was to systematically uncover the normative procedures relevant to participants in doing conversation. CA research typically relies on building collections of an organizational practice such as managing turn-taking, opening and closing interactions, or repair. Studies may also focus on specific actions such as assessments, invitations, and requests, or they may take departure from the study of linguistic forms or non-verbal behavior such as laughter or types of gestures. Where CA differs from other studies in linguistics and gesture is its focus on the positionally sensitive (Schegloff, 1996) nature of language and embodied conduct, its temporal achievement, and how features of interaction, whether verbal or non-verbal, are methodically deployed in relation to activities and actions.

Tracking change over time, as mentioned in Chapter 2, provides another analytical challenge in identifying comparability longitudinally. Zimmerman (1999) argued for the systematic study of similar phenomena across languages, settings, and cultures (horizontal) and over time (vertical) to capture the emergence and development of interactional practices. Studies in the development of L2-IC (Hellermann, 2008; Pekarek Doehler & Berger 2015, 2018, 2019, see also discussion in chapter 2) have proceeded by building collections of “same-but-different” cases (Koschmann, 2013), such as story- or task-openings, disagreements, word searches to elucidate how participants develop and recalibrate practices for accomplishing similar actions in similar environments. More recently, longitudinal studies within CA and social interaction opened to fields other than L2 studies, such as the progressive agendas of work meetings (Gonzalez-Martínez & Giglio, 2020; Mondada, 2018b), psychotherapy sessions (Voutilainen, Rossano & Peräkylä, 2018) theater rehearsals (Deppermann & Schmidt, 2021; Hazel, 2018), journalist-politician interviews (Clayman & Heritage, 2002, 2021) and Nguyen’s (2011) study mentioned in chapter 2.

By focusing on specific actions, or instances of systematic organization practices, longitudinal studies can track various features such as how topics, words, practices, or routines change over time, and how these relate to participants’ interactional histories (Deppermann, 2018; Deppermann & Schmidt, 2021; Skogmyr Marian, 2021), evolving social relationships (Brouwer & Wagner, 2004) or changing expertise (Goodwin, 2001; Nguyen, 2011). Building longitudinal collections does not rest simply on similar action types but also on other issues

such as contextual features (classroom interactions, driving lessons), participant frameworks (novice-expert), or the same participants (*au-pairs* and their host family). Longitudinal CA requires natural control of these variables so that observed changes over time can be interpreted as an effect of time rather than a change in the situation, the participants, or the speech exchange system. Longitudinal collections of different participation frameworks will likely yield different results and constrain the possibilities of making analytical claims about what changes are observable and whether or not claims can be made to the mechanisms of such change. As Wagner, Pekarek Doehler & González-Martínez (2018) have noted, the issue of warranting comparability is at stake in conducting longitudinal CA. The actions or practices identified in the data should be similar or identical over time in terms of their sequential positioning, their deployment within similar activities and speech-exchange systems, and those involving the same (or same type) of participants (p.23). Furthermore, the collection of such identified instances needs to be more than two, allowing for the analysis of the longitudinal progression of change that occurs from the first collected instance ($X + 1$) to the second ($X + 2$), and so on ($X + 3$, $X + 4$, ...). Collecting, transcribing, and preserving warrantable comparability will then allow the analyst and researcher to show how the observed changes over time relate to mechanisms of change, including (1) an individual participant's learning or development, (2) sociohistorical development across participants and communities (as in Clayman & Heritage 2002) or (3) development within communities, amongst members and their interactional histories (Deppermann & Pekarek Doehler, 2021).

To sum up, collecting audio-video recordings of naturally occurring interactions is fundamental to CA's program. Analyzing data is done through repeated listenings/viewings of the data, and the progressive refinement of transcribing as a method for uncovering the organizational details of interaction often suggested as a way of 'unmotivated looking' (ten Have 2007) to uncover the features of talk and the production of actions and interactions in a way that retains an emic perspective and analysis. Transcribing may capture various elements of multimodal conduct, which may broaden the scope of research beyond talk and refine an understanding of how language and other modalities mutually elaborate within sequences of action. Building collections of identifiably comparable phenomena allows the researcher to establish issues of regularity and normativity of ordinary interactions. Applying the same principles of comparability with longitudinal data collection and analysis provides an emic perspective on how participants within and across communities develop practices for social action over time.

In the following section, I will outline the data used in this thesis, how the data was collected, and describe how I have arrived at building my longitudinal collections through observing, transcribing, and analyzing the data.

3.2 Data & Context

3.2.1 Research Terrain & Data Collection

The data comes from a physics laboratory in the French-speaking region of Switzerland that produces ultrafast, femtosecond lasers and the associated technical materials which allow their production. The image in the figure below shows an overview of the setup:

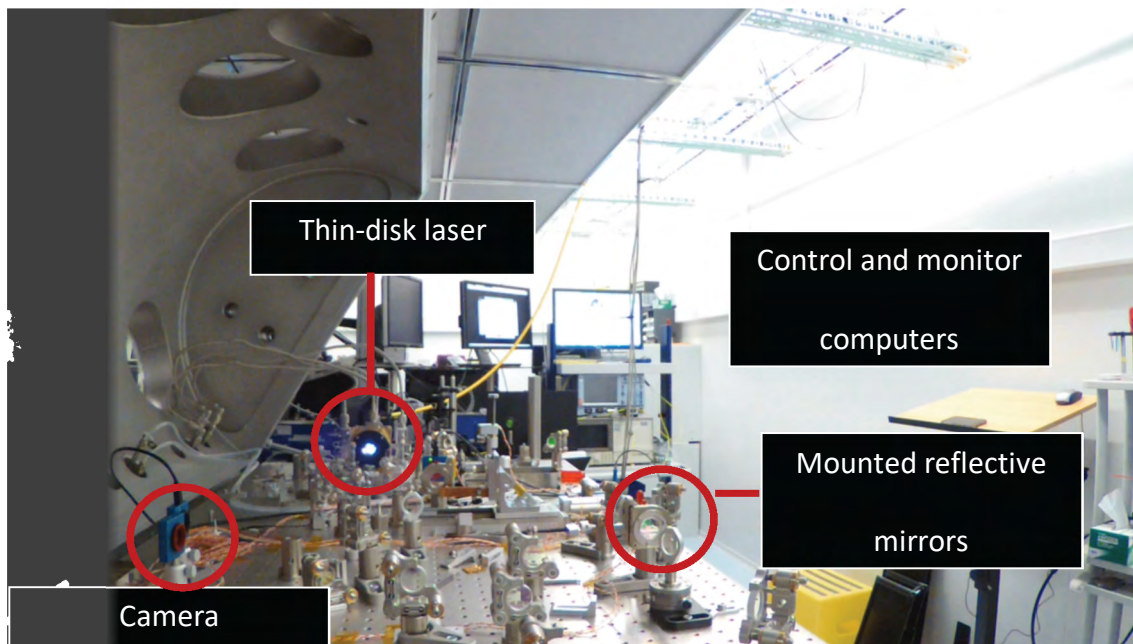


Figure 1 - View of a tabletop laser

The above image shows a tabletop laser. In the image, a variety of technical objects can be seen. First, there is a thin-disk laser which acts as a light source for the initial laser beam. This beam is pumped through a variety of mirrors which create multiple reflections of the beam and create various beams which travel back and forth through the optical mirrors on the table. The mirrors may be curved or specially coated with materials to reduce or increase reflectivity or to angle the beam. Each mirror is mounted on a metal substrate which is clamped down and secured on the table using screws. Other technical items are often installed to take various measurements of the laser including its beam size(s), pulse rate, and pulse durations. An example of this is the camera highlighted in figure 1 above. This camera takes in the laser beam

and projects the images on the computers (allowing participants to observe how the laser behaves as well as its output and power).

The tabletop laser is built incrementally by installing various mirrors at precise distances. The participants then check that the laser aligns correctly through the mirrors using infrared viewers and viewing cards (figure 2).

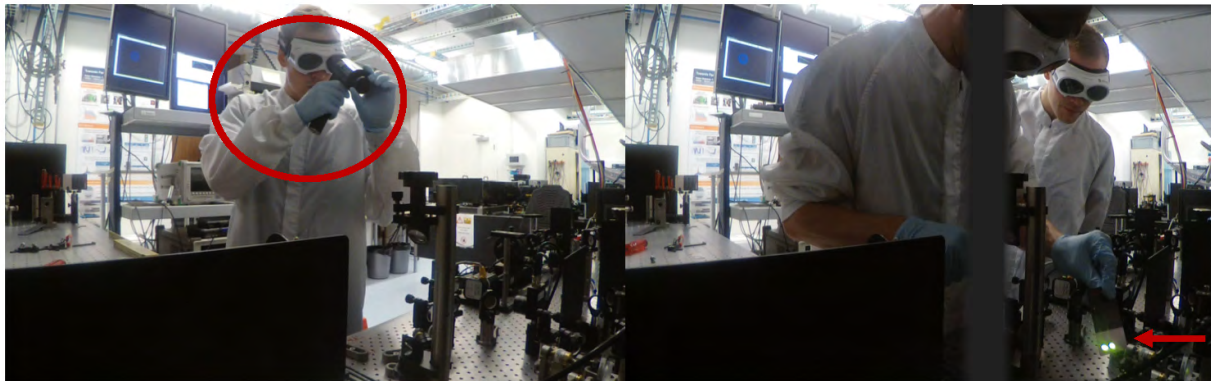


Figure 2 - Using an infrared viewer (left) and viewing card (right) to align the laser

The participants spend weeks building up the tabletop lasers seen above. During this process, they go through various iterations of testing the laser, recording measurements, adjusting the mirrors and alignment, and re-recording while troubleshooting numerous unexpected problems. In the analytical chapters that follow, I will outline the specificities of the actions that occur in the extracts to provide the reader with an understanding of the tasks at hand.

My initial interest in this study was to collect data on an L2 speaker of English working as a ‘newcomer’ in an institutional environment (see Chapter 2 for further discussion of L2-IC, SLS studies, and institutional interactions). My focal participant, Julius, was an incoming Ph.D. researcher working in the lab, and I was able to begin collecting on his first day of laboratory work. Before Julius began his research, I had meetings with the head of the laboratory to discuss my research project, methods, and objectives. This was followed by a meeting with the members of the team, where I pitched the project and explained the details of the data collection, recording processes, and research interest. I had contact with the focal participant, Julius, by email to discuss the project and data collection processes individually. The participants all consented to video recordings that were to be conducted in the lab. The image below represents the spatial organization of various rooms and laboratories within the department.

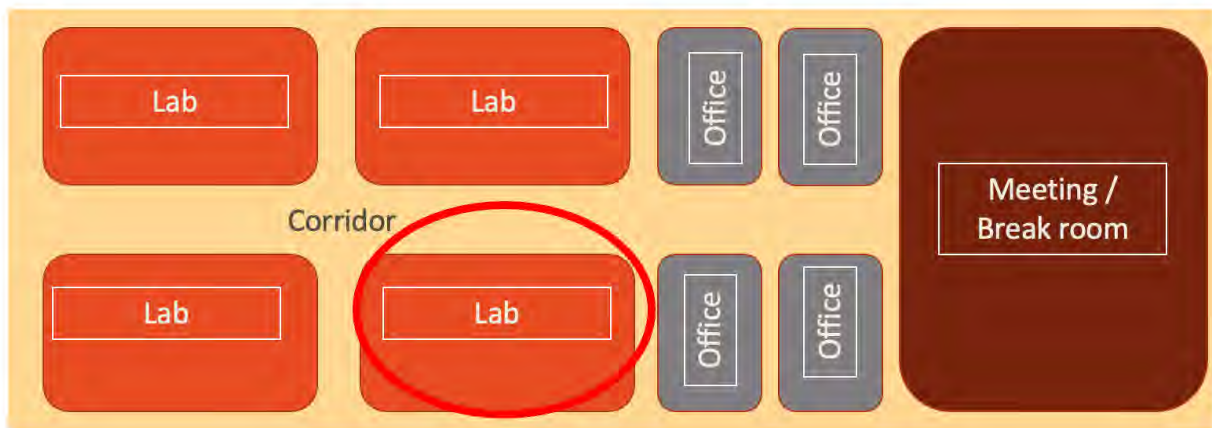


Figure 3 – Setup of the laboratory

There are multiple laboratories within the department where participants work on various projects, corridors, office spaces, and meeting spaces (figure 3). Initially, I wanted to carry out recordings in the office spaces to collect what I observed as the kind of ordinary, everyday conversations lab members had while chatting in the office. However, the participants did not consent to this for two reasons. First, the participants were concerned that their office discussions might be more ‘topically sensitive’ and capture sensitive information on their personal and work computers, such as email or social media. Second, because the use of professional and personal computers was common in the laboratory, many participants had concerns that personal information from their screens might be captured as part of the recording process. Finally, there were concerns that the ongoing cameras would distract from moments of work that demand concentration, such as writing for papers and publications. In the end, we agreed to do recordings in the laboratory.

I had two tours of the laboratory with members of the team prior to conducting recordings to survey the laboratory (and several others later) and the materials and learn about the research conducted and how the participants carried it out. Two fixed cameras were installed in the laboratory where Julius would start working. These cameras were participant-controlled, meaning Julius could turn them on and off as he went about his workday. Figure Figure 4 shows the two separate cameras and their respective views.

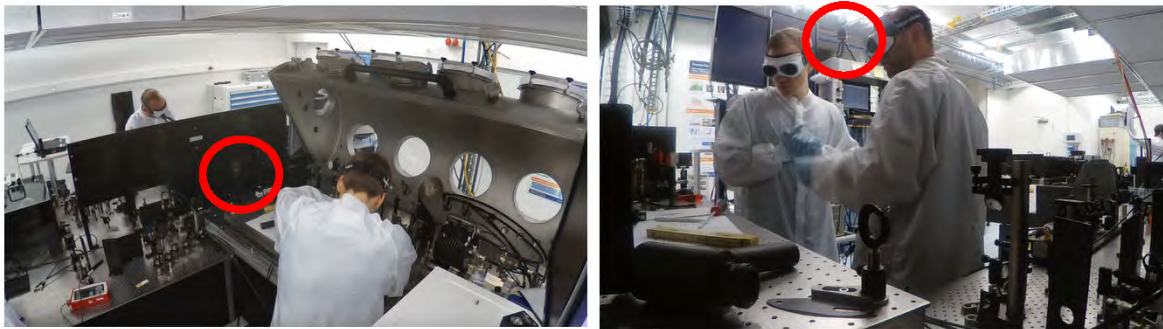


Figure 4 – Camera views of the laboratory with cameras circled in red

I found in the process of recordings that there were multiple advantages and disadvantages to this particular method of collecting video data, many of which were constrained by the local ecology of the lab itself. Having fixed cameras seemed to mitigate some initial concerns participants had with being observed and recorded. In my discussion with the participants, they expressed that giving them control over the cameras, and the ability to turn them off, if necessary, seemed to ameliorate these concerns further. I did not, however, observe in any of my data that they ever turned the cameras off due to sensitive issues.

Secondly, participants work in a compact physical space densely packed with many technical objects and materials. I observed in the data that the physical space becomes an issue for participants in managing the participation and conduction of manual actions, and adding an extra body (i.e., the researcher) would present additional problems to the participants' ability to move freely throughout the lab. Moreover, the hours spent working in the laboratory are long and occasionally unpredictable. In the data, I note that participants typically work for periods as short as two or three hours, with some days lasting over eight. The hours working in the laboratory do not always start at a fixed time, as would be the case in other institutional environments where participants work shifts. Laboratory work is often punctuated by various contingencies as well. Lunch, coffee breaks, and other duties required participants to leave and resume work somewhat sporadically. There were issues such as construction in the laboratory, which prevented any recordings from being conducted from January to February of 2019, or technical problems occurring from October 6th to October 9th, which resulted in minor disturbances in the laboratory work.

Fixed participant-controlled cameras allowed for the intensive collection of audio-video recordings to be conducted longitudinally. I captured full days of laboratory work, from start to finish, from October 30th, 2018, to September 3rd, 2019.

However, by not being present in the laboratory, I could not follow participants on occasions where they moved and interacted outside of the camera's view, resulting in limited visual and auditory access to the participant's work. It also meant I could not fully capture discussions about work that might arise in office discussions, team meetings, lunches, or unscheduled interactions in corridors.

Intensive data collection of the laboratory interactions and the manual production of the participants' experimental setup provided the opportunity to trace the historicity of the production of laboratory work and how participants solve these problems over hours, days, or even longer stretches of time. Garfinkel, Lynch & Livingston's (1981) work on how two astrophysicists 'discover' an optical pulsar showed how scientific discoveries often have characteristics of a 'first time through' whose characteristic as a discovery is only achieved through the 'historicity of runs' and therefore a progressive, longitudinal accomplishment.

3.2.3 Participants

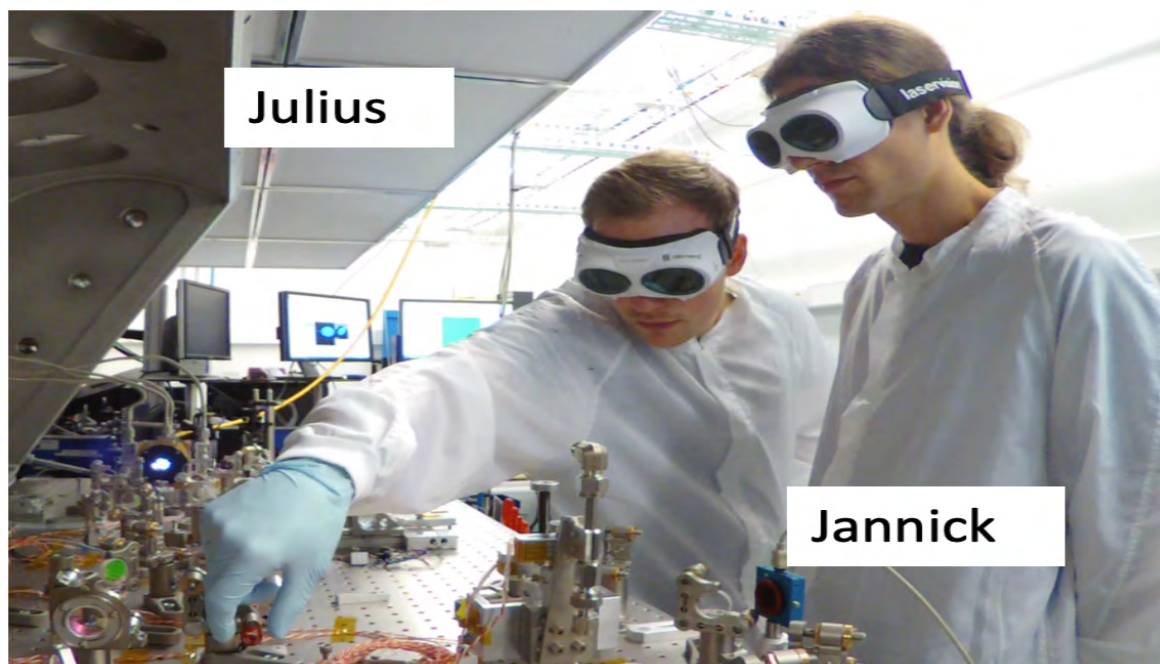


Figure 5 – Focal participants in the data

The physics laboratory where the data was collected consists of several departments with individual research foci. Within the laboratory where I collected data, 7 participants appeared in my data, as seen in table 1 below.

Table 1 - Participants

Participant	Role	Language
Julius	PhD Student	First language: German
Jannick	PhD Student	First Language: Unknown
Norman	Postdoctoral Researcher	First Language: German Other languages spoken: English, French
Tobias	Head of Department	First Language: German Other languages spoken: English, French
Guillaume	Postdoctoral Researcher	First Language: French
Victor	Senior Researcher	First language: unknown Language spoken: English, German, Russian
Martin	Postdoctoral Researcher	First Language: Unknown

The participants interact in the laboratory at varying levels of frequency and consistency. For example, the head of the department, Tobias, and one of the postdoctoral researchers, Martin, only work in the laboratory on one or two occasions. Two other postdoctoral researchers, Norman and Guillaume, are frequently in the data but often working on separate projects in parallel with Julius, and so interactions are sporadic. In addition, Norman and Julius work together and interact on several days and they typically speak in German.

The focal participant in the data is Julius. Julius was an incoming Ph.D researcher at the time of the data collection. He speaks English as an L2. I collected data on Julius' first workday in the lab (October 29th, 2018).

Julius worked on three separate projects during the data collection. He began building the first project on his first day, October 30th, 2018, with the assistance and collaboration of a colleague. The first day Julius and Jannick work together is November 2nd, 2018. This project lasted until February 9th, 2019, when it was ultimately abandoned. Julius then began working on a second project from March 5th, 2019, to July 7th, 2019 on which he mostly worked alone. Finally, he worked on a third project from June 25th to September 3rd, 2019, which Jannick returned to collaborate on.

Typically, the team members work on projects remaining in their respective labs for lengthy periods, ranging from several weeks to months. They, therefore, often work closely with the

same participants collaboratively on the same projects, or in parallel on separate projects in the same space. Julius worked with eight other participants in total in the laboratory. He worked most frequently and intensively with two other participants, Norman, a post-doctoral researcher, and Jannick, a fellow Ph.D. researcher. Both Norman and Jannick are present on Julius' first days of work. Julius typically speaks German with Norman in their interactions as it is their shared first language, and English with Jannick and typically (but not always) in cases where both Jannick and Norman are present.

Julius worked on three separate projects during the data collection. He began building the first project on his first day, October 30th, 2018, with the assistance of Norman. The first day Julius and Jannick work together is November 2nd, 2018, 2 days after Julius has begun working on the project. This project lasted until February 9th 2019, when it was ultimately abandoned. Julius then began working on a second project from March 5th, 2019, to July 7th, 2019 on which he mostly worked alone. Finally, he worked on a third project from July 25th to September 3rd, 2019, which Jannick returned to collaborate on.

The recordings spanned from October 30th, 2018, to September 3rd, 2019, and comprise in total 43 days of recording and 196 hours of recorded data (see table 2 below).

Table 2 – Overview of dates of recording and total hours of data collected

Dates	Total days collected	Total hours of recorded data
October 30 th 2018 – September 3 rd , 2019	43 days of recording	196

Over the span of approximately just over one year, I collected 196 hours, with recordings taking place on 43 days. However, it is important to note that the data is not all interactional. On some of the days that I collected data, Julius worked in the lab in isolation. Others have much more sporadic interactions—a few minutes of talk over the course of several hours—and even when working with others, there are periods where participants work silently on individual projects though remaining in a constant incipient state of talk (Schegloff, 2007).

To narrow the focus of the data, I have organized the collection building around two data sets in the corpus: an 'early data set' (the first project) and a 'later data set' (the second project; approximately eight months later). For an early data set, I have focused on the first day Jannick and Julius worked together (November 2nd, 2018) through the following weeks, focusing

specifically on the first six days. Tables 3 and 4 shows an overview of the dates of data collection, participants involved in the data, and the hours recorded.

Table 3 - Overview of Julius and Jannick's first project, early data set.

Dates	Total days collected	Total hours of recorded data
November 2nd, 2018	Julius, Jannick, & Norman	9 hours, 23 minutes
November 6 th , 2018	Julius, Jannick, & Norman	4 hours, 13 minutes
November 7 th , 2018	Julius, Jannick, & Norman	6 hours, 49 minutes
November 8 th , 2018	Julius, Jannick	5 hours, 53 minutes
November 9 th , 2018	Julius, Jannick	6 hours, 30 minutes
November 10 th , 2018	Julius, Jannick	4 hours, 23 minutes
Total days: 6		Total hours: 37 hours, 11 minutes

Table 4 - Overview of Julius and Jannick's first project, later data set.

Dates	Participants	Total hours of recorded data
July 25 th , 2019	Jannick & Julius	2 hours, 54 minutes
July 26 th , 2019	Jannick & Julius	3 hours, 29 minutes
July 27 th , 2019	Jannick & Julius	1 hour, 35 minutes
August 8 th , 2019	Jannick & Julius	1 hour, 31 minutes
August 9th, 2019	Jannick & Julius	33 minutes
September 03, 2019	Jannick & Julius	3 hours, 24 minutes
Total days: 6		Total hours: 13 hours, 26 minutes

For the first step in building collections, I relied on ‘unmotivated looking’ (ten Have, 1999). My ethnographic work and discussions with the lab members helped inform me of possible analytical foci, but as a newcomer to the field of high harmonic generation and ultrafast lasers, it was necessary to engage in repeated viewings of and transcriptions of the data to look for recurring practical problems. Perhaps the most pervasive feature of the data, which I noticed early on, was how much participants seemed to verbally articulate or comment on their own manual actions or the actions of others. From here, I began building a collection of so-called directive commissive actions (Couper-Kuhlen, 2014) where some verbal comment by one participant leads to either (1) one of the participants performing the action nominated by the turn or (2) one of the co-participants resisting the action (or some aspect of it) nominated by

the comment. Later, I revised this categorization, no longer examining directive commissive actions but instead focusing on actions that have been similarly described in Stevanovic & Monzoni's (2016) work on **activity management moves**.

In this admittedly very rudimentary first step of collection building, I established 620 cases of **activity management moves**, where one participant somehow verbally comments on their own or other actions resulting in a trajectory of manual action, as described above.

Tables 5 and 6 below display the distribution of the activity management moves found in the first project (early data set) and the second project (late data set). I have only included **activity management moves** that are performed by the focal participants, Julius and Jannick.

Table 5 - Activity management moves in the first project

First project: Julius and Jannick	
Date of recording	Number of activity management moves
November 2 nd 2018	61
November 6 th 2018	33
November 7 th	26
November 8 th	113
November 9 th	111
November 10 th	61
	Total = 405

Table 6 - Activity management moves in the second project

Second Project: Julius and Jannick	
Date of recording	Number of activity management moves
July 26 th 2019	19
July 25 th 2019	59
July 27 th 2019	18
August 8 th 2019	44
August 9 th 2019	19
September 3 rd 2019	56
	Total = 215

While this is a rather large data set, I remain cautious in attempting to categorize each of these moves as doing a particular action. Using next turn proof procedure, I have determined that these cases adequately meet the requirements of managing the participants' shared activities, either their own individual actions or those of a recipient. Yet, the precise actions (such as *requests* or *advice*) remain to be defined (see Chapter 7 for further discussion). Indeed, the difficulty of action formation and ascription has long been a challenge for conversation analysts. Rather than attempting to classify moves in a 'binning procedure' (Enfield & Sidnell, 2017), I have instead approached these **activity management moves** by looking at their sequential position not only within talk but within upcoming or ongoing embodied courses of action. From this point, I have collected three patterns of activity management moves that occur in particular interactional constellations, which I describe below.

In **chapter 4**, I discuss how participants **formulate** and **initiate next courses of action** in laboratory work. I delimit these extracts to instances where one participant, using both verbal and embodied resources, formulates a next course of action to be taken which is then carried out by either the speaker or recipient. This chapter the overall structural organization of these moves, the practices participants employed for accomplishing them, how they work to manage the delegation of responsibility within the joint action, and the participants' displays of **deontic stance**. The chapter takes a longitudinal perspective, analyzing how these practices change over time.

In **chapter 5**, I analyze how participants display **resistance** to a co-participant's **activity management moves**. I operationalize **resistance** by looking at instances where one participant's turn makes conditionally relevant a not-yet-begun embodied course of action by the recipient, and the recipient disagrees and/or engages in non-compliant moves. This chapter looks at the overall structural organization of displaying resistance, participants' practices for resisting, and how these practices for managing **resistance** and deontic stance within joint courses of action change over time.

In **chapter 6**, I analyze how participants work to **alter a recipient's ongoing course of action**. More specifically, this chapter explores the articulation between interactional histories and longitudinal change by looking at how participants manage a recipient's non-compliance through successively upgraded proposals within smaller stretches of interactions. This chapter then discusses how the participants' interactional histories might lead to stabilized practices over time.

I have chosen to focus my analysis on Julius and Jannick's interactions in this thesis. On the one hand, this was an outcome of the data and local ecology of the work processes in the laboratory; Jannick and Julius worked together most frequently and consistently over the course of the data collection. Focusing on two participants also provides interesting insights into the situated and interactional accomplishment of what other researchers have described as the epistemic cultures of various scientific domains (Knorr-Cetina, 1999) and the observations of the production of scientific knowledge and facts through their interactions with scientific materials (Amman & Knorr-Cetina, 1988; Knorr-Cetina, 1981; Latour & Woolgar, 1979) in a way that has been still under-explored (but see Garfinkel, Lynch & Livingston, 1981; Goodwin, 1994; Koschmann & Zemel, 2009; Tuncer & Haddington, 2019). In line with Garfinkel, Lynch & Livingston (1981) and Koschmann & Zemel (2009), following participant collaboration on a scientific project provides insights into the historically situated, occasioned productions of scientific work. In the same way in which Sacks' tapes could be played for repeated viewings, having longitudinal access to spates of interaction stretched across the days and weeks in which participants build and collaborate on sustained projects allows a retrospective retracing of the occasioned production of scientific work related to the participants' shared *common ground* (Clark, 1996) and their routine ways of engaging in joint actions together.

Returning to the above discussion on longitudinal collection building and warrantable comparability, I now discuss what I have chosen to analyze in the thesis, how my observations and initial analytical steps have informed and reshaped these collections, and my choices in transcribing and re-presenting the data.

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3.2.3 Identifying and building longitudinal collections

The data is indeed complex and puzzling. To quote Latour (1999)

[S]cientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become. (p. 304)

In other words, for the outside observer, initial viewings of the data can be opaque, if not outright incomprehensible. As I began viewing the data, I noticed a recurring peculiarity of the data. That is, the participants seemed to be in an ongoing state of incipient talk (Sacks & Schegloff, 1973; Schegloff, 2007), sometimes with one participant performing a variety of actions silently while the other observes or stands to the side. In other cases, the participants worked on separate tasks related to the project in parallel. And often, the participants engaged in accomplishing tasks together. What was striking to me was that the involvement in tasks seemed to be in a constant state of flux; one participant might start on a task that was then intervened in by a co-participant. The puzzle in my observations led me to question whether participant utterances were in a kind of non-linguistic 'doing,' speaking their private thoughts aloud (Goffman, 1981) or somehow initiating a new sequence. An example follows below.

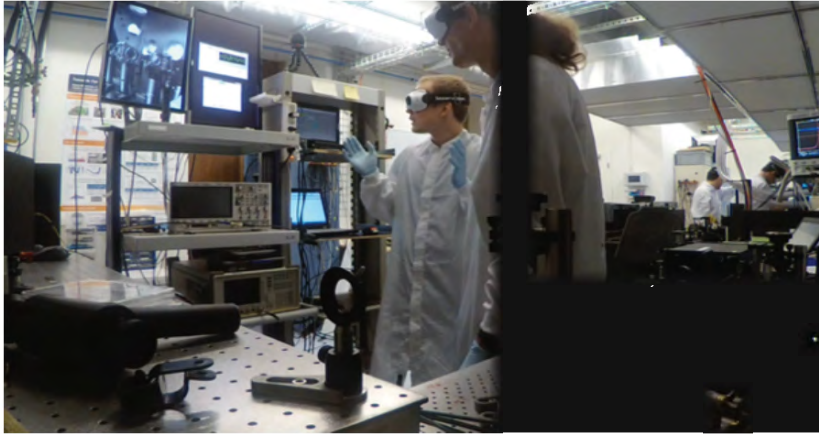
Extract_1

1	JUL	okay then $\alpha(0.25)\alpha(0.25)\#lasers$ <u>off</u>.
	A Jul	->stepping forward->

```

B Jul          %raises both arms to side palms inward%
C Jul          +looks to monitor
D Jan          -> $\alpha$ looks to monitor $\alpha$ ->
E Jul          -> $\zeta$ stops->
F Fig          #fig.1

```



2 (0.8)

3 *Figure 1* JAN $y\alpha s\alpha\#.$

```

A Jan           $\alpha$ looks to table $\alpha$ ->
B Fig          #fig1.2

```

4 JUL **next% cha%#nge +th ζ e mirror+?**

```

A Jul          ->%point both hands%->
B Jul          +looks to JAN+looks at feet->
C Jan          -> $\zeta$ walking to table->
D Fig          #fig.2

```



Figure 2

5	JAN	+mmhm+
	A Jan	+nods+
6	(3.0)	(0.6)∞(0.6)∞ζ(0.1)%ζ(1.1)%ζ∞(0.6)#
	A Jul	,,,,,,,,,ζstops-ζleans over tableζ
	B Jan	∞turns∞-stops-----∞leaning over table->
	C Jul	%reaches for sd%grabs%>reaching->
	D Fig	#fig3



Figure 3

In line 1 Julius initiates a turn at talk which co-occurs with an array of embodied conduct; he takes a step forward (1.1a) raises both hands to about shoulder height (1.1b), briefly stops and looks to the monitors (1.1c) and after a 0.5 second pause, resumes his talk with a fragment ‘lasers off’ and slight rising intonation. In 1.2, there is an 0.8-second pause. Then Jannick, who at this point is standing to the side and has only briefly glanced at the monitors (1.1d) utters ‘yes’ (1.3). In line 4, Julius takes another turn which is possibly hearable as an action (change the mirror) within a sequence of events (next). During this utterance Julius alters the position of his hands as if pointing toward the table in front of him (1.4a) looking to Jannick and then to his feet (1.4b) as he begins moving toward the table. Jannick responds again, but minimally (1.5) while nodding (1.5b). Julius continues moving to the table in 1.6 where he stops (1.6a), reaches for a screwdriver (1.6c) and begins removing a mirror which has been mounted to the table. Jannick approaches the table, stops and leans over as if observing (1.6b).

I hope this is an adequate illustration of Latour's 'black-boxing'. Certainly, a variety of questions can be raised regarding the extract here. What is the turn in line 1 doing? Is Julius

asking or declaring the laser to be off? In line 4 is Julius announcing, proposing, asking, or claiming the action of ‘changing the mirror’? The glance at Jannick and rising intonation at the end of the turn (1.4) suggest that Julius might be doing some kind of ‘asking’, as does Jannick’s affirming response in line 5. Yet, in the multimodal conduct described in the analysis, it seems that Julius is already preparing to change the mirror by stepping forward, raising his hands, pointing and walking to the table. And we see that in line 6 Julius changes the mirror while Jannick’s involvement seems limited to confirming and observing.

So, why all of that now? Using multimodal transcription as part of my analytical procedure, I aim to uncover the systematic ways in which participants coordinate multiple modalities to initiate a next action (as Julius does in 1.4) to secure an adequate subsequent response (Levinson 2013) from their co-participant and then proceed with carrying out the action (1.6). Additionally, I also observed that what happens in the interim between proposing and carrying out a course of action between both participants is not straightforward. One participant may propose a course of action and then carry out that action himself. Alternatively, one participant may propose a course of action and then request their co-participant to carry out a task related to that action. In other instances, a participant may propose a course of action met with disagreement and disalignment from their co-participant. The semiotic resources participants use to do this involve the calibration of talk, gesture, moving bodies, and object manipulation across,

By utilizing Mondada’s (2018c) system for the notation of multimodal conduct with embedded images in the transcripts, I also attempt to provide the reader with an overview of how the participants’ embodied conduct is recalibrated over the course of these sequences. I opt for a top-bottom display of these images over Laurier’s (2014) comic book grammar, but with the same goal in mind, to guide the reader to see the mobile and material nature of these interactions as it unfolds with the transcript. In my observations of the data, and as I will argue in the upcoming chapters, this kind of interaction is routine among the participants but comes with various incremental, emergent, and contingently responsive adoptions (Suchmann 1987) which are displayed through various sequential and synchronous levels of temporal organization; for example, proposing an action while already visibly and projectively moving into that course of action as opposed to proposing an action while remaining relatively static. Such organizations of action result in complex multimodal gestalts (Mondada 2014a, 2014b; Stukenbrock 2018,

2021) which in their emergence ultimately determine who will carry out a course of action that has not been verbally designated within a turn at talk (Zinken & Ogiermann 2011).

3.3.4 Building Collections

In my observations of the data, I found many interactions which progressed in a similar way to the extract above. Such interactions are the basis for the collections in this thesis. I drew examples from the two data sets described above and focused on how Julius coordinates such actions in the first days of working, and how he does so in the second data set, several months later. What initially interested me was how to describe what participants were doing from a perspective of action formation: In the collection I built I ask whether these are ways of self-nominating, announcing or informing another of an upcoming action, or ways of requesting permission or proposing possible decisions to be made. Given the complex, embodied nature of the actions I observed that there were various levels of organization in terms of how the proposals are responded to and who carries out the action nominated. I have therefore narrowed the phenomenon in this data to look at how Julius accomplishes the following actions listed below. In doing so, I have achieved a natural control of the same participants doing the same routine actions.

In the following analytical chapters, I further describe the focal phenomena of interest and the longitudinal collections I have built. In chapter 4, I focus on proposals that initiate next courses of action, as seen in the extract above. I focus on how these proposal sequences are initiated in a recipient-designed way that projects possible changes to the participation framework in terms of the verbal and co-occurring embodied conduct, and how participants respond to these actions in ways that align with the upcoming action. In Chapter 5, I look at instances where similar proposal sequences are initiated but the participant resists the upcoming course of action, and the ways in which these resisting responses are produced to delay, alter, or takeover the forthcoming action. In Chapter 6 I look more specifically at how particular grammatical formats emerge from these initial encounters and become routinized ways of smoothly achieving proposing or resisting moves in different sequentially positioned contexts.

Chapter 4. A longitudinal study on initiating joint courses in the laboratory

This chapter addresses the following research questions:

RQ 1 How do newly acquainted co-workers manage the delegation of responsibility and deontic entitlements in joint courses of action, over time?

- What is the overall structural organization for initiating and engaging in joint courses of action?
- What are the verbal and multimodal practices for initiating and carrying out joint courses of action? How are they organized synchronously and successively?
- How do participant methods for managing deontic authority interrelate with processes of socialization?

I address these questions from a longitudinal perspective by analyzing how Julius initiates next courses of action in laboratory work through verbal, embodied, and material resources. I focus on how these resources are assembled and calibrated at various moments within the proposal sequence and how this relates to Julius' development of interactional competence and management of *relative deontic authority*, over time.

This chapter aims to investigate how Julius and Jannick initiate and respond to proposed next courses of action when collaborating in laboratory work. The chapter considers first how initiating moves are grammatically formatted to index the varying circumstances under which a next course of action is made relevant here and now and the co-participant's varying degrees of responsibility and involvement in confirming or disconfirming the proposal. Secondly, it investigates the embodied and multimodal conduct co-occurring with the proposals and how they are synchronously and successively organized to create transitions at activity junctures and involve co-participants by involving their participation in physical actions. In a third step, the chapter discusses how these proposals implicate the *jointness* of next actions and how they establish relevancies for precisely who may carry out the course of action nominated by the proposal.

Additionally, this chapter analyses proposals from a *longitudinal perspective*. The focus is on Julius developing *routines* for initiating and proposing manual courses of action. In this part, attention is paid to how proposals are done in the first days of the focal participants' working

together compared with a later data set where they begin to work together on a second project (as discussed in Ch. 3). Comparison of proposal sequences in the two data sets, with close attention to the grammatical, sequential, and multimodal conduct of participants and the three characteristics listed above, reveals that, over time, proposals become diversified to accomplish a range of actions from doing proposals as a way of confirming a joint action, to delegating responsibilities to interlocutors, and then, later to informing sequences.

4.1. Analysis the first day: the trajectory from unilateral courses of action to initiating joint courses of action

Extracts 1 and 2 look at how Julius formulates next courses of action on his first day working with Jannick. The excerpts come from Julius and Jannick's first day working together, November 2nd, 2018. Julius had been working on the project for two days, assisted by Norman. Jannick arrives on November 2nd at approximately 15:49. The first extract occurs after Jannick has approached the table and Julius has been explaining the setup of the mirrors on the table. Jannick asks Julius to specify which mirrors on the table are curved and which are reflective mirrors as it is typically not visible to see by examining the table.

The first instance of Jannick and Julius engaging in manual lab work shows two phenomena of interest. First, Julius carries out a course of action to adjust mirrors on the table unilaterally, and Jannick observes. Julius provides minimal verbal formulation of the action (l.11) he is doing without explicit notification of his forthcoming action. Second, Jannick offers a piece of advice thereby rearranging the participation framework, but he does so tentatively. Julius' response to the advice comes after a very significant delay (l.14)

Extract_1_Nov_2_2018

```

1  JAN:      do we have somewhere curved mirror?
2  JUL:      here.
3  JAN:      this one is curved.
4  JAN:      and that's the END mirror.
5  JUL:      yeahp.
6  JAN:      nice.
7  JAN:      °°I see.°°
8  (1.7)
9  JUL:      the c(h)avit(h)y.
10 (1.2)     *(1.2)
    A Jul     *takes elbow off table, leans over table->
11 JUL:→     %SO:,#
    A Jul →   %...extending right hand->
    B Fig     #Fig.1

```



Figure 1

12 (29.1) (1.0)%±(4.1)α#(20.0)α(1.5)α(3.0)
 A Jul%adjusting mirror->
 B Jul ±extends left hand to table->>
 C Jan αsteps back, looking around
 D Jan αobserving Julius
 E Jan αpivots slightly, raises index finger->
 F Jan αsteps fwd to table->
 G Fig #Fig.8



Figure 2

13 JAN: I show you αONE trick.
 A Jan ----->αturns walking away->
 14 (126.0) ((Julius continues adjusting the mirrors))
 ((Jannick approaches))
 15 JAN: what is your beam height.
 16 JAN: ((inaudible))
 17 (7.8) (5.8)*%(2.0)
 A Jul ---->*steps back from table, looks to JAN

B Jul ----->%holds left arm and screwdriver suspended->
 18 JAN: so.
 19 JAN: one tr↑ick (1.3) from () heh heh heh.
 20 JAN: for BEAM HEIGHT%÷.
 A Jul ->%rests left arm on table->>
 B Jan ->÷holds tool up->>
 21 JAN: sometimes really cool those little tools.
 22 JAN: what's your- what's your BEAM height.
 23 JUL: uh::
 24 JAN: can I check here?
 25 JUL: yeah sure.
 26 JUL: yes.

As the discussion reaches a projectable close with Jannick's acknowledgments and assessments (1.6-7), Julius initiates a course of action, namely, adjusting the mirrors on the table using a screwdriver. In line (10-10a) he turns from Jannick and begins reaching his hands into the table (1.10a-11a). He does not provide a verbal description of the action he is engaging in. The action is marked verbally using a single standalone TCU *so*, with heightened volume and extended pronunciation. This occurs for 29.1 seconds (1.13). Julius adjusts the mirrors, and Jannick stands back as if observing Julius' work (1.13d) but occasionally ambling back and forth (1.12c). Then, Jannick pivots his posture as if looking around with his right index finger as if searching (1.12e) steps forward to the table and utters a declarative statement in (1.13) naming that he will show Julius some possible, but yet-to-be-defined action (*one trick*). Jannick walks off to gather an instrument, and Julius continues working (1.14). Jannick returns with the tool in his hand asks Julius an interrogative question (1.16) which is not responded to verbally or embodied (1.18, Julius continues working). When Julius steps back from the table (1.18a) displaying suspension or completion of his manual action, Jannick resumes his project of showing Julius his 'trick' (1.20). Jannick uses incremental phrasing to engage in the instructive display; first the prepositional phrase (1.21) followed by an assessment (1.23), then a reformulation of the question *what is your beam height* (1.24). At which point Julius steps back, rests his arm on the table and allows Jannick access to the laser (1.20).

The structural organization of engaging in next courses of action in this "very first time" (Deppermann & Pekarek Doehler, 2021) shows how Jannick and Julius organize courses of action within their first few days working together (the early data set). Julius initiates and unilaterally carries out a course of action while Jannick mostly observes and only intervenes later in the activity. How Julius initiates the action of adjusting the mirrors resonates with Stevaonivc & Monzoni's (2016) findings that when participants engage in relatively complex

activities, initiating relatively complex embodied actions can be done through embodied behaviors alone (p. 18). However, in contrast to these findings, Julius does provide *some* verbal articulation corresponding with his embodied conduct that he is engaging in a next course of action through his *so* in line 11. The organization of how Julius initiates the course of action, and the distribution of the responsibilities in the participation framework indicate that (1) Julius has high deontic authority in determining his own actions (XXX)

Supporting evidence for this claim comes in Jannick's responses. He does not display any Jannick makes visible and hearable that his project is within Julius' epistemic, deontic, and overall "territories of the self" (Goffmann, 1979) as described by Deppermann & Gubina (2021) through the use of modal verbs indicating low epistemic status to the project (l.15, 22)(Heritage, 2012).

This extract shows that in the very first moments of Jannick and Julius working together, both embody an orientation to the project and the manual work to be carried out to accomplish it as being within Julius' deontic and epistemic domain. By not providing a verbal description of the action he carries out, Julius treats his actions to be taken without seeking confirmation or involvement from Jannick, and thus displays high deontic rights in controlling what goes on with the laser. Similarly, Jannick's intervention by proposing a 'trick' and engaging Julius in an instructional demonstration comes late in the sequence (l.12). When Jannick does propose a possible intervention, Julius does not suspend his course of action or respond. Furthermore, Jannick waits until he displays availability to relaunch the instructive sequence. As he does, Jannick further orients to the work as being in Julius' domain by formulating his question in line 24 with the modal interrogative displaying a permissive orientation to make changes and adjustments to the materials on the table. Taking these features together, it seems the participants treat involving one another in their actions as a delicate interactional process.

A similar extract comes from the same day, just 20 minutes later. Jannick and Julius are discussing a problem with the alignment, and when the sequence closes, Julius begins carrying out a course of action.

Extract_2_Nov_2_2018

16 JAN: >yes yes yes< I see which means the disk is indeed little (.)
 17 JAN: [(crooked)
 18 JUL: [either you go this or this=
 19 JAN: =yeah.
 20 JUL: BUT [(.) not the same direction.=

21 JAN: [>yes yes yes.<
22 JAN: mmhm.
23 JAN: yeah.
24 JAN: ye[ah.
25 JUL: [its not possible.
26 (0.9)
27 JUL: at L(h)EAST(h) for M(h)E so.
28 (0.8)
29 JAN: yeah it makes sense I was expecting this is the: *(0.5)
A Jul *places item
on table
30 JAN: the ca[se.
31 JUL:→ [SOO.
32 (1.2) *(1.2)*
A Jul → *.....*grabs card
33 JUL:→ so the* last ∅iris now¿
A Jul *extending card to table, checking height->>
B Jan ∅leans torso, observing->>
34 (1.9)
35 JUL: because you weren't satisfied with the beam height¿=
36 JAN: =°mmhm°
37 JUL: °I check.°

The discussion of the thin disk comes to a close in line 25 with Julius' negative assessment of the laser's performance. Jannick has agreed with Julius' diagnosis through multiple confirming response tokens (l.19, 21, 23-24). Julius' negative assessment of his performance (l.25) makes a second assessment relevant (Pomerantz, 1984), and Jannick attempts to mitigate the self-deprecatory nature of Julius' assessment after notable lapses (l.26-28). Julius then reaches for the viewing card, the item he uses to measure the beam height, and begins the manual action just after the transition marker, *so* (l.31). According to Bolden (2009), *so* prefaced turns allow speakers to license (re)launching interactional projects. The standalone *so* in l.31, as Raymond (2004) argued, is deployed by speakers to mobilize a response by invoking an inferential upshot of prior turns. In examining lines 31-33, we see there is no verbal response from Jannick (l.32). Julius begins turning away from Jannick just after the standalone *so* (l.31), grabbing materials and preparing for a next course of action. He nominates a next course of action by recycling the standalone *so* into a *so*-prefaced turn (l.33) while beginning the action. Jannick leans in just after displaying an embodied orientation to observing Julius' action (l.33b). By commencing the action of checking the height of the mirrors with the card before verbally nominating the action, Julius, again, involves Jannick minimally. However, Julius's post-positioned *because* account claims Jannick's partial responsibility for making that action

relevant now. Julius then formulates the action as unilateral using the first-person pronoun and declarative structure *I check* (1.37).

These first two extracts, in which Julius pursues some manual course of action while working with Jannick, show a similar structural organization. After a spate of talk and discussion with Jannick, Julius initiates and carries out a unilateral course of action. The marker *so* in both extracts is the primary vocal indicator that formulates his next steps. In extract 1, he does not nominate any action. In extract 2, he nominates the action after starting it but verbally designs it as a unilateral action. Both participants orient to Julius' responsibility for carrying out the laboratory work with relatively low entitlements or responsibilities assigned to Jannick.

Taking extracts 1 and 2 above as departure points shows changes that occur on the first day and continue over the first days of Julius and Jannick working together. The following instances show how Julius begins to recipient design turns that initiate next courses of action as proposals for *joint* courses of action rather than unilateral ones. Furthermore, through his coordination of multimodal conduct as he formulates next steps, Julius designs his initiations to elicit responses and occasionally seek approval from Jannick. The two extracts in section 4.3 illustrate this diversification of practices.

4.2 Formulating next steps in the early data set: From unilateral to joint courses of action

The two extracts above show Julius' "first times through" in initiating next courses of action in the lab with a focus on the *structural organization* and embodied participation framework.

[Topic Close] + [Initiation of Manual Course of Action] + [Carries out course of action]

From these first two instances I observe an initial change in the *practices* Julius uses for initiating next steps in laboratory work. Namely, when initiating next steps in laboratory work Julius begins to verbally formulate his own actions as he engages in the embodied course of action or sometimes before engaging in the course of action. These verbal formulations will be described in the following illustrative extracts which I have chosen below.

Extract 3, comes after an extended sequence in which Julius and Jannick have been troubleshooting the laser which is not lasing. They have attributed the problem to a possible misalignment of one of the mirrors and so they have stopped the laser, changed several mirrors, and located the ones which were misaligned. Julius initiates the next course of action in lines 1 and 4.

Extract_3_Nov_8_2018

1 JUL okay th%e%+n; $\alpha(0.25)\alpha\zeta(0.25)$ #lasers off.
 A Jul ->stepping forward->
 B Jul %raises both arms to side palms inward%
 C Jul +looks to monitor
 D Jan -> α looks to monitor α ->
 E Jul -> ζ stops->
 F Fig #fig.1



Figure 1

2 (0.8)
 3 JAN y α es α #.
 A Jan α looks to table α ->
 B Fig #fig.2



Figure 2

4 JUL:→ next% cha%#nge +th ζ e mirror+?
 A Jul ->%point both hands%->
 B Jul +looks to JAN+looks at feet->
 C Jan -> ζ walking to table->
 D Fig #Fig.3



Figure 3

```

5      JAN      +mmhm+
      A Jan      +nods+
6      (3.0) →   (0.6) ∞% (0.6) ∞% (0.1) % (1.1) % (0.6) #
      A Jul      //,,,,,,çstops-çleans over tableç
      B Jan      ∞turns∞-stops-----∞leaning over table->
      C Jul      %reaches for sd%grabs%>reaching->
D Fig      #Fig.4

```



Figure 4 - Julius changing the mirror

In lines 1-5 Julius and Jannick collaboratively initiate a course of action. Julius formulates what prior steps have been taken (the laser is off, allowing them to change the mirrors, 1.1) which Jannick confirms verbally (1.3), and then Julius nominates a next action (1.4) which Jannick again confirms (1.5) and then in line 6 Julius begins the complex task of changing the mirror. At the **structural level**, this extract resembles extracts 1 and 2 above in that Julius initiates and carries out the course of action, and Jannick observes. However, the *resources* Julius uses for initiating the action are different.

Notably, in line 1 Julius' turn with *okay then*, followed by a 0.5-second pause at which point he steps away from the computer where he has been working. Next, Julius raises both hands

just above his shoulders with palms facing inward (fig1.1). He checks the computer monitors, which allow participants to both control and visualize the laser, and then confirms *lasers off* (1.1). Jannick responds with a confirming (1.3). Then Julius proposes the next action of changing the mirror (1.4) marking the end of the turn with high rising intonation. Jannick responds with a minimal confirmation (1.5), and Julius, who has already begun approaching the table (1.4c), reaches his hands toward the table and stops upon approaching. He then leans over and starts adjusting the mirror (1.6a,c), followed by Jannick, who approaches the table, leans over, and inspects Julius' work (1.6b).

In contrast to extracts 1 and 2, Julius recipient designs his proposal as a joint action in several ways. First, by inserting a checking or 'noticing' comment *lasers off* and waiting for a response from Jannick, which comes only after an 0.8-second pause, Julius works to establish 'common ground' regarding actions the participants have completed before beginning a next action, and their relevance for the upcoming one. The try-marked intonation (Sacks & Schegloff, 1979) at the end of line 1 works to mobilize a response from Jannick (Stivers & Rossano, 2010) while also "checking the grounds" for an incipient course of action. This not only works to notify Jannick of Julius' forthcoming action also to secure possible reciprocity for the upcoming action (see Pekarek Doehler, 2019 on checking the grounds in storytellings).

Close scrutiny of the embodied conduct shows how Julius designs this turn at talk of opening both hands and gesturing to the object and looking at Jannick (fig.1-3) Julius extends both hands, palms facing inward, at about shoulder level (1.1) the moves them forward in a double handed pointing gesture (fig. 2,3). The manner in which Julius raises his arms (fig.1), points to the table (fig.2) and begins reaching and moving toward the object (fig.3) works indexically to establish his role in the upcoming project to change the mirror (see Day & Wagner, 2014 for similar results on reaching for objects in conversation). By holding the gesture across multiple turns Julius orients to the need to achieve an intersubjective understanding with Jannick about the upcoming project (Sikveland & Ogden, 2012). Further evidence comes from the next-turn proof procedure in response to embodied conduct. Julius stops walking forward in 1.2, while checking the monitor where he can see if the laser is running (fig.1). He only resumes moving forward to the table after Jannick responds to this turn (1.2) and the notable pause in line 3. (1 The *deontic asymmetry* between Julius and Jannick is more evenly balanced in extract 3. Julius is the participant responsible for naming and carrying out the course of action, but he **recipient designs** the proposal to be heard as a possible joint action.

The ‘jointness’ of such a joint action may be called into question here as Julius is the one who performs the task of unscrewing the mirror. Yet, as the preceding analysis has shown, both participants orient to this as an action that is done together. The possibility of both Julius and Jannick reaching into the table, removing and replacing mirrors in tandem (compared to other tasks such as moving a large piece of furniture) is unlikely. Nevertheless, they coordinate their talk and embodied movements moving toward the table together and carrying the action out as a team with Julius designating and performing the action and Jannick observing.

This pattern of formulating next steps is relatively stable during the early data set (described in Chapter 3). Extract 4 is taken from November 9th, 2018 on the 6th day Julius and Jannick have been working together. Before the extract, Jannick and Julius are noting observations in an excel sheet using a laptop mounted on a shelf. Julius then departs from the computer and initiates a next course of action in lines 2-3, referring to a process of passive mode locking the laser is turned on and the individual beams are generated into ultrafast short pulses, by process of knocking some element (typically a screwdriver) on the table. Until now, the extracts have shown how Julius initiates and then carries out a course of action. In this extract we see how Jannick responds to the initiations by intervening in the action.

Extract_4_Nov_9_2018

```

1      (2.0)      (1.6) % (0.4) %
      A Jul      %.....%takes a step back from computer->

2      JUL:      ok↑ay, (0.2) th↑*en* %+(0.25)+(0.25)+#(0.5)%.
      A Jul      *...*looks up->
      B Jul      %turns left-----%stops->
      C Jul      ->hands on computer+,,,,,+.....+claps, holds->
      D Fig      #Fig.1

```

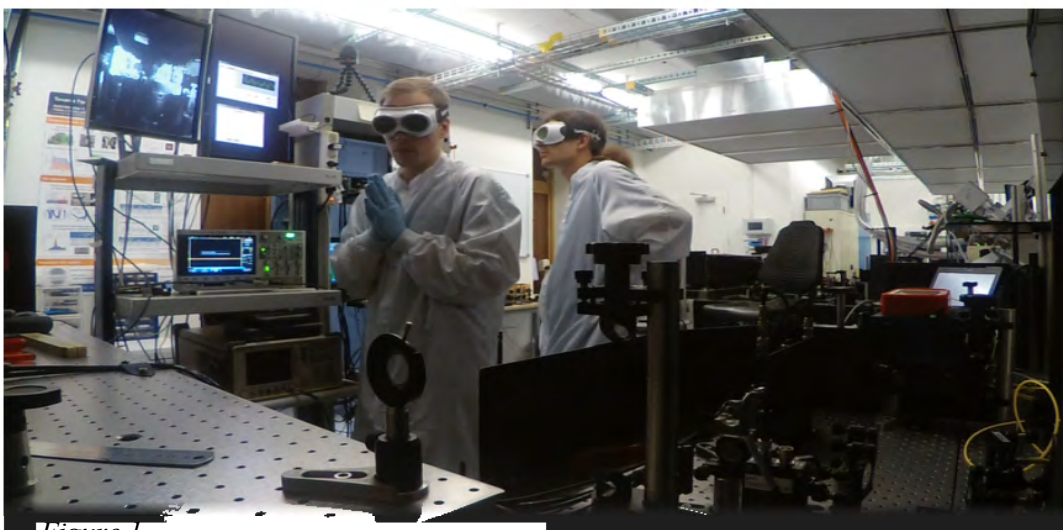
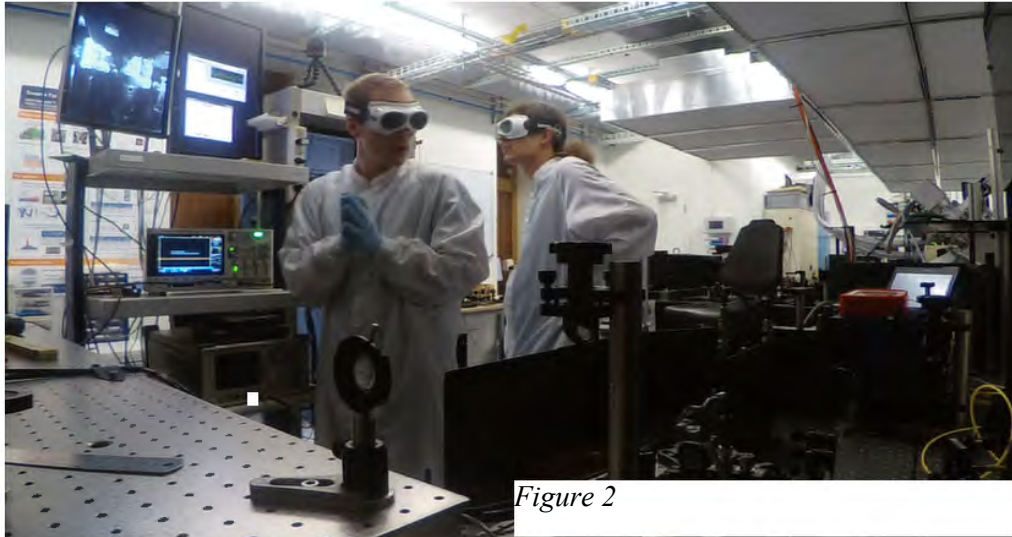
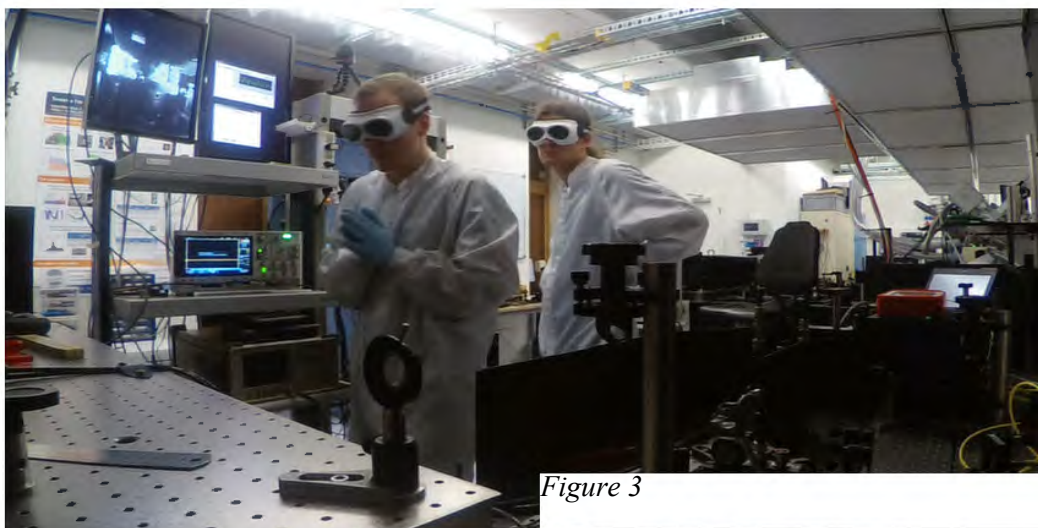


Figure 1

3 JUL: %we mode%#↑lock it?
 A Jul %,,,,,,%torques left->
 B Fig #fig.8



4 (1.1) %α(0.5)%α÷ζ#(0.6)÷
 A Jul %,,,,,,%torques back to table->
 B Jan α.....αturns left->
 C Jul ÷one step forward÷stops->
 D Jan ζstepping forward->
 E Fig #Fig.3



5 JAN: ts.+ ts.+ le+σt's s+ee huh?
 A Jul -->+,,,,,+...+grabs mouse w RH->
 B Jan removes RH-->σreaching->
 C Jul +screwdriver w LH->

6 (2.0) (0.4) #ζ% (0.6) %+(0.8)
 A Jan ->ζstops->
 B Jul %turns to comp%to left->
 C Jul ->+,,,,,,removes RH from mouse->
 D Fig #Fig.4

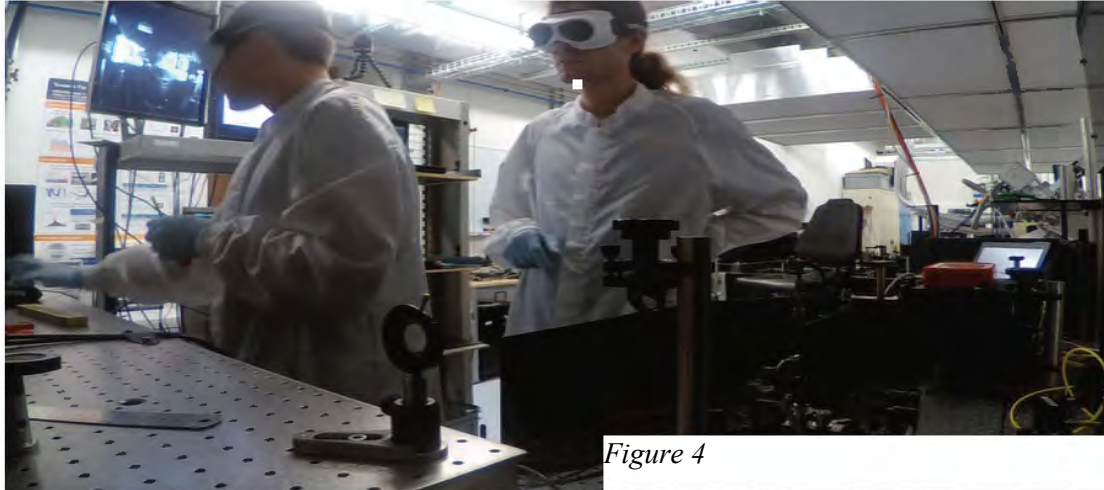


Figure 4

7 JAN: .hh%σ so.(0.6) open the::σ(0.6)σ power meterζ .HHσ
 A Jul ->%stops->
 B Jan ->σ.....σgrabsblockσadjustsσ,,,,,,σpoints

8 JAN: and ζoneζ# th:ing when you αmodeσlockα:ing,σ+(0.4)σ+
 A Jan ζsteps backσ
 B Jan ->σholds-----σlowers-----σraises
 C Jan α....αturns left->
 D Jul places SD on table+,,,,,,+
 # Fig #Fig.5

Figure 5 - Julius suspends ~~Figure 5~~ to modelock

As Julius steps back slightly from the computer (1.1), he utters *okay then* with a sharp rising intonation, looks up from the computer, turns left towards the laser cavity, removes his hands from the computer, and claps, holding both hands together (fig2.1). His turn in line 3 nominates a next action, and he turns left as if directing his turn to Jannick, who is still at the computer behind him (1.3a, fig2.2). The turn in line 3 is delivered with a rising intonation which designedly orients to making a response from Jannick relevant. During the 1.1 seconds after his turn, Julius moves closer to the table (1.5a), followed by Jannick, who now begins departing from the computer towards the table (1.5b,c).

Jannick's turn in line 5 neither confirms nor disconfirms the response, though it is fitted to the Julius, prior turn. Julius already begins reaching for the tools necessary for mode locking (the mouse to operate the laser and a screwdriver which has been lying on the table (1.5a,c)). Julius appears to begin starting the laser (1.6), and Jannick has now approached the table and stands just behind Julius (fig2.4). Julius then turns to the left, presumably to ask a coworker nearby if knocking on the table is acceptable since the process of knocking can disrupt other work on laser cavities in the laboratory. Jannick intervenes at this point and begins giving an instruction in line 8 (the entirety of which is not transcribed here). .

So, Julius again formulates a next step as a **recipient-designed** joint action, this time combining the pronoun *we* and high-rising intonation at the end of the turn in line 3. While he has already begun moving toward the table where the mode locking will take place, he shifts his posture back to Jannick (1.3a, fig2.2) and continues moving forward to the table to carry out the action. An additional layer to the interactional patterns in proposals then follows: the participant who closes a particular course of action initiates its closure and transition both verbally and through embodied conduct. The same participant then proposes the next action and is typically treated as being the participant to carry out the said course of action unless otherwise specified. The co-participant confirms, most often minimally, and follows the participant after the proposal has been made, observing, and possibly offering commentary or intervening as the course of action unfolds. In the use of proposals seen thus far in the chapter, participants treat the course of action as being proffered first only as a possible course of action to be taken. The distribution of labor and responsibility is not assigned in the proposal turn itself, though it may be made projectable or altered in following sequential work.

Extract 5 shows another change that occurs early on in the first corpus. Notably, this shows how Julius begins to delegate responsibilities to Jannick after initiating a joint activity. Here, the object is a stage that is used to mount a copper aperture for adjusting the laser beam at a

precise location in the cavity which can be controlled digitally by computers. We see how Julius initiates a proposal sequence, then directly shifts the responsibility to Jannick in determining the precise location through a question delivered in line 11.

Extract_5_Nov_7_2019

1 JUL: *+ts! then+# I que:ss, +(0.4) *di+#ode;
 A Jul *..turns to diode-----*to Jan----->
 B Jul +.....+raises arms--+gestures to diode+
 C fig #Fig.1 #Fig.2



Figure 1



Figure 2

2 JUL: then* we ha+#ve to put this thing in;
 A Jul --->*to cavity, turning----->
 B Jul +rotates LH, points to stage, palm up->
 C Fig #Fig.3

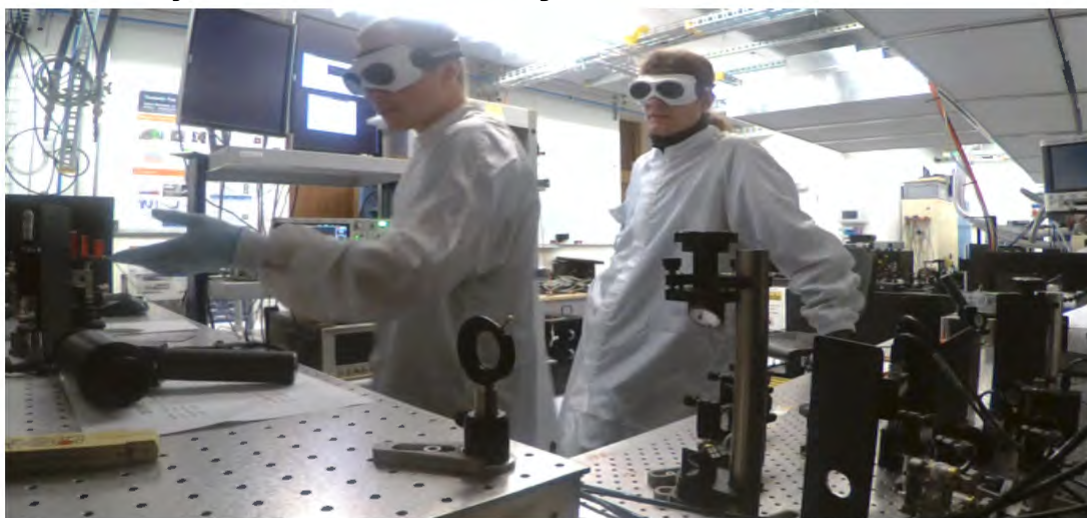


Figure 3

3 (0.8) α (0.8)
 A Jan α steps fwd->
 4 JAN: ye*:p.*
 A Jul ->*turns to JAN*->
 5 (1.2) +(0.3)* α (0.2)#+(0.7)+*
 A Jul +,,,,,,,,,#+to stage+releases and touches block->
 B Jul *stops, leans on table w right elbow*pivot Jan->
 C Jan -> α stops->
 D Fig #Fig.4



Figure 4

6 JUL: I f*ound the freαflex&#x26;
 A Jul ->*holds->
 B Jan ->α.....approaching->

7 JAN: okay go*oda*+.
 A Jul ->*,*,*,*pivots back to stage->
 B Jan ->αstops->
 C Jul +,,->

8 JUL: °°heh (0.8)+ heh heh°° °heh° *.H[HH
 9 JAN: [I was thinking that it&*
 A Jul ->+touches stage->
 B Jul ->*removes r elbow, leans over*->

10 JAN: &somewhere.
 11 JUL: YOU WANT IT&# * (0.6)* somewhere here +or,=
 A Jul ->*,*,*,*,*leans to right->
 B Jul ->+removes LH->
 C Fig #Fig.5



Figure 5

- 12 JAN: =yeah.=
 13 JUL: =°>+where do you want it+=<°.

A Jul +picks up card-----+
 14 JAN: =that∞ I think is+ good- good∞# position.

A Jan ∞.....∞grabs stage->>

B Jul ->+places card to right->

C Fig #Fig.6



Figure 6 – Jannick adjusting the stage

- 15 JUL: o:kay.

Before the extract, Julius is arranging some materials on the table while Jannick talks to a second colleague (not shown in the picture). Julius turns toward Jannick and the table, co-occurring with his turn in line 1. He pauses midturn, verbalizes and points to the diode, turns facing Jannick (fig.2-3) and then begins walking toward the table and pointing as he nominates an upcoming action (1.2). Jannick's response is first embodied as he looks to the table and begins approaching it (1.3a). Jannick verbally confirms Julius' prior turn (*yep*, 1.4) and in the following line Julius has arranged some materials on the table, leaning on it and pointing to the stage with an open, palm-up gesture (fig.4). The organization of the turns from lines 1-2 resembles extracts 3 and 4 structurally and in the terms of the resources Julius deploys to formulate it: An activity marker co-occurs with open palm gestures followed by a pause and then nominating the action just performed (the diode) which is then followed by the next action to be performed (1.2). Julius formulates the next action after checking Jannick's availability (1.1a) and is delivered while moving toward the stage with both hands pointing toward it. In figure 4, Julius and Jannick have both reorganized their bodies at the table attending to the object of focus, displaying preparedness for the next action to be carried out (cf. C. Goodwin, 2000; Goodwin & Goodwin 2004)

At this point, we see a departure from the prior extracts, the focus of which occurs in lines 11-15. First Julius refers to a prior difficulty he had with the laser (l.6). Julius treats as a laughable, side sequence (Julius smiles l.6 and laughs l.8, cf. Jefferson 1972) and then resumes the on-task activity (Schegloff 1999, p. 424) launching a turn that designates the placement of the stage as Jannick's choice, or perhaps responsibility (l.11). Two facets of Julius' turn in line 6 display this. First, Julius shifts from the *we have to X* format he used in line 2 to using *you* in line 6. The desiderative verb *want* and slightly rising intonation makes this hearable as a question or perhaps request (Couper-Kuhlen 2014¹). Further evidence comes from the fact that Julius, who has already begun adjusting the stage on the table before the side sequence closed (l.9a-b) leans to right during the 0.6 second pause (l.10), providing Jannick better visual and physical access to the stage. By completing the question with a candidate answer (Pomerantz 1988) and removing his hands from the stage (l.11b) Julius makes relevant a next slot for Jannick to (dis)confirm the location of the stage. While Jannick confirms the candidate placement (l.12), Julius treats this as insufficient and reformulates the question (l.13) while also arranging some materials on the table and looking away from the stage (see figure 6). Jannick begins adjusting the stage then upgrades his response with an assessment (l.14) while manipulating the stage and Julius treats as sufficient with a sequence-closing third.

In shifting the responsibility of who manipulates and decides on the placement of the stage, Julius traverses multiple clines of *deontic stance* within this singular fragment and he does so in a carefully timed, emergent way. The overall activity is launched by Julius initially displaying high **distal** and **proximal deontic stance** toward his own actions in formulating and beginning the activity. However, we see that Julius moves more tentatively into claiming the rights to control Jannick's actions. The first indicator can be seen in how Julius designs his embodied conduct in figure 4. Where in prior extracts Julius projects through his embodied conduct that he will carry out the action, in XXX above he positions himself differently. He rests his elbow on the table (see Streeck 2018 on resting postures) and instead of directly manipulating the object holds his hand up in a palm-up presentational gesture (Cooperrider et al. 2018; Kendon 2004). After the 0.7 second pause between holding this gesture and then touching the block (l.8a) with no forthcoming response, Julius launches the side sequence. The

¹ While Couper-Kuhlen (2014) shows desiderative declaratives in her study as being a frequent format for making requests, her instances cover 1st person singular declaratives, such as *I want* and *I need*. In my data, I observe that participants frequently use declarative constructions with the 2nd person singular *you* for polar questions, making requests, and so on. One possible explanation is the participants' non-native English speaking status.

resumption of the ‘on-task’ work (1.11) is abrupt compared to the resources described by Jefferson (1972) such as marking the closing of the sequence or the task resumption (note the heightened volume). Additionally, Julius’ turn in line 11 remains pragmatically and syntactically incomplete (1.11) for 0.6 seconds and when he reaches the turn’s completion the use of the turn-final *or* both indexes his own uncertainty about its position and also tilts the relevant response toward a disconfirmation (Drake, 2005). When Jannick confirms the placement (1.12) Julius reformulates the question using a *wh*-question (1.13), downgrading his own **deontic stance relative** to Jannick and placing the decision very literally in Jannick’s hands (1.14).

The features of this extract described above show that Jannick and Julius display a mutual cautiousness in displaying high deontic stance toward one another. Julius navigates moving from deciding on a course of action to involving Jannick’s participation in the decision carefully coordinating the transfer of responsibility and modifying his turn construction in response to Jannick’s conduct (Goodwin 1981). In the same sense, Julius inhabits and adjusts his own **deontic stance** accordingly. Jannick also delays his own involvement in the activity, coming only adjusting the stage after several attempts from Julius. A second example showing Jannick and Julius’ navigation is shown in Extract (XXX) below.

Extract 6 comes from November 8th, the fourth day of Jannick and Julius working together. Julius has been measuring the distance between mirrors and then initiates the activity of aligning the mirrors using an infrared viewer. A similar pattern follows, Julius initiates and begins to launch the action but then pauses and invites Jannick’s participation into the activity.

Extract_6_Nov_8th_2018

- 1 JUL: okay the:n we ha+ve to rea*lign?
A Jul +grabs viewer, lifts-->
B Jul *#turns to JAN->
C Fig #Fig.1

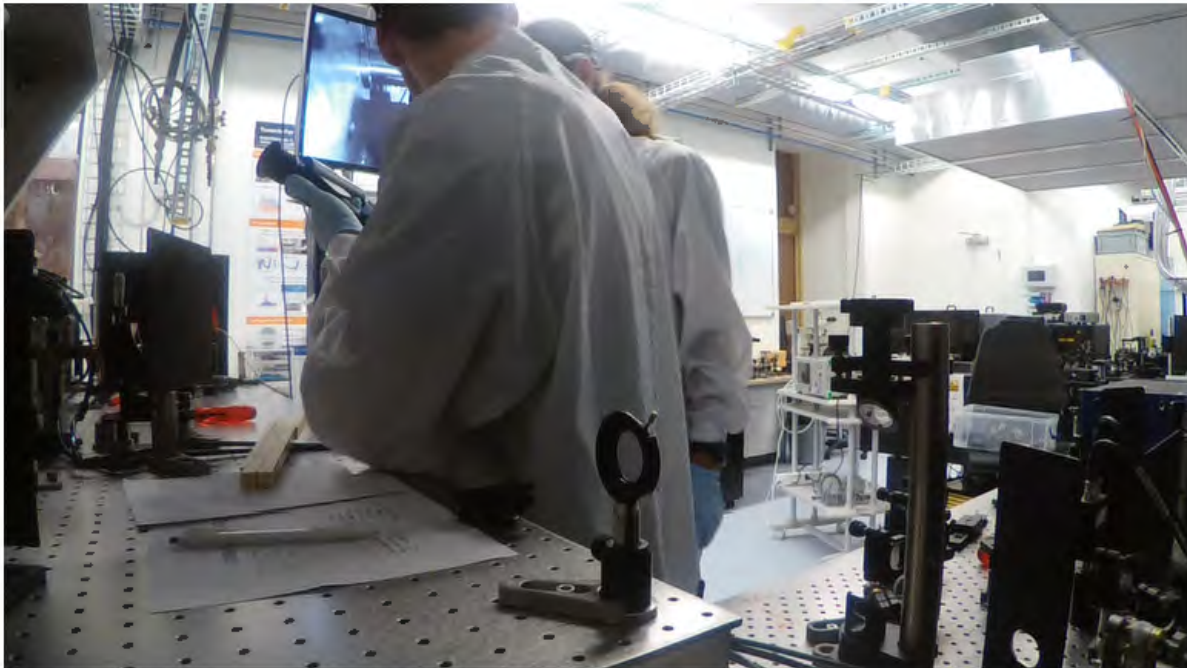


Figure 1 - Julius proffers viewer to Jannick

- 2 (1.8) ((Julius looks to table))
3 JUL:→ uh +you wan*na try a|t or?:
A Jul ->+raises viewer to JAN->
B Jul *looks to JAN->
C Jan αsteps back from table->
3 (1.1)
4 JAN: pffαfh.
A Jan αmoves forward, leans over table->
5 JAN: I could as we:ll it could be faster °I guess°.
6 JUL: [or so
7 JAN: [σgo back >back back< to this mirrr+or?
A Jan σpointing to mirror->
B Jul ->+places viewer on table->>
8 JUL: uh no you have- uh:: you have to::

Near the end of Julius' turn formulating the next action (1.1), he turns to Jannick with the viewer raised slightly and toward Jannick in a way that resembles the presentational gesture from extract 5 and what Tuncer & Haddington (2020) have described as object proffers. On the one

hand, Julius embodied conduct partially indicates that he is displaying the object to Jannick making a possible transfer relevant (Tuncer, Licoppe & Haddington 2019). On the other hand, his verbal conduct (*we have to realign*) and the fact that he has been controlling the actions prior do not articulate a possible transfer of the object and of delegating the task to Jannick. While Julius could have begun the process of realigning just after the turn or during the 0.8 second pause (1.2) instead he further raises the viewer and nominates Jannick for carrying out the action. Julius designs this turn similarly to extract 5 and, again, cautiously. With his hesitation marker (*uh*) and gaze turned away resembles what Auer (2021) has described as a means for displaying planning. Following this hesitation phase by turning toward Jannick, raising the viewer, and using the second-person declarative (1.3), and turn-final *or* Julius designs this turn in light of possible forthcoming resistance from Jannick. Indeed, Jannick steps back from the table thereby distancing himself from the action, waits just over one second while withholding his response (1.3) and then finally responding verbally with a non-lexical vocalization (1.4). This non-lexical vocalization has been described by Baudolf-Quillarte (2016) as displaying disengagement from a prior action in French² (see also Skogmyr Marian 2020 on *pf* in L2 French complaint sequences). Jannick then conditionally accepts (*I could as well*), providing a possible benefit to be gained from his performance (*it could be faster*), and modifies his prior rejection to a more convergent stance with Julius' suggestion using *I guess* (Kärkkäinen 2003). Julius begins to potentially retract his offer or provide an alternative (1.6), but he stops his turn as it comes in overlap with Jannick's information seeking question (1.7) which asks Julius to specify which mirrors to align. Julius then begins to instruct Jannick on aligning the mirrors (1.8, the entirety of the instruction is not shown here) and after the extract, Jannick realigns the mirrors.

4.2.2 Interim Summary: Change across the first days

So far, I have analyzed how Julius and Jannick formulate and initiate new joint courses of action at activity junctures to make next courses of action projectable and how they relate to altering the participation framework in delegating responsibilities associated with carrying out manual courses of action. During the first project, when Julius initiates courses of action he incrementally moves to seeking confirmation from Jannick and, in other cases, uses proposals

² A biographical note: Jannick is not a native French speaker but an L2 French speaker. While the results discussed by the authors noted above refer to French language interactions, Jannick accomplishes the same results with his use of *pf* in this extract.

to lay the interactional groundwork for inviting Jannick's contributions (Excerpt 4). In these extracts, Jannick only minimally intervenes, by confirming, following, and observing Julius. Taking into consideration the deontic rights of joint decision making in interaction (Stevanovic & Peryäkylä 2012) the above extracts reveal two important characteristics in how Jannick and Julius conduct the organization of laboratory work in their first days working together. First, Julius displays high *proximal deontic rights* by routinely initiating new sequences through initiating next courses of action (Stevanovic 2015). Yet, this proximal deontic authority contrasts with Julius' *distal* deontic authority (ibid); he does not make claims or directives for what Jannick should do in the moment of the proposal but only through questions and object proffers after the formulating the action and receiving responses. In doing so, Julius and Jannick mutually index low entitlement to request something from one another or intervene in one another's actions.

Changes in how Julius and Jannick display their deontic authority in activity management moves can be seen within the first days of working together. A summary of observed changes in how Julius recipient-designs his proposals on the first day of working with Jannick follows below.

Table 1 – Julius proposals on the first day

Julius Proposals: First day with Jannick, November 2nd 2018				
	<i>Transition marker</i>	<i>Proposal</i>	<i>Embodied Conduct</i>	<i>Start of Action</i>
1	Soo:	(no action verbalized)	-	-Action begins during activity marker (Julius)
2	So	(no action verbalized)	-	-Action begins during activity juncture (Julius)
3	Okay now	I have to align this guy?	-Pointing to object -turning to Jannick -action begins after	-Action occurs after response from Jannick
4	Okay now	I guess the camera software fails. What can you do to stop this?	-Points to object -Orients to Jannick	*Jannick carries out action
5	So I think now	We need X.	-Orients to Jannick	-Action occurs after response from Jannick
6	Okay so	We have to do this adjustment again?	-Points to focal object	-Action begins during proposal
7	Okay so	We can (.) we go to twelve?	-Points to focal object -Orients to Jannick	-Action begins after response from Jannick

8	Okay. So	we have to change the lengths now.	-Orients to Jannick.	-Action begins after response from Jannick
9	Okay	we have to now note the cavity length also.	-Points to focal object, -Orients to Jannick	-Action begins after response from Jannick
10	-	we have to go to: two point five so:: thirty two centimeters more.		-Action begins after response from Jannick
11	Well then	we have to fold once more because otherwise it will not be possible.	-Shrugs -Orients to Jannick	-Action begins after response from Jannick
12	Okay good.	I prepare another mirror.	-points to object	-Action begins after response from Jannick
13	So	new cavity length?	-Julius moves to computers to record cavity length	-Action begins during transition marker
14	Ah	we have to check (.) if the alignment is properly.	-points to focal object -orients to Jannick	-Action begins after response from Jannick

Table 1 shows an initial change in Julius' practices for initiating next steps in the lab on the first day of working with Jannick. The first two examples (#1 and #2, seen in extracts 1 and 2) include no verbal formulation of the activity (N=2). Julius employs troubles reporting only once (#3) which is the single instance of initiating a next course of action that Jannick performs during the day. The remaining instances of initiating next moves are formulated using deontic declaratives either with the first-person singular pronoun (#3, #4, #12; N=3) or the first-person plural (N=8). These figures show that over the course of the first day, from "the very beginning" (Deppermann & Pekarek Doehler 2021), Julius moves from relying on treating actions as unilateral to recipient-designing his formulations of next courses of action to be heard as *joint* courses of action.

Stevanovic & Monzoni (2016) have shown that embodied behavior alone is the default mode for initiating moves within joint courses of action. The results above, and in my data in general, suggest a different finding. Julius displays an increasing trend to using speech to initiate courses of action, and as shown in the early data set above, that it is not just formulating actions through speech but orienting to responses from Jannick. However, the data shown in this chapter does concur with Stevanovic & Monzoni's (ibid.) finding that participants orient to bodily behavior over verbal behavior when there are discrepancies which brings the results to a second point.

In terms of the embodied format of proposing a course of action, Julius moves from already beginning the course of action at the beginning of the activity-marking juncture (Extracts 1 & 2) to pointing towards the focal objects and positioning his torso and gaze toward Jannick (as seen in Extracts 3 and 4). By pointing to the objects, Julius highlights a *domain of scrutiny* and

cooperative transformation zones (Goodwin 1994, 2013) that allow Julius and Jannick to establish a locally accomplished professional vision for the upcoming objects of the forthcoming action. Taking these features together, we see that Julius thereby displays an embodied orientation to Jannick as a proper recipient of the proposed course of action, which has consequences for the participation framework. Namely, Julius creates a space for mutual accountability and relative deontic authority for the upcoming action. Furthermore, in the final column, we see that Julius increasingly delays the start of the actions until *after* receiving a response from Jannick (11 out of 14 instances). While these changes occur within the first day, I observe that they remain relatively fixed over the following days in the early data set.

Julius displays increasing sensitivity to Jannick's participation in the actions over time. Julius increases his use of higher deontic rights by often issuing requests or directives after proposing a course of action, as seen in extract 6. Jannick and Julius have been discussing the progress of the setup so far. After a lull in the conversation, Julius issues a proposal first (1.1), followed by a directive (1.3).

Extract_6_Nov_9_2018

1	JUL:	α #so we need α two: more +silver mirrors+ %(0.5)%
A	Jan	α nods 3x--- α
B	Jul	+raises hands--+reaching LH->
C	Jul	%lifts elbow->
D	Fig	#fig.1

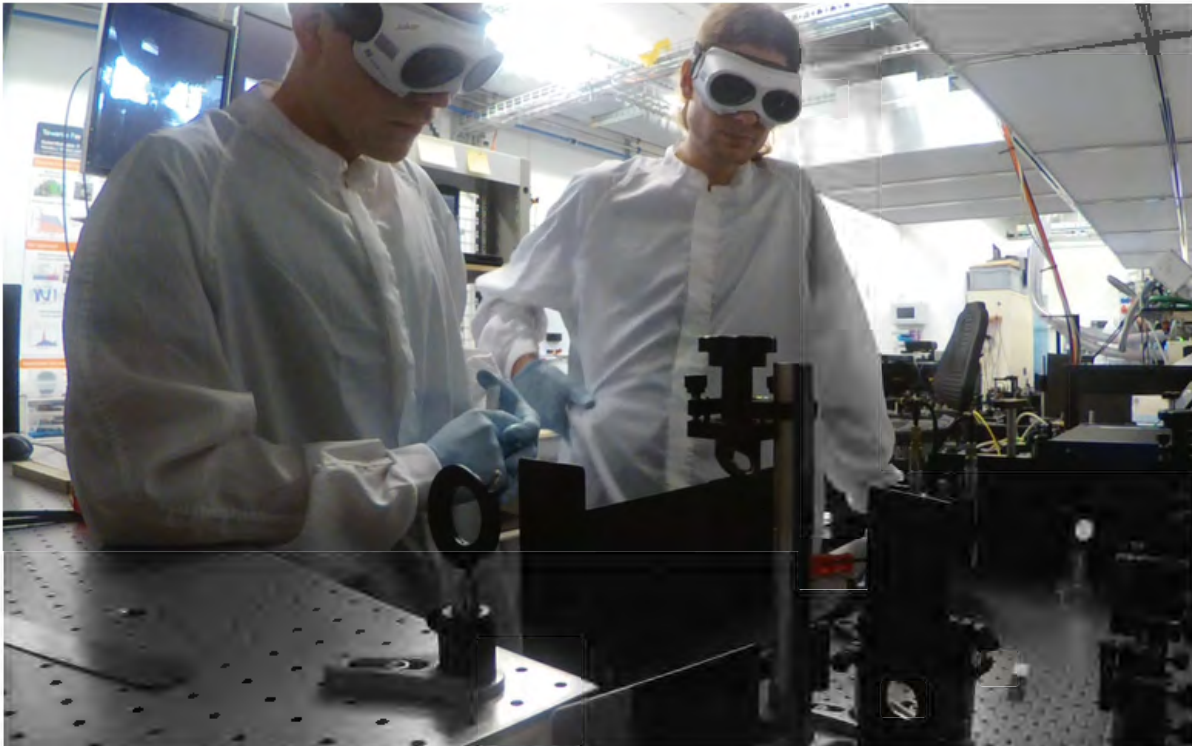


Figure 1

2 JUL: I guess.

3 JUL: → you can use these over there.
 A Jul >+points-----+holds-----+,,,+
 B Jan αturns following gesture->
 C Jul ->%turning away->
 E Fig #fig.2

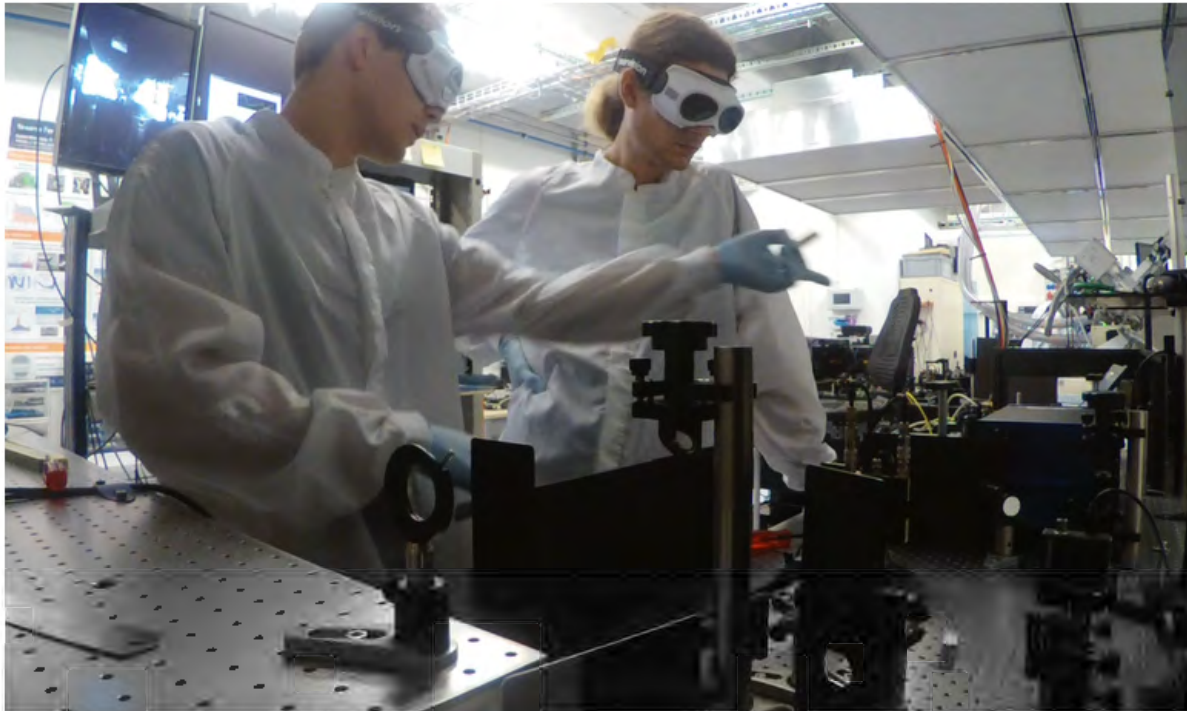


Figure 2

4 JAN: α(0.5)%α yes yesα.
 A Jan αnods 3xα
 B Jul%stops----%walks away->
 B Jan ->αlooks to mirrors->

5 (2.4) (1.4)%+(1.0)+
 A Jul ->%stops at shelves
 B Jul +placing objects on shelves->>

Julius flashes both palms briefly (1.1a). He then begins extending his left arm and pointing to the location of the mirrors (1.1b). Julius then shifts modalities in line 3, using the second person singular pronoun *you* and the modal verb *can* which, coupled with the pointing gesture toward the focal objects, directly designating Jannick as the agent to carry out the action of installing

the mirrors. This directive³ thus strongly indexes Julius' heightened proximal deontic authority by specifically orienting to his rights to regulate what activity should come next and who should carry out that action. Furthermore, by virtue of Julius' preceding proposal (1.1), he indicates the necessity for specific objects, but Julius does not specifically name the action for Jannick to carry out (installing the mirrors). Rather, through this formulation, Julius treats it as an intersubjectively assumed process. In other words, he designates that Jannick *can use these* particular mirrors in this particular location. A second observation in Julius' display of increased deontic authority is observable in his closing of the sequence. He already begins turning away from Jannick and the workspace where the action is to be carried out at the end of his directive (1.3) and notably, before Jannick has provided an embodied (nodding, 1.4a) or verbal (1.4) response. Julius then proceeds to carry out his own unilateral course of action, walking to the shelves behind him, where he begins organizing and tidying up various materials they are no longer using. This extract then indicates a shifting trajectory in the proposal sequences observed in the data.

Over time, Jannick also begins to respond and nominate himself to take actions earlier within the proposal sequence, as shown in extract 7. This extract occurs at the beginning of the day. Julius is just turning on the cameras for recording and we can see Jannick entering the laboratory and putting on gloves. In lines 1-7, Julius turns on one of the cameras and comments that there are 'only four hours left' (1.1) which prompts a joking sequence where Jannick negatively assesses the remaining hours (1.2-7) and talks to the camera. During this sequence, Jannick puts on latex gloves, and Julius walks from the second video camera to the center of the tables as if surveying the lab.

Extract_7_November_10_2018

1	JUL:	only four hours left.
2	JAN:	four hours left Adam.
3	JAN:	then youre gone.
4	(0.5)	
5	JAN:	tch!
6	(1.0)	
7	JAN:	SO: BA:D.##°so bad°.
	A Jul	%.....->
	B Fig	#fig.1

³ I use the term directive here to refer to a general class of actions where a participant designates a recipient to perform a course of action, following M.H. Goodwin (1980, 1988).



Figure 1

8 (1.0) (0.2)%+# (0.8)%+α
 A Jul ,,,,,,%turns->
 B Jul +claps hands, holds+-->
 C Jan αapproaches table->
 D Fig #fig. 2



Figure 2 – Julius clasps hands

9 JUL: O:αK:A%Yα#.
 A Jan ->αclapsα
 B Jul ,,,,,,%turns to JAN, stops->

C Fig

#fig.3



Figure 3 – Jannick clasps hands

10 (3.9) + (0.4) + % (0.5) (1.1) % (0.9) ##
 A Jan + arms on hips +
 B Jan (turns slightly left) (moves forward ->
 C Jul (walks forward -> stops ->
 D Jul (looks to JAN ->
 E Fig #fig.3



Figure 3

11 JAN: (also autocorrelation (0.5) (1.0) (0.4) (SO: we have
 A Jan (touchpoints up and retracts ->

- B Jul %,,,,,,,,,,,,,,,,,look right->
 C Jan *LH on AC*->
- 12 JAN autoco*rrelat α or?**
 A Jan ->*retracts LH->
 B Jan -> α ...walking to computers->
- 13 (1.6) α %(0.5) α (0.5)% α**
 A Jan α stops->
 B Jan α->
 C Jul %.....%turns to computers->
- 14 JAN: th α is gu α +:y+,**
 A Jan -> α touches α turns on monitor->
 B Jul +..+reaches and turns on monitor->

At the point where Jannick's assessment of the remaining recording time is possibly complete (1.7, first '*so bad*'), Julius turns away from examining the table and toward Jannick, then providing a hearably transitional implicative *okay* (1.9) and claps his hands and holding them clasped together at chest height (fig 5.2). Jannick, who has taken two steps closer to Julius after putting on his gloves, mirrors Julius' embodied actions, first stopping, then clapping his hands together, and then adopting an akimbo posture (1.9a, fig. 5.3). During the 3.9 seconds in line 10, Julius and Jannick both hold their postures, moving only slightly as if surveying the materials in front of them (fig.5.3). So, Julius' *okay* and co-occurring embodied conduct in 1.9 demarcates the interaction as being 'back to business' (in other words, closing the joking sequence and projecting moving into the 'on-task' laboratory work), which Jannick reciprocates through his return gestures, and then held by both participants with no orientation to any notable absence of next moves.

Julius conduct displays that he will initiate a next course of action. The turn strongly projects more to come, but the absence of any forthcoming verbal turn is remediated by the mutual mirroring of embodied conduct described above. On the one hand, Julius and Jannick's visible surveying of their scientific materials and the overall workspace enact the relevant at-this-moment-now practice of examining before taking a specific action. On the other hand, Julius and Jannick display and sustain availability to one another for possible forthcoming turns or embodied actions. The reflexively produced interactional space at line 10 is part of the interactional organizational work commonly established by participants before issuing proposals. This particular interactional slot then allows Jannick to self-select and launch the next relevant manual actions to be taken in moving into work.

Further evidence for the participant's orientation to enacting the routine of deciding on joint steps is grounded in Jannick's return gesture in line 9. Jannick claps and holds his hands together, mimicking Julius' prior clap (1.8). He does so co-occurring with Julius's verbal turn (1.10). The clapping gesture hearbly invites a next relevant action. Jannick's mimicry of Julius' gesture establishes an interactive, rhythmic embodied alignment to a yet-to-be-named next course of action. Then, without verbalizing any specific course of action, Jannick begins proceeding with next steps, more specifically, turning on the autocorrelator and computers. Jannick's self-selection starts in line 10 as he moves slightly toward the table. He then verbalizes his self-selection in 1.11 with '*so autocorrelator*', followed by a cut-off (possibly due to something caught in his throat) and then reformatted with a syntactically complete turn *we have the autocorrelator*. After touching the autocorrelator briefly with his right-hand raises his hand, extending his right index finger upward (1.11a). Jannick turns to the shelves behind them and begins preparing more of the technical equipment (1.13), and Julius follows, turning on an oscillating monitor below, without any verbal indication 1.14b

By clapping his hands together, a gesture routinely performed by Julius during proposal sequences, Jannick displays not just an orientation and alignment to the initiation of a proposal sequence, but he mirrors and thereby indexes a display of acknowledging Julius' particular bodily actions in a similar ecological and interactional environment. Jannick's return clapping gesture displays a non-verbal, embodied orientation to an upcoming transition. A second point in which this marks an observable change in early proposal sequences is that, until this point, Jannick has rarely intervened by taking on practical courses of action until after a specific question or directive is issued. In this extract, then, Jannick displays an increasing *distal deontic status* to take over a sequence initiated by Julius. Initiating practical courses of action prior to a proper proposal is also a display of *common ground* (Clark, 1996) in that the participants smoothly move from doing courses of action without verbal prompts. In this sense, Jannick ascribes a projectable upcoming course of action, prompted by the closing of the joking sequence, Julius' initial *okay*, and its co-occurring embodied behavior.

4.3 Practices for proposing joint courses of action: Eight months later

In the following section, I build on the prior analysis longitudinally to examine how the participants intitiate joint courses of action approximately eight months later. After the first four weeks of working together on a project, Jannick and Julius split and worked on their own individual projects. On July 26th, 2019, Jannick and Julius began working together again on a

new project. In the early data set, initiating moves by Julius work to check the grounds before or during engaging in upcoming courses of action and to set up the embodied participation framework to delegate responsibilities. Changes in participation or who carries out the course of action were limited to instances where participants directly offered, proffered, or requested participation.

By using illustrative examples from the second project, 8 I show how initiating next actions changes over time in two ways. First, I argue that Julius' work more as possible informings or announcements compared to the first project. Julius mostly initiates next courses of action while adopting resting postures (Streeck, 2018) or otherwise displaying no projectable motion to immediately carrying out the action. Instead, as shown in the extract below, he rests and turns his gaze to Jannick. Additionally, this extract shows how assessment sequences preceding the turn which initiates a next course of action become increasingly elaborate, with Jannick offering early assessments.

Extract 8

1 JUL: [ok↑ay.
 2 JAN: [cool.
 3 (0.6)
 4 JAN: that sou:nds good.
 5 JUL: *fand it survived >more or less.<f
 A Jul *points to screen
 6 JUL:→ ok↑ay.++
 A Jul +turns to table->
 B Jul *placing mouse on table->
 7 JUL:→ then I gu*ess we can try: to +#get back to vacuum.
 A Jul ->*rests hand on post, akimbo posture->
 B Jul ->+looks to JAN->>
 C Fig #fig.1

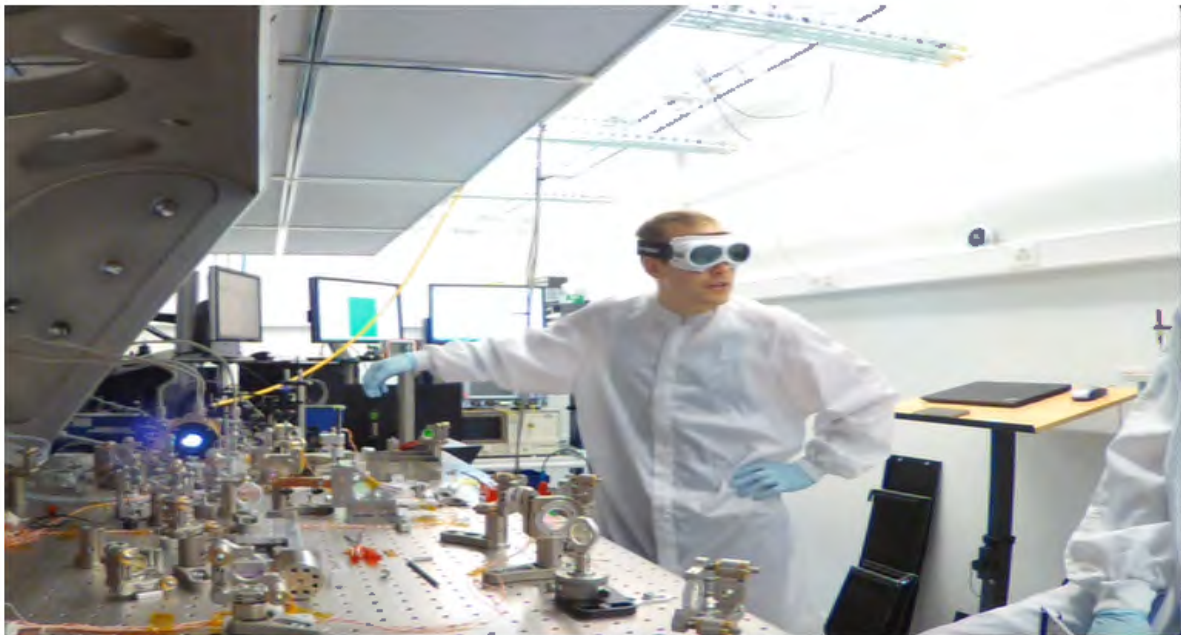


Figure 1 – Julius resting posture

```
8  JAN:      %ts!  
    A Jan      %raises right hand and snaps fingers  
9  (0.5)      ((Jannick nods))  
10 JAN:      y(.h)↑ea(h) .  
    A Jan  
11 (2.6)      ((Jannick picks up pen from table))  
12 JAN:      °÷#this.°  
    B Jan      ÷inspecting table->  
B Fig          #Fig.2
```

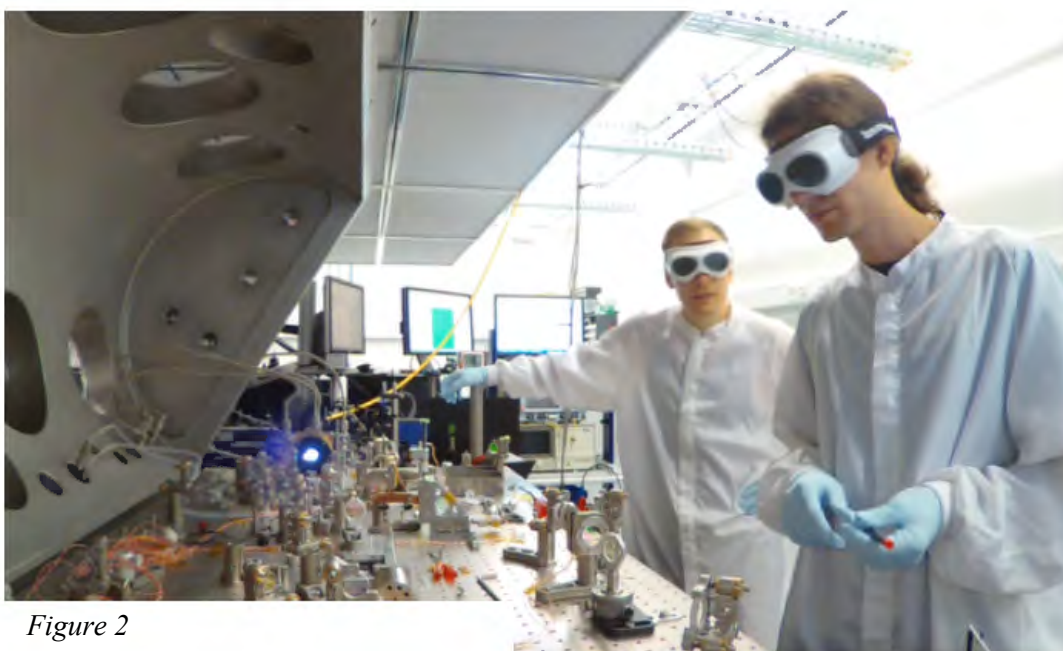


Figure 2

13 JUL: good I:* switch off the laser then?=
 A Jul ->*grabs mouse to turn off laser->>
 14 JAN: =~~mm~~:hm.
 A Jan ÷walks and places pen on shelf->>

The extract begins just as Julius has finished testing the laser, observing its measurements on a screen, and then shutting off the laser. In line 7, Julius refers to an action that involves closing a large lid over the table to vacuum seal the laser and operate it under different conditions. When Jannick begins clearing materials from the table (l.7) he displays an orientation to confirming this action.

The assessment and transition work sequence Julius and Jannick is both longer and more complex than in the early extracts. Julius' typical use of okay (l.1) is overlapped with a high-grade assessment (l.2), followed by another assessment from Jannick that projects a closing of the sequence (l.4), and elaboration from Julius (l.5) explicating that the laser did not stop running on its own. The extended assessment sequence demonstrates that Jannick and Julius orient to the flexible nature of the routine activity moving from one activity to the next. Additionally, the extended assessment sequence (l.1-5) indexes the socially shared nature of activities that provides the grounds for the production of assessments (Pomerantz 1984). Jannick displays an increased distal deontic authority in opening up a new sequence rather than letting Julius navigate and formulate the next actions.

Second, Julius' embodied conduct displays an increased sensitivity to Jannick's deontic rights in this action. By resting his arm on a post near the table and taking an akimbo (hand on the hip) posture while leaning to the right and looking toward Jannick (l.7a), Julius does not project that he will commence the actions necessary for closing the chamber. He also, in does not delegate any responsibility to Jannick but instead, Jannick self-selects and begins clearing materials off the table.

Extract 8 comes from July 26th, 2019. Julius has been taking power measurements and checking the alignment on the laser, an operation done by haptically manipulating a computer control screen with a mouse. Jannick is off to the side (fig.6.1) collecting materials to be used for installing a stage, a technical device for the table. Importantly here, neither Julius nor Jannick have direct visual access to one another or to their respective ongoing actions.

Extract_9_July_26th_2019_

- 1 **JUL** **ok↑%+ay:.**
 A Jul *,,,,,,turning->
 B Jul +,,,,,,reaching to place mouse on shelf->

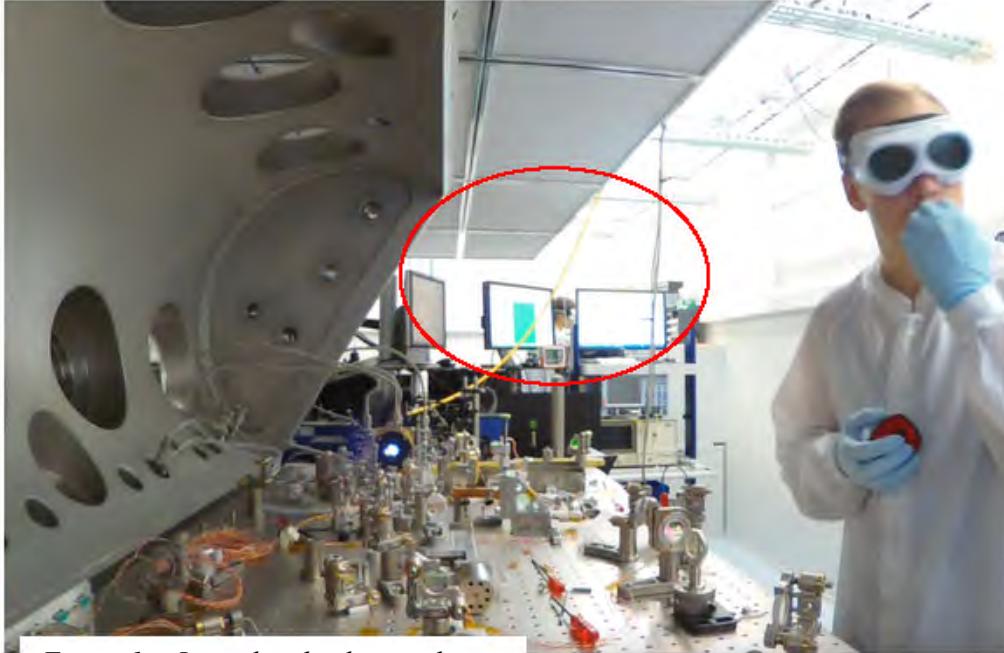


Figure 1 – Jannick in background

- 2 **JAN** **ye+ah.%**
 A Jul ,,+sets mouse on shelf->
 B Jul ->%stops->
- 3 **(2.5)** **% (0.5) % (1.1) + (0.9)**
 A Jul %turns%,,,,,,approaching table->
 B Jul +,,,,,,reaching for tools->
- 4 **JUL** **.hh the:n,+ (.) .hh% we can shake it.**
 A Jul ->+grabs----->
 B Jul ->%stops

The sequence unfolds verbally in a similar way to what I have shown in the early corpus. Julius starts in line 1 with an activity marker okay with rising-falling intonation. Jannick provides a confirmation (yeah, 1.2). Then Julius nominates an action using a first-person plural modal declarative (1.4). While we cannot see Jannick's embodied conduct, Julius' conduct occurs at a visible activity juncture. He turns away from the table, places the mouse on the shelf near the computers (1.1ab-2ab), and then approaches the table again, where he visibly inspects in various ways, touching objects (1.3-4b) and looking at the setup.

There are several key insights to be gleaned from this extract. Second, at the sequential level, there is a subtle but key difference in Jannick's response (1.2). Here, we have a hearably

confirming response prior to the nominated course of action (1.4). Jannick's yeah does not have features of inviting further response even though Julius' okay (1.1) strongly projects more to come. No follow-up or request for clarification occurs in the 2.7 seconds that pass (1.3). Julius and Jannick both continue with their respective actions, and the proposal turn (1.4) itself is not responded to, and this 'lack of response' while potentially expected, is not treated as problematic by either participant. The proposal unfolds in a routine way; it is issued by Julius and receives a response from Jannick but does not do the interactional work observed in the corpus above of specifically recruiting Jannick to confirm, then observe, examine or contribute in an embodied way.

Extract 9 below furthers this point. Again, Julius and Jannick are not within visible access to each other and thus cannot monitor one another's ongoing actions or progress, but both participants achieve intersubjectivity in determining and agreeing on what is coming next.

Extract_10_We_can_try_the_modals ZOOM0024.MOV JUL 26, 12:39

- | | | |
|---|--------------|--|
| 1 | JUL | ok↑ay: , ,
A Jul , , , , , , , lowering LH-> |
| 2 | (0.8) | (0.2)+%(0.6)
A Jul -> , , , +LH to side->
B Jul % , , , , , turning to table-> |
| 3 | JAN | everythi+ngs r↑eady+.
A Jul + , , , , , , , +grabs stage w RH-> |
| 4 | (1.8) | ≠(0.7)≠+(0.5)≠+(0.6)≠
A Jul ≠ , , , , , ≠glances left then right
B Jul -> +RH to side->
C Jul ≠1 , , , , ≠looks to table-> |
| 5 | JUL | then we can <u>try</u> the <u>mo</u>↑dals. |
| 6 | (1.0) | |
| 7 | JAN | yep. |

Of primary interest in this extract is Jannick's response in 1.3. Like extract 7, the response comes after transition marker (1.1) which co-occurs with Julius ending one course of action (setting materials onto a table to the right) and moving toward the table where he begins visibly inspecting the setup. In line 2, the slot where Julius typically provides an assessment or checking, there is a pause. Jannick then fills this slot with his own assessment of their joint progress thereby displaying an intersubjective understanding of what Julius' turn in 1.1 is doing. After arranging materials on the table (1.4), Julius nominates a next action (1.5) and Jannick confirms in the third position. While there is no lack of mutual visual access to one another,

Jannick's declarative, assessing response, *everything's ready*, occurring with falling final intonation, strongly claims epistemic, deontic, and affiliative alignment to a projected proposal which is not explicitly verbalized until line 5.

Whereas proposals in the early corpus are strongly linked with embodied re-orientations of the participants to mutually inspect the scientific objects and co-occurring conduct of their co-participants, the two proposal sequences here show that Jannick and Julius coordinate their actions separately while still 'doing' next initiating next actions.

4.4 Discussion: Context-sensitive practices for managing deontic asymmetry in proposal sequences over time

This chapter has shown the following findings. The first instances moments (extracts 1 & 2) show how Julius goes about the laboratory work unilaterally, but then elaborates his practices to tailor these moves toward Jannick. This is done through the following:

1. Julius initiates a course of action and carries out the course of action individually.

Next actions are initiated and formulated through the format:

[transition marker] + [formulation of next action]

Where [transition marker] is the only component occurring all extracts.

2. Embodied conduct (described in 2 above) begins before or during the verbal formulation (described in 1).

Jannick's responses include:

1. Single TCU response tokens (*yeah, mmhm*)
2. Embodied attention to focal objects and Julius' action (by walking towards the table and observing) *after* Julius has verbally formulated the next turn.
3. Single case of intervening that is markedly delayed and tentatively formulated, orienting to the delicate nature of intervening or instructing Julius.

Julius and Jannick add the following practices to their repertoire for engaging in joint activities over the course of their next days working together (from Nov 6th-10th).

Julius begins to:

1. Add [transition marker] + **[assessment]** + [formulation of next action]
2. Recipient designs his co-occurring embodied conduct to display and project his own readiness to carry out the activity, including raising and pointing both palms up and

facing inward, pointing with both hands to objects, walking toward objects and preparing to engage in the action formulated

3. Embodied conduct in 2 co-occurs with verbal conduct in part one.
4. Increase response mobilizing features such as turn final rising intonation at [formulation of next action] and using gaze toward Jannick.
5. Designate Jannick to carry out the task, through offers, invitations, or directives which occur after the initiation of an activity.

[transition marker] + [assessment] + [formulation of next action] + **[designating act]**

Jannick's responses are

1. Increasing but minimal responses to each step in Julius formulation
[transition marker] + [assessment] + [formulation of next action]
2. Initial responses to **[designating act]** display hesitation, through delayed responses, non-lexical vocalizations, and embodied movements away from the focal objects.
3. In contrast, when no forthcoming action is projected from Julius or when Jannick orients to some trouble with Julius' action he intervenes.

Analysis of the later data (July 25th, 2019, – September 3rd, 2019,) set shows changes in Julius practices for initiating next courses of action in that he:

1. Initiates next courses of action while resting and turning torso and gaze to Jannick.

And, Jannick increasingly displays:

1. Heightened involvement in assessment sequences
2. Self-selects to initiate a next activity in instances without lack of forthcoming response or projectable troubles

The results show that Julius regularly employs a routine sequence of verbal actions including transition markers (*okay, then*), assessments, and activity initiators (*we have to X, we need X*, fragments) are reflexively produced with embodied conduct, including mobile transitions from one workspace to the next often accompanied by pointing, movement, and double-handed gestures. The fact that Julius begins to routinely use *okay* as he pivots from one activity to initiating the next reflects the retrospective and prospective uses (inherent in the term pivot) in the use of *okay* as a transition marker (Beach, 1993). *Okay*, in these environments is not a response to prior talk but responds to the endogenous ecology of the constant manual tasks that participants engage in. As Beach (ibid.) described *okay* projects a “full turn” which fits consistently with the extracts described here. The nature of its projectability is also picked up

by Jannick. In extracts 8 and 9 it is clear that Jannick has more to rely on than Julius' verbal conduct only. He observes Julius working, participates in actions, and even though he often remains in a default mode as observer in the early data set, he is by no means reduced to simply an observer/listener. The way Julius routinely designs his verbal and embodied turns in initiating next actions works as a resource for Jannick to adjust his own participation. When Julius utters *okay*, even from across the room, Jannick is able to ascribe the action that Julius is doing, and he displays this by providing early (epistemic) claims through assessments such as “everything's ready” or ‘early’ confirmations. By placing *okay* at activity junctures, Julius creates a recognizable embodied transition from one workspace to the next in the lab, and to potential changes in the upcoming participation framework.

When transitioning from new activities and spaces, Julius routinely use verbal formulations of the next action with *deontic declaratives* and *fragments* (next change the mirror). constructions and fragments in his verbal formulations of next actions. Hopper & Traugott (1993) have argued that the construction *have to* expresses a cline of obligation slightly weaker than the modal *must*; *have to* denotes an obligation that that is possibly “resistable”. Tagliamonte & Smith (2002) have extensively discussed the *have to* constructions epistemic and deontic layering of the use of this construction in subjective, objective and subjective contexts. Considering these linguistically informed views of *have to X* as a deontic declarative suggests comparability to research within CA on deontic declaratives. These findings are similar to those described by Zinken (2016) for Polish deontic declaratives, Rossi's (2015) work on Italian, and Rossi & Zinken's (2016) comparison of Polish and Italian. **Deontic declaratives** motivate actions for coordinated participation, which manifests in Julius performing actions while Jannick observes (N=13). Jannick and Julius mutually orient to the upcoming task as being Julius' responsibility (Rossi & Zinken, 2016) similar to what Zinken & Ogiermann (2011) have described for *we need to X* in English. While Raymond et al., (2021) have argued for grammatical constructions such as *do you want?.. you want?.. want?* operating on a cline in relationship to the speakers' stance. Corroborating these findings is a topic for future research. The use of *deontic declaratives* and fragments obfuscate who will carry out the course of action. Yet, Julius' embodied conduct clearly projects that he will, or is already, about to carry out the action he names. So, why that now?

One explanation is that Julius orients to the default ‘roles’ of novice-expert. Julius works and Jannick watches and occasionally intervenes. This default mode is mitigated by including Jannick, on the verbal level, in the upcoming course of action. In addition, these formulations

work as announcements to articulate otherwise unavailable and thus potentially problematic embodied conduct that could otherwise be rendered unintelligible without verbal formulations. Finally, each of these components taken together allow Julius to display his own agency in determining his own courses of action, thereby displaying his status as a skilled competent member at odds with his potential status as a ‘newcomer’.

Jannick’s responses, in turn, confirm these findings. Jannick does not intervene, and even remains reticent to do so in the first instances where Julius attempts to delegate responsibilities. Limiting his participation in the first days to ‘only when necessary’ instances shows his ratification of Julius’ self-authorizing deontic rights, but not quite Julius’ deontic rights to control Jannick’s actions, or Jannick’s rights to intervene in Julius’ actions.

Studies on activity managing moves (Stevanovic & Monzoni, 2016), grammatical forms for joint action (Raymond et al., 2021; Rossi, 2018; Thompson et al., 2021, Zinken & Ogiermann, 2011) and combinations of verbal and multimodal conduct (Deppermann & Gubina, 2021a, 2021b) provide robust evidence for grammar for action formats (Fox, 2007) through the systematic study. One question this study raises is, what if the ‘default’ changes over time?

One contribution of this study is that the flexible routines that constitutive workplace activities serve as an interactional framework for participants to project and anticipate one another’s joint courses of action. Further research into this area could then reveal how particular formats for actions emerge out of social interaction.

Chapter 5: Longitudinal changes in the recipient-design of resisting a next course of action.

This chapter addresses the following research question:

RQ 2 How do newly acquainted co-workers manage deontic entitlements in disagreements about joint courses of action, over time?

-What is the overall structural organization for displaying resistance in joint courses of action?

-What are the verbal and multimodal practices for displaying and responding to resistance in joint courses of action? How are they organized synchronously and successively?

-How do changing practices for managing deontic authority and resistance intersect with processes of socialization?

I address these question with a longitudinal perspective by outlining the *practices* for accomplishing the resistance, including the verbal, embodied, and material resources, and how they are recalibrated from the first days of work (early data set) and a second project eight months later. I focus on how these resources are assembled and calibrated at various moments within joint actions and how this relates to how the participants manage their **deontic authority**, over time.

In the prior chapter, I have shown participants smoothly initiate next steps in laboratory work in more or less collaborative ways. This chapter turns to resistance as it occurs within the proposal sequences and how the deontic rights of participants are negotiated in the unfolding, emergent interactions generated by a resisting move. In the first section, I focus on the first two instances of resistance in the data. These extracts come from their first day of working together. Building on this, I analyze extracts from the early corpus taken in the first two weeks in which Julius and Jannick work together and then resistance in the later corpus from approximately eight months later.

5.1 Disagreements and non-compliance in the early data set: Displaying embodied non-compliance prior to verbal disagreeing turns

The following extract shows the first time in the data and the first time in which Jannick and Julius work together where there are disagreements about how to proceed. Starting from the first instance in interaction may reveal particularities of how certain practices – be it linguistic forms, gestures, or sequential moves – might sediment or change over time in ways that display participants' interactional competence of how to accomplish resistance in interaction.

Julius and Jannick have been aligning the laser beam which travels through several mirrors on the table, a process that occurs over the course of about 45 minutes. When this is accomplished, they will be able to guide the laser through a periscope into a detection area where they use various devices to measure aspects of the laser. Prior to this extract, Julius has encountered problems with aligning the laser beam through the mirrors. Julius stops measuring for several seconds (prior to the extract) and then formulates a problem across several turns (1.1-5). Jannick downgrades the severity of the problem (1.9) using a “good enough” assessment.

Extract_1

```

1  JUL:      I'm actually+ not sure if wαe:,
    A Jul      -----+to table.....->
    B Jan                               αto table->
2  (1.2)      (0.5)+(0.2)α(0.5)#
    A Jul      ....+rests r elbow on table->
    B Jan      .....αstops moving to table->
    C Fig                               #fig.1

```

*Figure 1*

```

3  JUL:      n%ot only adjust%# this;% .heh heh%#
    A Jul      %.....%taps mir.%,/,/,/,/,/,%
    B Jul                               *.....*looks to JAN->
    C Fig                               #fig.2          #fig.3

```



Figure 2



Figure 3

```
4 (0.5)
5 JUL:    if* (.) it changes.
  A Jul   --*to table->
6 (0.5)
7 JAN:    .HH
```

8 (1.0)

9 JAN: ∇_{ζ} .HH yeah well ∇ as ζ as α_{ζ} long as we are σ_{α} thr $\zeta\sigma$ #ough

A Jan ∇ 3 head shakes ∇

B Fig

#fig.4



Figure 4

B Jan ζ ζ left palm up ζ retracts----- ζ palm up->

C Jan -> α steps forward-- α stops->

D Jan σ σ r palm up->

E Fig #fig.5



Figure 5

```

10 JAN:      σζwithσς both σςI wouldσς say# (.)σζα .hhhσς go%od enough.
A Jan      σ,,,,,σpalm-upσ.....σpalm openσ,,,,,σ
B Jan      ς,,,,,ςpalm-upς.....ςpalm openς,,,,,ς
C Jan
D Jul
E Jan

```

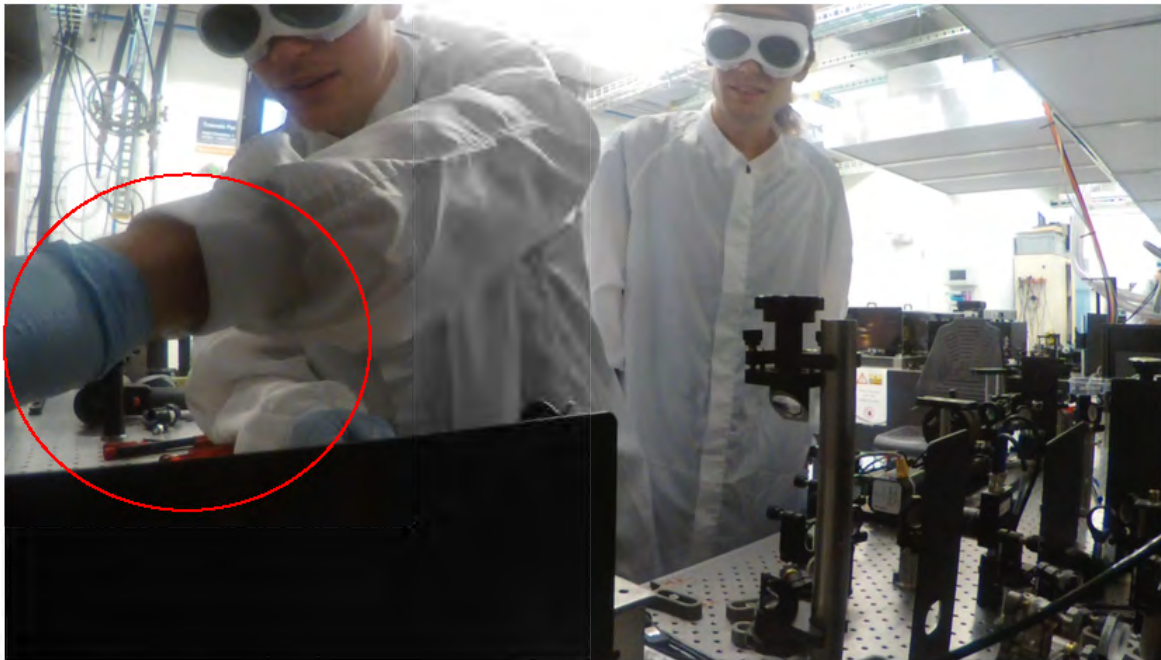


Figure 6

11 (0.8) (0.2)+(0.6)%
 A Jul +.....->moving to mirror->
 12 JUL:→ yeah but+ I think#% we are: not% that.
 A Jul+stops->
 B Jul%grabs mirror%grabs second mirror,adjusts->
 C Fig #fig.5.16
 13 JAN: because we will change the cavity anyway °I mean°.
 14 (1.9)
 15 JAN: we will corr[ecting that# jus:.hhh >many many< (0.6)
 16 JUL: [yeah okay. >ah! good<
 B Fig #fig 7.

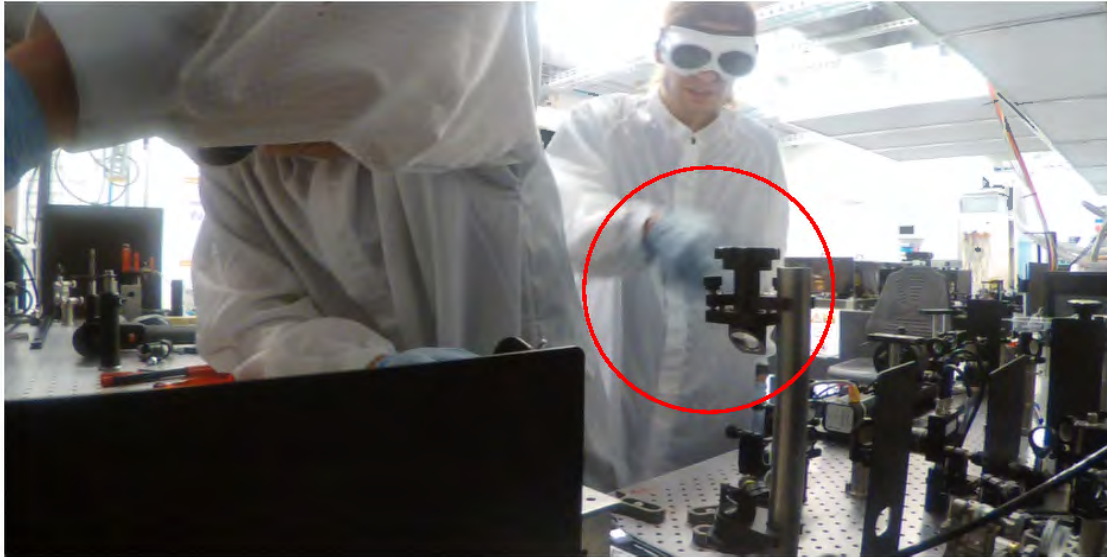


Figure 7

17 JAN: more (0.7) spots.

The first signal of trouble comes in the formulation of Julius' problem. Several signs indicate not only a problem he tries to describe, but issues with verbalizing the problem 11.-5 (lengthy intraturn pauses, 'awkward' syntax). Furthermore, Julius suspends the action of adjusting the mirror, rests his elbow on the table and points to the potential trouble source (1.3c) then turning his gaze to Jannick, (1.3d) to seek a response. Julius pursues a description of the problem (1.5) and Jannick responds after some delay (1.6-7). Through Jannick's "good enough" response (1.10) he orients to the closing of the sequence Mondada (2009) displayed through various shrugs, palm-up gestures (FIGS) and backing away from the table. In the slot where a second assessment (Pomerantz, 1984) or acceptance of the closing (Mondada, 2009) would be relevant (1.11) Julius does not respond verbally and instead begins trying to manually align the mirrors again. He begins to articulate his disagreement which is notably placed after engaging in the action that Jannick implicated as unnecessary in his prior turn. *Yes but* in English, often been described as a concessive, suggests one party concedes to and this disagrees with some aspect of the turn (Couper-Kuhlen & Thompson 2000). Here it seems more likely, that this is an outright disagreement. On the one hand, 1.12 has the nature of a dispreferred response (Pomerantz, 1984; Sacks, 1987). The turn comes in late on the verbal level. On the other hand, examination of Julius' embodied conduct shows that he already begins the embodied preparations to do the action that Jannick deems unnecessary before Jannick's turn is finished (1.10c).

Like extract 1, extract 2 comes from the first day Jannick and Julius are working together. They are still aligning the beam and have agreed upon a course of action where Julius checks the beams' alignment on the mirrors individually using an infrared viewer, then reports their alignment to Jannick. At the beginning of the extract, Jannick is directing Julius on which mirrors to check (1.1-4), and Julius proceeds with carrying out the process of checking the alignment (1.5). After a second directive from Jannick (1.9-11), Julius breaks with the course of action. In the following sequence, he stops checking the mirror and results in a twofold resistance, where neither participant agrees upon a course of action.

Extract_2

- 1 JAN: I would say its okay.,
 A Janσpoints->
 B Julturning->
 2 JAN: how it is here+σ#?
 A Jan -----σtouches mirror->
 B Jul+stops
 C Jan #fig.1

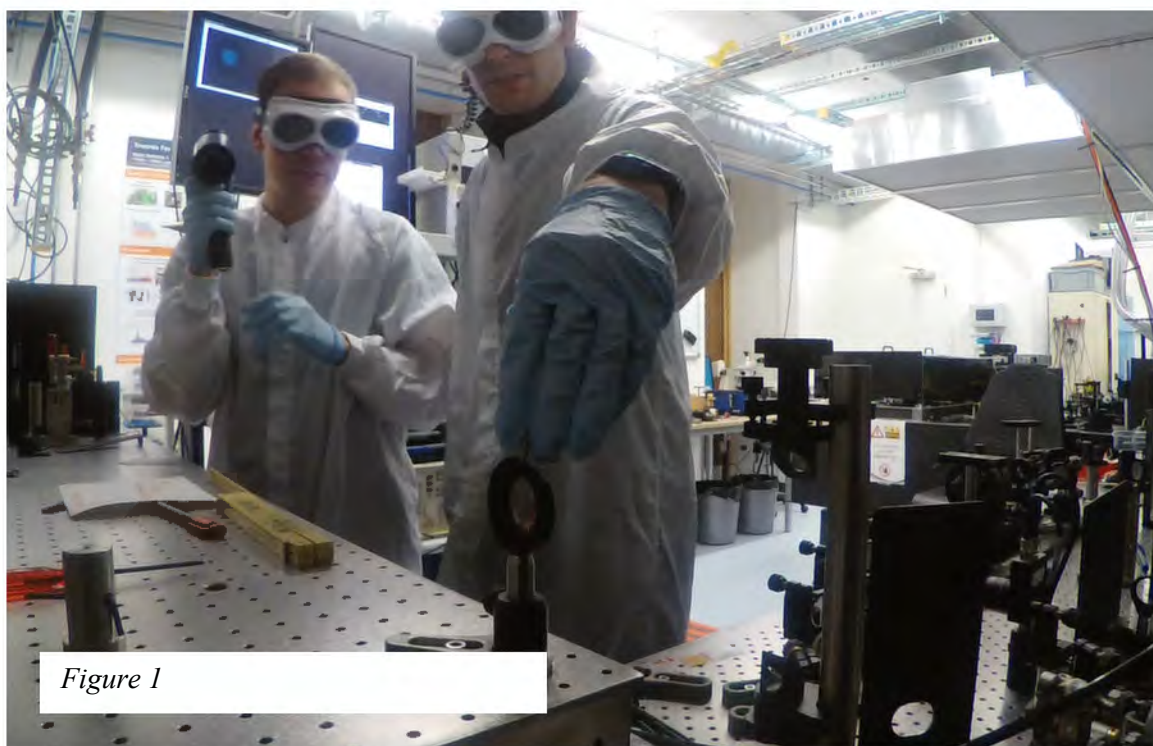


Figure 1

- 3 (0.5) +σ(0.5)σ
 A Jul +moving to mirror->
 B Jan σopens mirrorσ->
 4 JAN: if you σcheck right nowσ.

A Jan -----σ,,,,,,,,,,,,,,,,,σ
 B Jan αsteps back-----α
5 (7.3) (2.4)+%# (4.9)
 A Jul+stops
 B Jul %adjusting mirror and looking with viewer->
 C Fig #fig.2



Figure 2

6 JUL: yeah its off.+
 A Jul -----+steps back->
7 JAN: °σso I wouldσ,
 A Jan σquick pointσ
8 (0.5) (0.5)%
 A Jul -----%removes hand from mirror->
9 JAN: try%+α the next one+αζ
 A Jul ,,,%hand to chin->
 B Jul +steps back----+stops->
 C Jan αsteps back----αstops->
10 (1.0)→ (0.2)σ(0.3)σ(0.4)σ#
 A Jan σ.....σpointσ
 B Fig #fig.3



Figure 3

```

11  JAN:      σthe peri*scαo:peσ,
      A Jan      σ,,,,,,,,,σ
      B Jul              *looks to periscope->
      C Jan              αsteps fwd->
12  (3.0)→ (0.4)%(0.3)•(1.2)%÷#(1.1)÷*
      A Jul      %.....%sets viewer on table->
      B Jan      •looks to viewer in Jul's hands
      C Jul      ÷.....÷leaning on table->
      D Jul      *looks to detection->
      E Fig      #fig.4

```

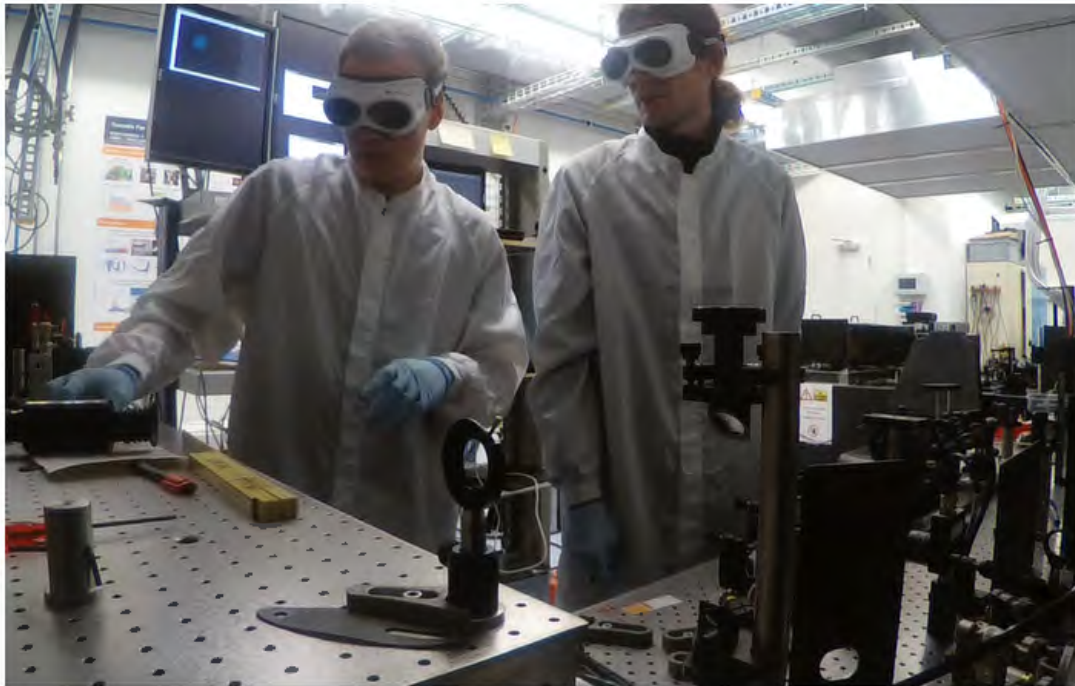


Figure 4
13 JAN:

or::÷# pfff $\sigma(0.3)$

A Jul÷leans on table->

B Jan σ reaches for viewer->

C Fig #fig.5

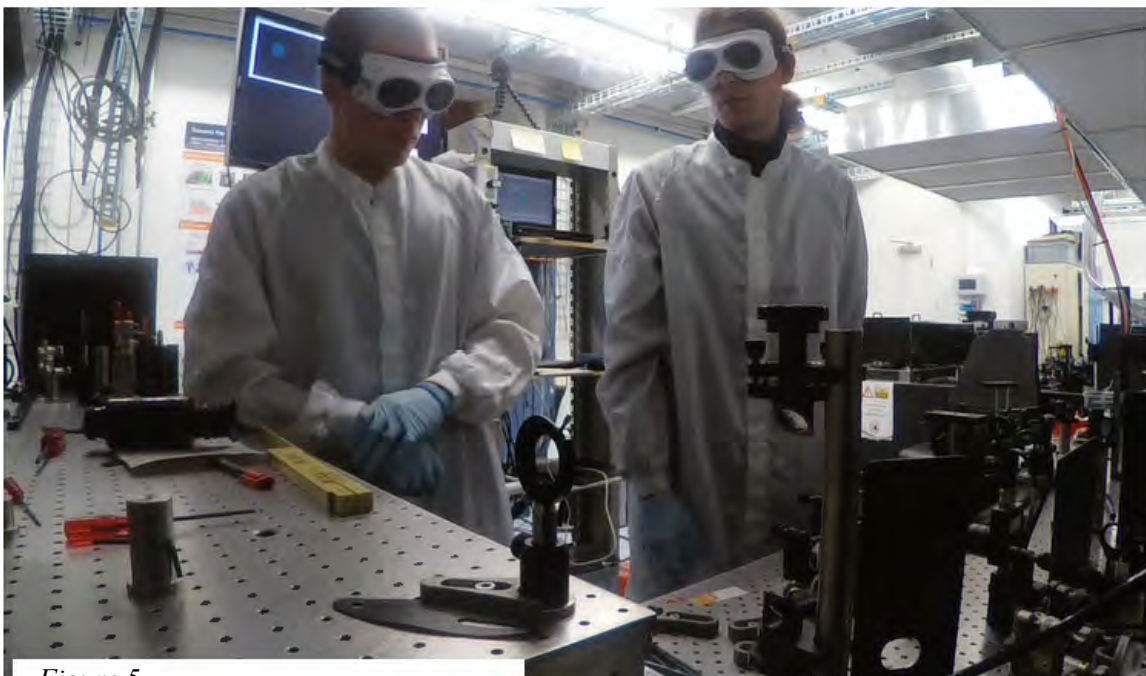


Figure 5

14 JUL:→ BUT (.) σ isn't it easier +then σ (.)+ # to j:ust (.)+ adjust

A Jan σ picks up viewer----- σ holds->

B Jul +.....+points-----+gesticulates
 C Fig #fig.6



15 **Figure 6** the detection+? down+ here?
 A Jul ----->+,,,,,,+>
 16 **JAN:** ..PHH* (0.6) .hh Δ(1.4)Δ y:eah ΔyeahΔ
 A Jul ->*looks to JAN->
 B Jan Δshakes head slightlyΔshakes head 3xΔ
 17 **JAN:** we can at some pointασ.
 A Jan αleaning over table->
 B Jan σreaches for mirror->
 18 **JUL:→** because [(.) this is muchα% (.)σ easier# (.)%* to acce:ss,
 19 **JAN:** [yes.
 A Jan ->αstops, inspecting with viewer
 B Jul %walking to detection%stops->
 C Jan ->σadjusting mirror->
 D Jul *looks to JAN->
 E Fig #fig. 7

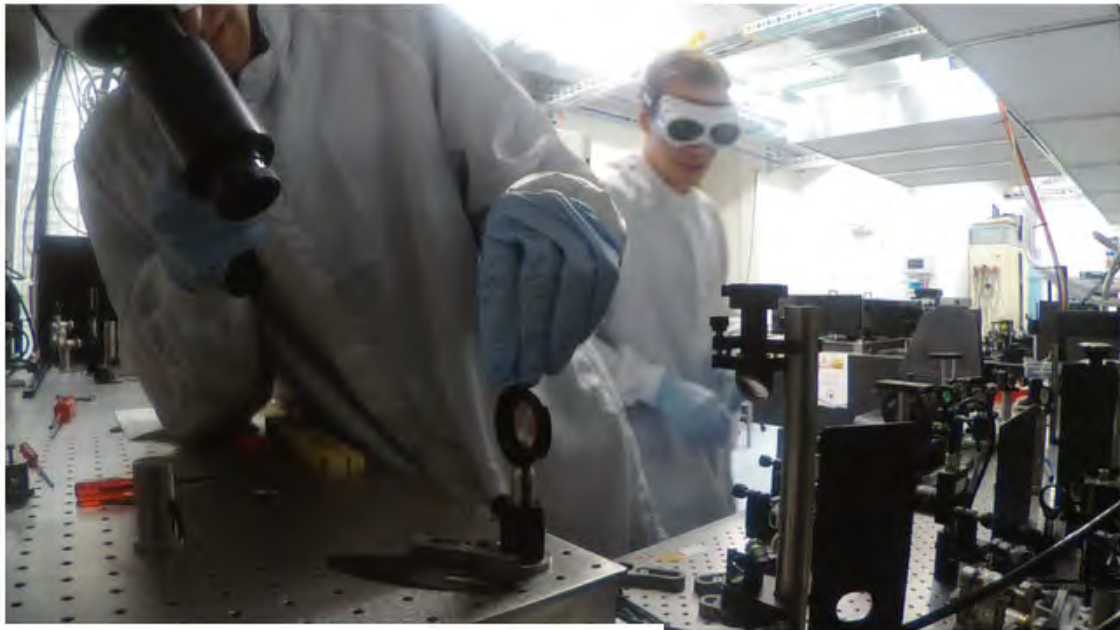


Figure 7

In 1.2-9 Jannick is instructing Julius on which mirrors to check. Julius uses the infrared viewer to adjust the mirrors, aligning the laser then reports to Jannick (1.6) a problem with the alignment. Jannick provides a next step 1.7 that is potentially recognizable through Jannick's pointing gesture and the prior activity that he and Julius have been engaged in and directing Julius to check a next mirror. Julius places his hand on his chin and steps back from the table (1.9b,c), and Jannick verbally nominates the action (1.9) pointing again, naming the object to check (1.11). In 1.12 Julius places the viewer on the table and is therefore unable to perform the action Jannick nominated. Troubles rise again. Jannick's turn in 1.13 signals disalignment, and he begins reaching for the viewer displaying that he will carry out the action himself. Julius only verbalizes his disagreement (1.14) after Jannick has prepared to resume checking the mirrors. Julius' turn tilts Jannick's response to a preferred response (negative polar interrogative design, Heritage & Raymond, 2021).

The first instances of resistance discussed above illustrate several interesting points. First, we see that the laboratory work carried out by Jannick and Julius is hardly a process of following procedural steps outlined in a set of instructions. Both participants have deep knowledge of their subject, the skills and material equipment to carry out their procedures and analyze the process of constructing and aligning the laser as they go. What the participants *actually do* in the laboratory rests upon the interactional moves each participant makes as they incrementally work through these processes in real-time, in an embodied and situated way which presents a second point of interest. In the highly object-centered and multiactivity laboratory setting,

disagreements or resisting moves extend beyond the exchange of verbal turns between participants and encompass a range of modalities, including embodied conduct and the manipulation of objects and how these are organized together to format different methods of resistance.

Considering the last point above, let's turn to some issues in how the participants in this data, working in a dense semiotic environment, go about their work. Prior research in science and technology studies has often focused on the broader sociological processes and interactions over time in the production of scientific work – sometimes over several years (Latour & Woolgar 1979) – and on the relationship between scientists and their objects of professional vision, tools, artifacts and inscriptions (Amman & Knorr-Cetina 1988, Lynch 1985). Still, less research has focused on the joint production between scientists in how they go about producing scientific work. Most of this research has analyzed encounters between experts and novices (Alač 2011; Goodwin 1994, 2018; Alač & Hutchins 2004; see also Zemel & Koschmann 2011 for surgical settings) with scarce studies on interactions between peers. One notable exception to this is Tuncer and Haddington (2019), who analyzed how peers jointly analyze problems and arrive at solutions with objects. In this data, joint decisions upon which courses of action to be carried out in the lab are frequently met with resistance by one or more participants. As shown in the preceding chapter and extract 2 here, engaging in or resisting courses of action is accomplished by participants observing not only the materials of their work but also how co-participants (dis)engage with these materials.

5.2 Early data set and summary of findings

Over the course of the first data set (November 2nd-14th, 2018), I observe that Julius diversifies his practices for resisting moves. Initial resisting moves are first formatted by displaying embodied non-compliance with the proposed course of action. Verbal turns are delivered only after already (dis)engaging from the proposed course of action. These turns are typically delivered using a *but* or *yes but* format, followed by an account for the resisting move. The accounts are delayed, and despite their orientation to taking some unwarranted or problematic course of action, Julius still treats the embodied course of action as unilaterally relevant in that moment, thereby contesting Jannick's authority to control the action as well as the joint-ness of the actions involved. Over time, and particularly in the later data I set, I observed that Julius still uses prototypical formats such as *yes but* while increasing his use of other formats, and *I would X* (Chapter 6 on *I would say*). In the following section, I look at how Julius adapts his

methods for resisting courses of action that result in the discursive organization of joint decision-making sequences.

5.3 Practices for resistance in joint courses of action: later data set

In the later data set (July 26th-September 3rd, 2019), Julius' moves for delaying and thereby rejecting a forthcoming action become increasingly hedged. He uses syntactically complex combinations of linguistic chunks (*let's X, I would X*). The use of such constructions shows an increasing context-sensitivity on Julius' part in that he projects an upcoming disalignment and establishes reciprocity for lengthy, multi-unit turns that account for the disagreement. In addition to increasingly projecting resistance, Julius also displays an increasing orientation to Jannick as the recipient of his resistance by allowing interactional slots for Jannick to respond to his turns. Resisting moves in the later data set represent more prototypical joint decision-making sequences where participants smoothly exchange turns at talk and turns at manipulating objects in ways that allow them to establish joint professional vision on the physical items of their disagreements.

In our first extract from the later data set, Jannick is proposing a process of “folding” the mirrors. In this process, the arrangement of mirrors that create and guide reflections would be adjusted to maintain the distance between two reflections while decreasing the physical space by adding mirror. So, if the distance between two mirrors was one meter, the participants could move the mirrors closer together (half a meter) and add a third mirror at a different angle which would maintain the distance of a meter that the beam travels while reducing the space on the table.

Extract 3

```

1 JAN:      yeah I ζ+mean I would fold this+ζ arm,
A Jan      ζ.....ζ points, moving->
B Jul      +,,,,,,,,,,,,,,,,,,,,,+LH to chin->

2 JAN:      ζso the:%ζ (0.3) ts. so shζo:rtenσ% tho#is distζance.
A Jan      ζgesticulatesζ.....ζpts w RH-----ζ,,,,,,
B Jul      %.....%leans elbow on table->
C Jan      σ...σpts w LH-σ,,,,,,
D Fig      #Fig.1

```

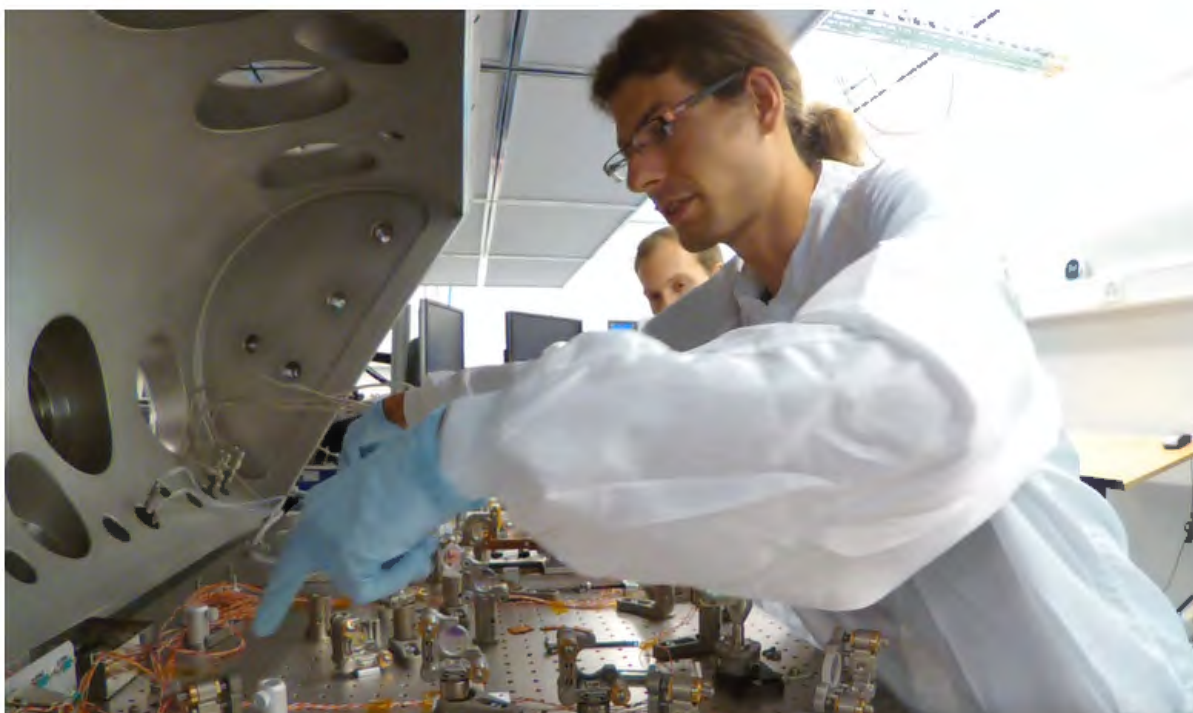


Figure 1

3 (1.6) (0.3)α(1.3) #

A Jan αsteps back from table->

B Fig #fig.2

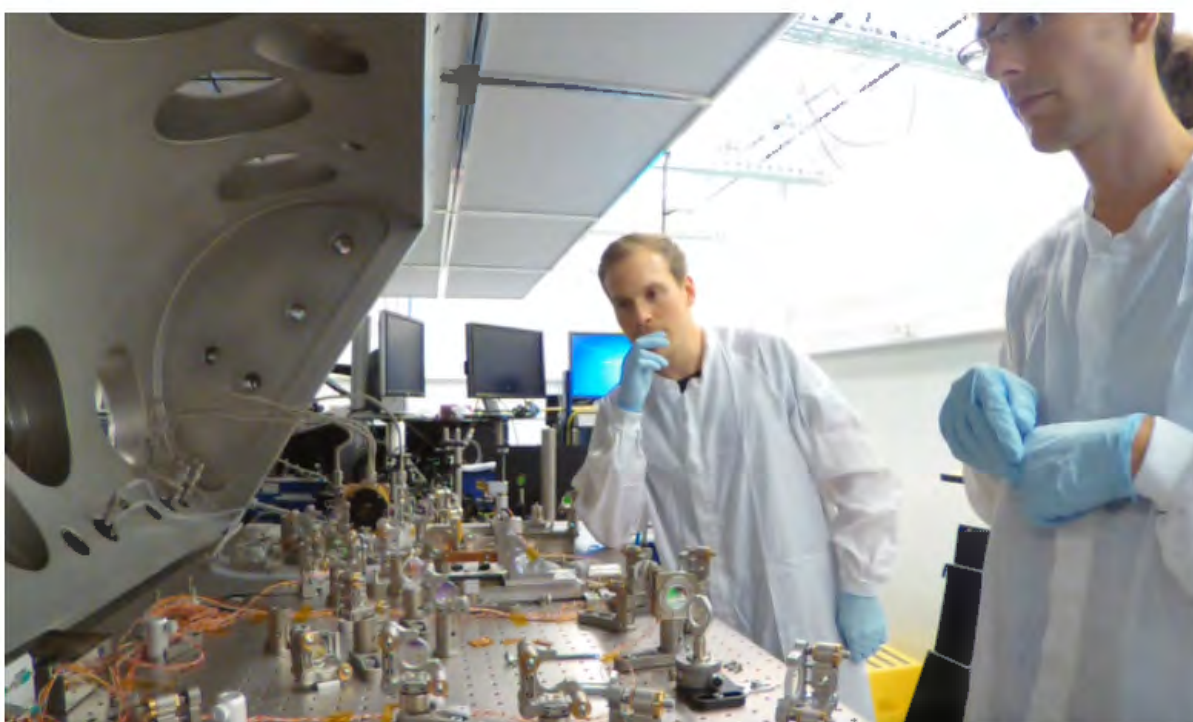


Figure 2

4 JAN: >and I- yeah< and çI mean at#ç th↑is po:int it might be cool

A Jan çflashes index fingerç

B Fig

#fig.3

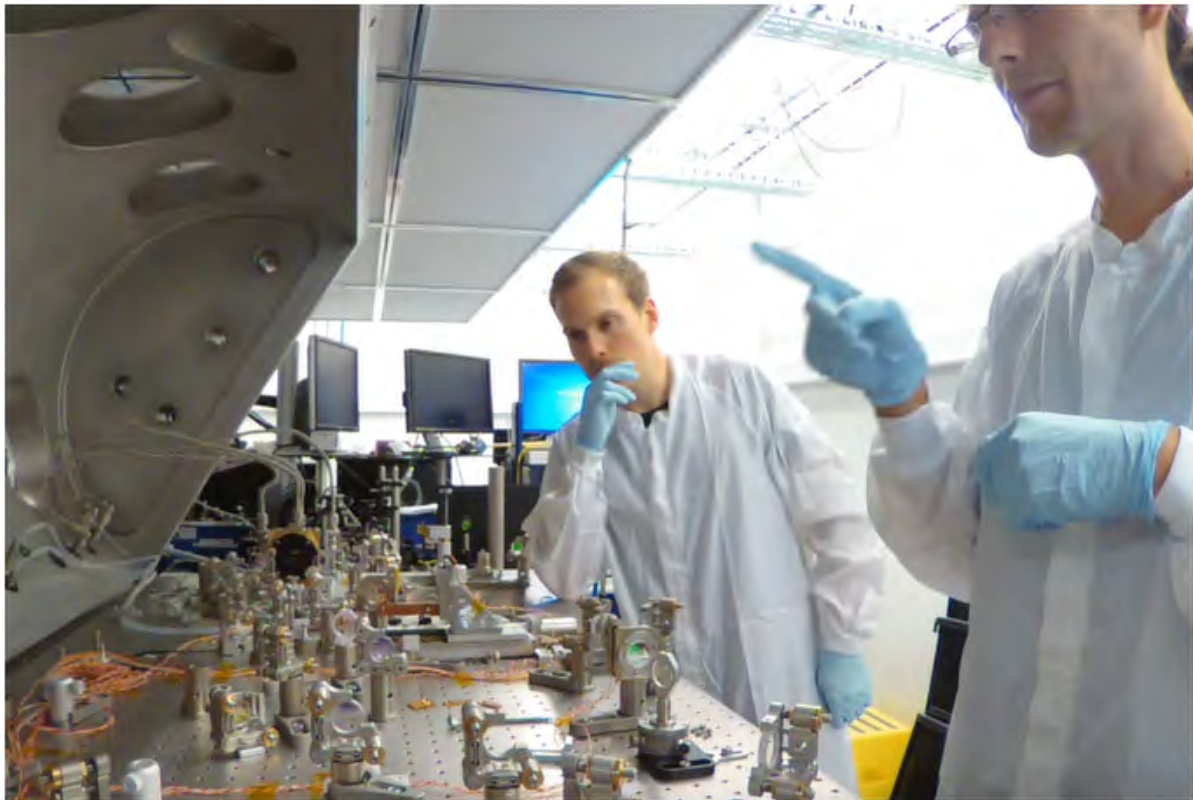


Figure 3

5 JAN: because ζ you would not ζ need not to be on ζ the ζ edge of α the

A Jan ζ ζ points, gestures- ζ ,,,, ζ

B Jan $\rightarrow \alpha$ to JUL-- α tbl- $\rightarrow$

C Fig #fig.4 #fig.5



Figure 4

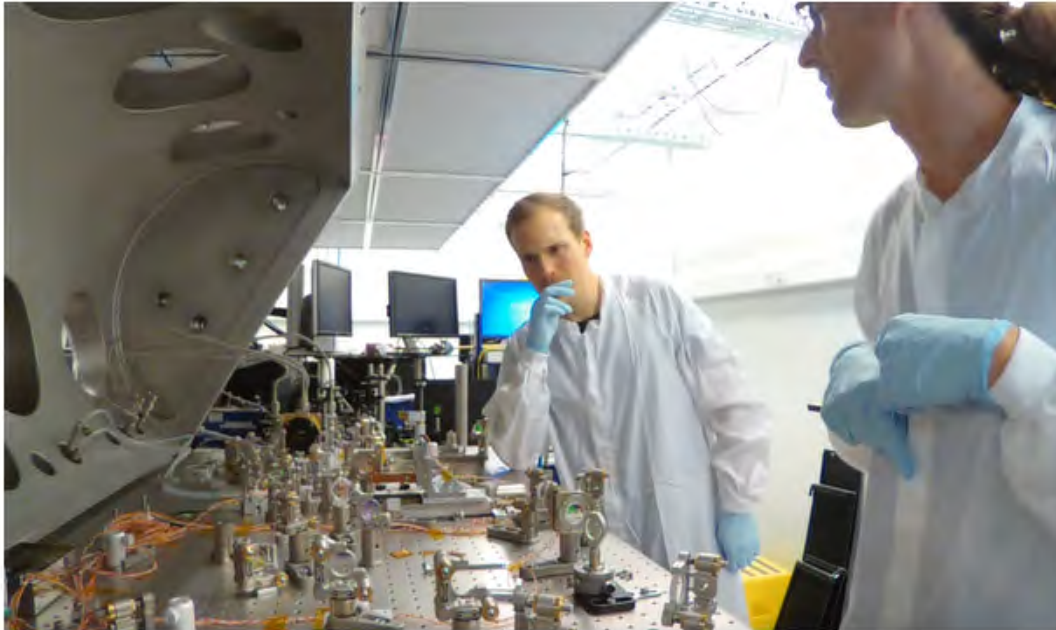


Figure 5

```

6  JAN:      mirror. .HH
7  (1.6)
8  JAN      because we can oput it behind this cone.
A Jan      σ.....σpoints-----σ,,,->
9  (2.6)      α(0.4)ασ(0.5)α(1.3)*α(0.4)
A Jan αsteps backα-αto sideαsteps to side->
B Jan      ,,,,,,σ
C Jul                                *looks to table->
10 JAN:      °probaαbly°.
A Jan      -----αstops->
11 JUL:      okay[: σ#uh::σ+(0.4)α(0.9)
A Jan      σwaves LH
B Jul      +arranging materials->
C Jan      αleaning over table->
D Fig      #fig.6

```



Figure 6

12 JAN: [but.
 13 JUL: lets say I: α (0.9) wouldn't say α NO: α ?=
 A Jan-> α pauses----- α ,,, α steps to side->
 14 JAN: =%mmhm.
 A Jul %moving to table->
 15 JUL: BUT %+(0.6) lets first *thi: Δ nk#, (0.2) Δ
 A Jul ->%stops->
 B Jul +adjusting mirror w screwdriver->
 C Jul *looks up->
 D Jan Δ nods 2x-- Δ
 E Fig #fig.7

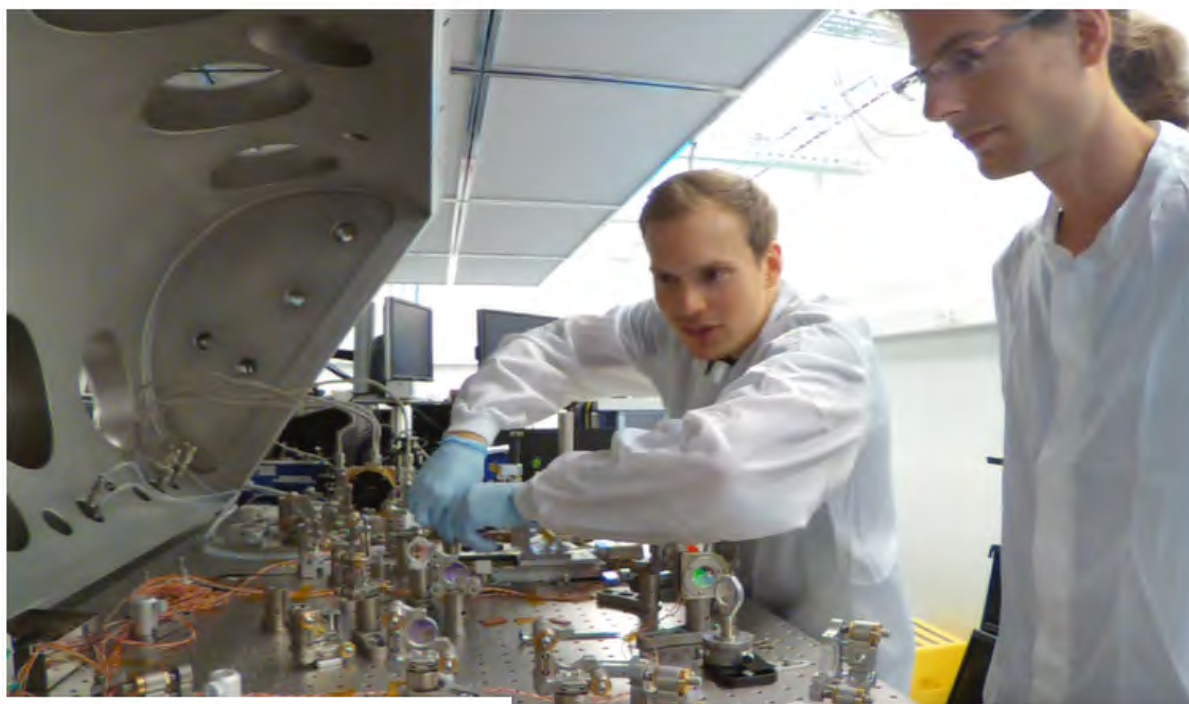


Figure 7

16 JUL: because if I fold it, =

17 JAN: =+yeah=

A Jul >+, , , , ->

```
18 JUL:      =I have the issue with+ aligning- #(1.4)+ the stage.#
```

[illegible]

B Fig #fig.8 #Fig.9

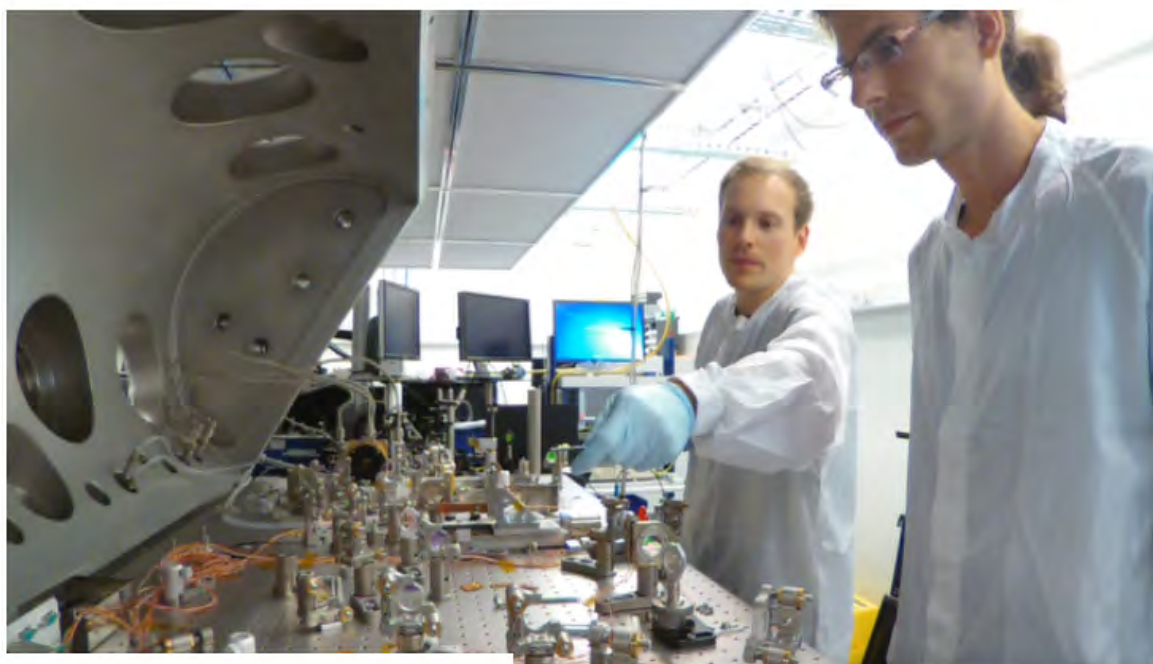


Figure 8

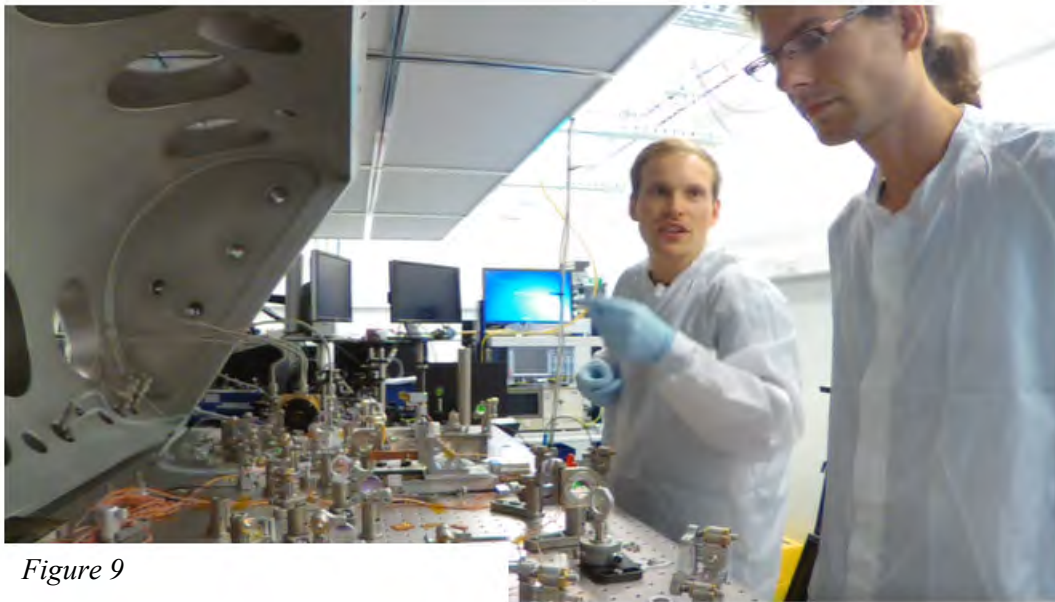


Figure 9

Jannick's proposal starts in line 1 and ends in line 2. The proposal, formatted as a conditional *I would* statement, co-occurs with various embodied moves: He points to the first mirror with his right hand (1.1a) and then to the second mirror with his left (1.2c) creating a visible representation for Julius to observe which specific mirrors he would shorten the distance in the folding process. During Jannick's turn, Julius adopts a thinking face posture with his left hand to his chin (1.1b). He then rests his left elbow on the table (1.2c) giving Jannick the conversational floor and the physical space of the table to work through his proposal. At the end of Jannick's proposed course of action (1.2), Jannick moves back from the table during a 1.6-second pause (1.3), still observing the table as if deliberating on his own proposal and provides a post-positioned account (1.4-6). Jannick's turn in line 4 begins with a conjunctive *and* followed by a restart with an *I mean* prefacing assessment indicating that this turn is still part of a multiunit turn. He briefly flashes his index finger upward (1.4a) and then, in line 5, points again to a further mirror, indicating a point on the table where they would gain space by not having mirrors so close together. After another 1.6-second pause (1.7), Jannick continues incrementally building his account, this time with a *because* clause, again pointing (1.8a) to the same mirrors in line 5 and reformulating his prior account.

At this point, Julius' forthcoming resistance becomes anticipable. Jannick orients to the lack of response in lines 7 and 8, incrementing a hedged *probably* delivered in a lower voice (1.10) and followed by a lateral waving gesture (1.11a) and *but* which co-occurs just after Julius' first response in the extract (1.11). The responsive hearably delays an upcoming turn. The *okay* is

delivered with prosodic stress and lengthening on the second syllable, a lengthened *uh*:, and a 1.5-second pause where Julius breaks his resting posture and begins arranging materials on the table (1.11b). In line 12, Julius further hedges his response using multiple, frequently used TCU 'packages': *let's say, I wouldn't say, let's first think* (1.13-15). In line 13, Julius's *I wouldn't say no*, is delivered after a notable 0.9-second pause after the pronoun, then with turn-final rising intonation, projecting an upcoming, multiunit turn. Jannick orients to this with the continuer *mmhm* in line 14 in a similar way that participants display orientations to roles of storyteller and recipient in conversational data (Stivers 2008). Julius's turn here secures the floor for a prospective response, in this case, a 'telling' a disagreement with the action Jannick has proposed. The *I wouldn't say no?* through its negation, high-rising intonation strongly projects a negative response. Then, the conjunctive *but* followed again by a *let's first think* (1.15) then followed a *because* clause, which justifies Julius' still projected (though not explicitly claimed) refusal of the proposal, highlighting a problem that Jannick has possibly not taken yet into account (1.15). In other words, while folding the arms may save space, it may also cause problems with the alignment.

We can observe in this extract several phenomena related to how Julius and Jannick delicately impinge on one another's **deontic authority** in handling resistance in the later corpus. Their turns at talk become more extensive, multiunit turns, and the interactional architecture resembles more of a joint-decision making process, with one participant giving extended turns while the other listens and observes. This contrasts with the often competing and overlapping talk and embodied actions seen in the early corpus and the first examples of resistance discussed at the beginning of this chapter (extracts 1 and 2). In their cross-sectional study on disagreements by L2 speakers of French, Pekarek Doehler & Pochon-Berger (2011) identified multiple aspects of students' disagreements. Among those included was the 'discursive thickness' of disagreements and "whether or not [participants] display of disagreements is followed by accounts, exemplifications, and other argumentative moves that strengthen or mitigate the oppositional stance" (p.10). In examining Julius' moves (1.18-20), we see that his disagreeing turn, while never formulated as an on-the-record "no", is delivered through a lengthy account using complex syntactic conditionals that highlight his opposition to Jannick's proposal through the presentation of a conditional problem (aligning the stage) that could arise if they were to fold the stage. In this data, such discursive thickness is also related to the embodied participation frameworks (Mondada, 2009) achieved by Julius and Jannick. The

embodied and discursive space in which one participant can gesture towards the table's features and establish relevant domains of scrutiny (Goodwin 1994, 2003) through pointing gestures is a mutual accomplishment that rests on the recipient's willingness to cede the floor and material objects.

A second notable feature in how the deontic authority is handled in this extract relates to the pronominal and modal shifting throughout the extract in Julius and Jannick's various turns. Jannick's initial proposal is framed first with an *I would* conditional followed by a proposed action (1.1) which then assesses that action using an anaphoric pronoun and another conditional (*it might be cool*) and finally delivering a second-person conditional because *you would need not* when referring to the current setup of the laser cavity. Julius' turns move in a similar pattern, first mirroring Jannick's first-person plural (we can, 1.8) utterance with *let's say* and then shifting to the first-person conditional (*I wouldn't say*), then the 2nd person hortative (*let's first think*). In the account that follows, as mentioned above, Julius shifts back to the 1st person *because if I fold it I have a problem with aligning the stage*. Note the two justifications in the extract in lines 5 and 16-18. Here both participants use pronouns referencing Julius. Both statements refer to the current setup of the stage. An ethnographic point might explain this particular choice as well. Julius is the primary organizer of this laser setup in the later corpus, while Jannick works with Julius intermittently. In contrast to the abandoned modal declaratives in the early corpus, the declarative statements are realized fully in the later corpus.

A third and final point regards the positioning of the accounts in Julius' resisting move. In comparison with the extracts in the earlier corpus, here, the *because*-clause initiated account does twofold work as a 'double-barrelled' (Schegloff 2007) or 'composite' (Rossi 2018) social action. First, its position within the sequence displays a clausal account for the resistance. The account is not added on as an increment to manage lack of recipient response as in the prior extracts (see also Houtkoop-Steenstra 1990 and Stevanovich 2015 for post-positioned accounts). Instead, it becomes the core of the resisting move, a kind of blended action. It is only after further lack of uptake (1.20) when Jannick quickly points to the stage and utters a non-lexical vocalization (1.21) that Julius pursues his account with an assessment of the current alignment (1.22), demonstrating how participants also orient to a heightened sense of accountability in terms of providing their interlocutors with a justification for *why* they display resistance to the proposal before ceding the floor to the interlocutor.

While the proposal sequences may result in more lengthy turns that resemble a kind of joint decision-making speech exchange system (Asmuß & Oshima 2012, Stevanovich and Peryäkylä 2012), they may also occur quickly and fluidly while retaining the complex multimodal gestalt characteristics seen so far. The next extract shows this. Following the extract, Jannick and Julius are debating the placement of a motorized kinetic stage that hosts a small aperture that can focus the laser beam through a digital operation. At the beginning of the extract, Julius and Jannick are both leaning over the table, and Julius is positioning the stage to align with the threaded holes on the table where it will be secured using screws in a way that allows the aperture to reach a specific mirror on the table.

Extract_4

06 JUL: I would like to have it as close as possible,
 07 (0.3)
 08 JUL well o:kay,
 09 (0.9)
 10 JUL that would work#
 A Fig #fig. 1



Figure 1 – Julius manipulating the stage

11 JAN: TCH! wΔait.
 A Jan Δ...reaching->
 12 JAN: looΔ#k how much space you ha%ve.
 A Jan ...Δpoints----->

B Jul

%,,, ->

C Fig #fig.2



Figure 2

13 JAN: Δ+so the stage wi%ll be ΔsomewheΔre here.#Δ

A Jan Δ..... Δ graspsΔ slides Δ holds ->

B Jul ,+releases stage->

C Jul ,,,,,,,,,,,,,,%leans back from table->

E Fig #fig. 3



Figure 3 – Jannick takes the stage

14 (1.4) $\Delta\%(0.5)\%(0.2)\Delta(0.7)\% \#$

A Jan Δ adjusts slightly Δ releases

B Jul $\%$ leans on table--- $\%$ ->

C Fig #fig.4



Figure 4

15 JUL: → yes +but I wanna be:: +really close to +#here.

A Jul +.....+points to mirrorδ+,,,

B Fig #fig.5.



Figure 5

16 JUL: → +so if we li:+ke put it he:re,+∂# (.) I'm too far.

A Jul +.....+moves stg to left+,,,,,,,,,,,,,

B Jan ∂raises LH.....->

C Fig #fig.6



Figure 6

17 (2.9) % (0.5) ∂ (0.2) % ∞ (1.2) ∂ ∞
 A Jul % , , , , , , , , % steps back ->
 B Jan -> ∂ reaching ∂ grabs stage ->
 C Jan ∞ leans over stage ∞ ->

18 JAN: ∂ or what uh :: ∂ like that #?
 A Jan ∂ adjusting placement ∂ holds ->
 B Fig #fig.7



Figure 7

```

19 JUL:      yeah+ so maybe+ between the mirror a∞nd aperture +two
A Jul              +.....+grasps stage-----+releases->
B Jan                                  ∞leans back, looks to ap->
20      ce*ntimeters or some+thing like this#.
A Jul      *looks at JAN->>
B Jul              +clasps hands->>
C Jul                                  #fig.8

```



Figure 8

21 (4.9) ((Jannick nods slightly, moves stage slightly))
22 JAN: yes.

Julius is carefully adjusting the placement of the stage in lines 6-10 as he verbally assesses the placement (multimodal conduct not transcribed here). In line 11, Jannick utters an imperative *wait*, prefaced by a vocal click, while already extending his left hand in what ultimately becomes a pointing gesture which co-occurs with the imperatively formatted *look* (1.12, 12a). This imperative *look how much space you have* counters Julius' prior assessment of the positioning of the stage (1.10). Julius does not direct his gaze to the pointing gesture but instead

begins releasing his right hand from the stage near the end of Jannick's utterance (l.12b). Line 12 ends with falling final intonation but there is no-gap between lines 12 and 13, and in line 13, a declaratively formatted assessment of the positioning stage. Julius and Jannick's transfer of the stage happens smoothly and almost in synchrony (l.12a, 12b) as Julius leans back (l.12c), offering the floor to Jannick to manipulate the object. After this turn, Jannick continues to slightly adjust the position of the stage (l.14a). Julius adopts a resting posture (l.14b). Julius holds this posture through his turn (l.15-16) using the *yes but* format as he first points to the mirror, then slightly adjusts the stage (l.16a). Here, Julius uses an *if*-clause which co-occurs with his placement of the object and makes publicly visible and verifiable to Jannick his assertion that Jannick's declared statement of where it will be is "too far". Just after the clause, Julius retracts his hand from the stage and moves backward, allowing Jannick the space to lean in, grab and adjust the stage and inspect for himself (l.17). After this deliberation, Jannick makes a try-marked bid for the stage's position (l.18) which Julius confirms with a more explicit explanation of the distance (two centimeters between the aperture and mirror, l.20). Julius and Jannick's claims are, on the one hand, more assertive than in the early corpus. They utilize conditional clauses and declarative utterances as factual assertions for what the results of their work will or should be. On the other hand, at each turn they implicitly open the floor for their co-participants to manipulate the object, observe and confirm for themselves the implications of the positioning of the object.

5.4 Discussion: Changing Practices for Managing Deontic Authority and Resistance Over Time

In this chapter, I have examined how moments of resistance between Jannick and Julius in their daily laboratory work become emergent, coordinative routines over time. Resisting a co-participant's proposed, forthcoming, or ongoing action involves the embodied coordination of multiple resources, including language and indexical gestures that point to and highlight domains of scrutiny within the participant's material world and the embodied space between participants that successfully allows one participant to take the floor – or in this case to take objects or access the table in formulating and responding to resisting turns.

The first finding relates to how sequences of resistance are not just single actions but embodied constellations of changing participant frameworks. The complex multimodal gestalts that are part of Julius and Jannick's daily work are both emergent and emerging actions (cf. Auer and

Pfänder 2011). They arise and unfold in real-time in response to the material progress of the practical lab work and to the publicly observable and accountable actions of co-participants. In the very first extracts, I have tried to show how the unfolding resisting actions of Julius and Jannick come with little projective moves of the resisting action. Both participants alter the trajectories of their manual actions unilaterally, in *media res*, thereby resulting in disfluencies in terms of sequential organization. Over time, participants increasingly use projector constructions to suspend forthcoming actions and bilaterally alter the courses of action. Changes in speakership also index and project change in taking turns with objects and allows participants to visibly act upon their scientific objects and create shared understandings of potential problems. In this chapter, I concur with Tuncer and Haddington's (2019) rebuttal to Knorr-Cetina's assertion that scientific objects are 'unproblematically readable' while adding that participant's actions with scientific objects are equally subject to scrutiny, revisions, and larger issues in understanding the accountability of what participants are doing and *why* they are doing *that* particular action *now*. As Goodwin (1994) notes:

First, the power to authoritatively see and produce the range of phenomena that are consequential for the organization of a society is not homogeneously distributed. Different professions — medicine, law, the police, specific sciences such as archaeology — have the power to legitimately see, constitute and articulate alternative kinds of events. Professional vision is perspectival, lodged within specific social entities, and unevenly allocated. (p. 624)

In other words, professional vision is always contested vision. I would argue here that professional vision is not simply unevenly allocated among different professions but among the various professionals within communities of practice and rests upon the way in which the participants in this data, professionals within their domain, mutually monitor one another. As Goffman (1963) put it:

Each individual can see that he is being experienced in some way, and he will guide at least some of his conduct according to the perceived identity and initial response of his audience. Further, he can be seen to be seeing this, and can see that he has been seen seeing this. (p. 16)

The analysis presented in this chapter is one step to furthering this argument and discussing how it is that participants negotiate this in the moment, and perhaps more broadly, how changes

over time in participation (Lave & Wenger 1991) among professionals are indexed through interactive practices. If this is true, then it should be observable to analysts and participants alike. Of course, participants in my data (and probably in many fields) do not simply go around and comment on the development of one another's professional expertise. So where, then, might we look for and see changes over time?

By looking at instances of resistance, I hope to have shown that the management of deontic rights and asymmetries is one way of gaining insight into the developmental and socialization processes of L2 speakers in institutional contexts. Consider what's at stake when resisting a participant's proposal or somehow suspending and re-orienting a course of action. Such actions may be interactively delicate and are part of the more ubiquitous changes in how participants negotiate their deontic rights to decide which actions to take. As mentioned earlier, Stevanovic (2015) refers to two different types of deontic claims: distal and proximal. According to Stevanovic (*ibid.*), distal deontic claims imply that speakers have the right to have a say in future actions, whereas proximal deontic claims are about the rights of speakers to decide on their co-participant's ongoing incipient actions. The distinction in this data may not be so clear-cut.

Emerging changes in participants' mundane methods for coordinative routines for joint actions, their resisting moves, and the local negotiation of deontic rights poses a problem for a traditional view of experts and non-experts. Knorr-Cetina (1981) suggested that the distinction between experts and non-experts is pervasive in laboratories:

"trust" is implicated in another distinction of pervasive importance in the experiment, that between experts and nonexperts. Experts are those who can be trusted to understand a problem, a data curve, or a detector component, etc. They are the ones to whom, because of this trust, responsibilities are delegated without apparent control. (p.134)

Examining the understudied dimensions of situated actions in the laboratory shows that issues of trust, power, and responsibility are routinely negotiated and in flux in locally situated interactions. So, while Knorr-Cetina (*ibid.*) discusses the erasure of the individual in terms of collective scientific work, the names attributed, recognized, and awarded in conferences and publications, science and technology studies could still benefit from an understanding of the collective, collaborative and contested nature of interactions on the shop floor (Garfinkel 2002). Cooperation is not restricted to working together effortlessly and harmoniously but

emerges from participants' practiced solutions for the routine problems of delivering and managing disagreements. A behind-the-scenes, shop-floor view of cooperation might elucidate what cooperation means in particular institutional environments.

Chapter 6. Pursuing Joint Action in the Face of Resistance: How Interactional Histories Accumulate Across Multiple Timescales

This chapter addresses the following research question:

RQ 3 How do participants' interactional histories interrelate with joint, longitudinal changes over time?

How do co-participants upgrade attempts to control a co-participant's ongoing action?

In the prior chapters, I have discussed the longitudinal development of practices for initiating and resisting joint courses of action. Following Deppermann's (2018) work on interactional histories, I now examine how participants pursue consecutive proposals within single interactional episodes when encountering troubles in the lab. In this sense, we see how participants deal with problems of deciding what next steps to take in the laboratory as well as how they do so iteratively over shorter stretches of interaction. In the following three cases, I analyze local interactional histories, which unfold over time spans ranging from five to 25 minutes while Julius and Jannick attempt to resolve technical difficulties and divergent orientations to their resolution.

In my observations of the data, I found a common occurrence that when some unexpected trouble arises, one participant names an action that could potentially resolve the problem. Their co-participant, however, disagrees, and the first speaker thereafter makes several consecutive, modified proposals for the same action. In this chapter, I aim 1) to analyze how pursuing acceptance to a proposal demonstrates participants' fluctuating orientations to their 'common ground' (Clark 1996) and their attempts to mitigate the deontic asymmetries of disagreements, 2) to show how Julius' use of a particular grammar-for-social action format (Fox 2007) *I would X* first emerges from such local interactional environments, and then is mutually recalibrated by both participants, and 3) to show how gestural forms equally index asymmetrical *deontic rights* in interaction. I show this by analyzing three case studies of how participants initially attempt to resolve technical problems in the laboratory while attempting to control another's ongoing course of action. In doing so, I also hope to show how the specificities of laboratory work that I observe in the data may be useful in interrogating change over time. In analyzing these three cases, I hope to elucidate how the local accumulation of interactional histories

intertwines with observed longitudinal changes. I have chosen Julius' first use of two consecutive proposals, which are not complied with by Jannick, and the first time he upgrades his deontic authority using *I would X*. In addition, I show how the grammatical and gestural formats are adapted in pursuit of a response. In the concluding section, I discuss the implications for further research.

6.1 Case One: Consecutive Proposals and the Emergence of *I would X*

Case One: Consecutive Proposals November 8th 2018

This case comes from Julius and Jannick's fourth day of working together. Julius arrived in the laboratory earlier than Jannick and began changing mirrors on the table. When Jannick arrives, he approaches the table, and Julius informs him that he has changed the mirrors. Jannick gives him a brief reprimand stating that it is typical to change the mirrors one by one while checking the alignment of the beam with each mirror instead of replacing all the mirrors simultaneously. Jannick does not suggest going back and replacing the mirrors, and they proceed with their work. Nearly 20 minutes later, Julius and Jannick installed a specialized stage that mounts a curved mirror to generate high harmonic reflections within the beam. After its installation, they encounter a problem: the laser is no longer lasing. They proceed to check the alignment of the laser at various mirrors on the table. When another more senior colleague, Norman, enters and begins discussing the problem with Julius, Norman reprimands Julius for changing all the mirrors (*never change the mirrors all at once*) and directs him to go back and replace all the old mirrors to see if the laser works, then replace each mirror one by one.

Jannick is still working on checking the alignment by adjusting the positioning of the mirrors using mounts and using a specialized viewer card that detects the approximate location of the beam as it enters the mirrors. Julius has walked away briefly from the table while joking with Norman about taking the wrong procedure and saying, "he has learned again." At the beginning of the extract, Julius walks back to the table and begins observing Jannick, who is checking the alignment.

Extract 1.1_November_8th_2018_45:52

- 1 (7.0) ((Jannick is checking alignment))
((Julius approaches table))
- 2 JUL:→ I think we have to check the mirrors



Figures 1 and 2 – Jannick checking alignment of the laser

3 (2.8)

4 JUL:→ ▽because ▽ *(1.3)* ▽I assume there's nothing wrong with the

A Jul ▽headshk ▽shaking head-----

B Jul *shrugs*

5 JUL:→ laser ▽ °right now°.

A Jul ----- ▽

6 (11.6) ((Jannick continues checking alignment))

7 JAN: °yeah°.

8 (2.4)

9 JAN: also its coupling likeα (.) αyeah obvi#αously;

A Jan α,,,,,,,,,,,,,αrmvs cardα----αplaces----α,,,,,,,,->

B fig #fig.3-4



10 (16.7) ((Jannick raise right index finger, holds)) #fig.5

Figures 3 and 4 – Jannick checking alignment of the laser



Figure 5

11 JAN: but $\alpha(4.0)\alpha\#$ so where could be a problem.

A Jan $\alpha\ldots\alpha$ resumes checking alignment->>

B Fig #fig.6-7

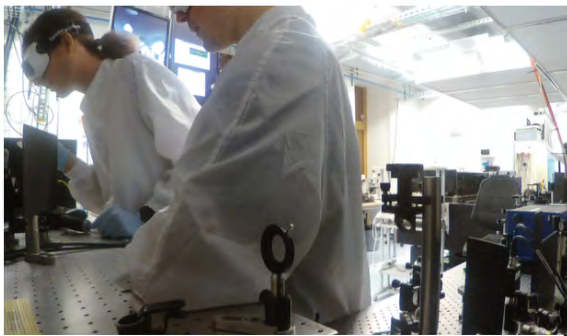


Figure 6



Figure 7

12 (3.0)

13 JAN: so it goes here?

Julius attempts to initiate a new course of action (1.2) while Jannick is engaged in another ongoing course of action. Since it is not possible to change mirrors while the laser is running while Jannick checks its alignment, in order for the participants to accomplish this action, Jannick must stop checking the alignment. Jannick and Norman have already oriented to changing the mirrors with the reprimand described, and Julius, therefore, has prior evidence that Jannick should agree to this course of action. Jannick continues working and provides no indication of a forthcoming verbal response or of stopping the process of checking the alignment (1.3, 2.8-second pause). In line 4, Julius provides a post-positioned account (Houtkoup-Steenstra, 1990). He shakes his head (1.4a), shrugs during a 1.3-second pause (1.4b),

and then syntactically and pragmatically completes the account (1.4-5), referring to the fact that it is not a problem with the laser itself but with the mirrors. Jannick's first verbal response is markedly delayed. He continues adjusting the mirror (1.6), then provides a minimal response *yeah* (1.7), with a quiet voice and flat prosody. After another pause (1.8), Jannick then begins assessing the alignment (1.9), then raises his right index finger as if searching above the cavity (1.10), and then in a *wh*-question formatted TCU (1.10) displays an orientation to his own project, checking the alignment as still in progress.

Jannick displays very little accountability for providing a timely response to Julius' proposal. By virtue of the physical proximity to each other, Julius' embodied conduct of looking at Jannick and observing his work, and the fact that Julius and Jannick have been working together on this project for 40 minutes now, it is clear that Jannick is the recipient of Julius' talk, and not someone else. Furthermore, Jannick does not display trouble in hearing or achieving intersubjectivity to the turn. Instead, Jannick uses the asymmetric material distribution of the ongoing activity and the fact that he is currently manipulating the laser cavity to his advantage in not needing to provide a response.

Julius makes a second attempt to redirect and control Jannick's actions in Extract 1.2 below.

Extract 1.2_November_8th_2018_45:52

```

39 (2.0)      ((Jannick removes card and steps back))
40 JAN:      hmm.
41 (0.6)      ((Julius shakes head->))
42 JUL:      I think [+ (0.2)
A Jul              +....reaches->
43 JAN:      [interes+∞ting.
A Jul              ->+,,,,,
B Jan              ∞....->
44 JUL:      we have to put (0.9) o:ne (0.6) mirror out *one by one;
A Jul                                          *to JAN->
45 (0.4)      ((JUL looks to table))
46 JUL:      ∇and check ∞if∇ +(.) maybe some*+## mirror is wrong.
A Jul      ∇shakes head--∇
B Jan      ∞turns away->
C Jul      ->+opens L palm-----+
D Jul      *looks to JAN->
E Fig      #Fig.1

```

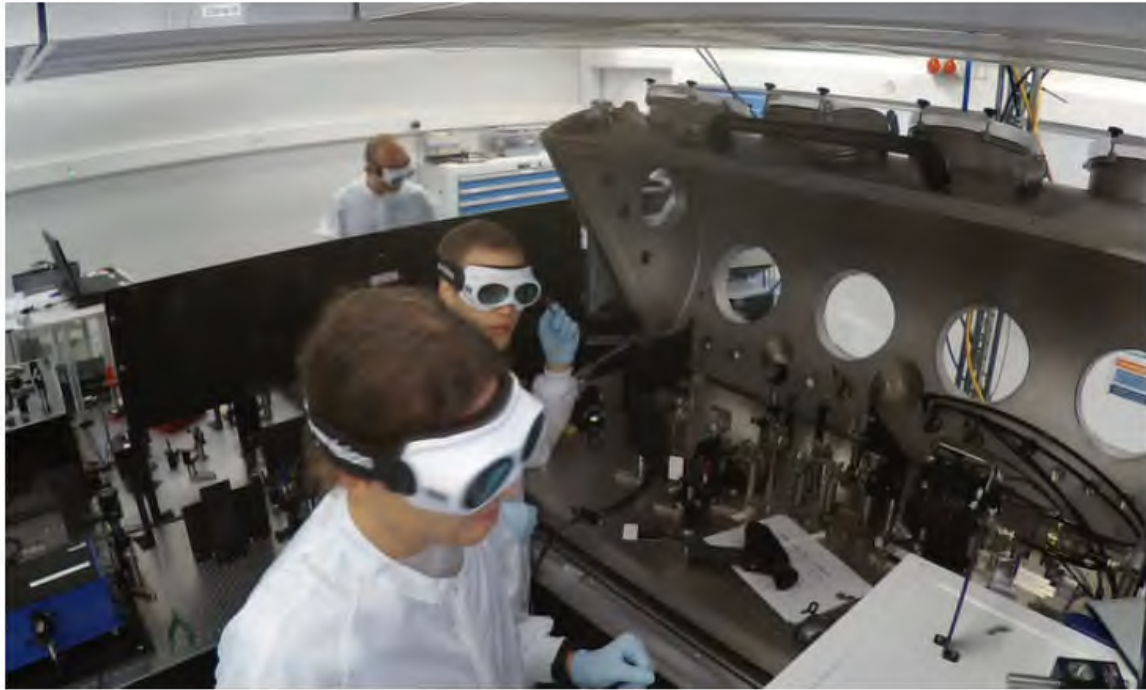


Figure 1

47 JUL: in the wrong direction.
 48 (0.6) ((Jannick returns to table))
 49 JAN: yep I will check last time¿#

A Fig

#Fig.2



Figure 2

50 (1.2) ((Jannick adjusting laser with computer))
 ((Julius looks to JAN))
 51 JAN: ∞once∞ (1.0) ∞# if it will not start lase just∞.

A Jan ∞starts laser∞reaching into cavity-----∞->>

B Fig

#Fig.3



Figure 3

As Jannick steps back from the table and removes his hands from the cavity where he has been checking the alignment (1.39), Julius attempts once more to reorient Jannick's action, which overlaps with Jannick's assessment *interesting* (1.43). Julius briefly suspends his turn and then continues his attempt using the same verbal form as in extract 1.2, altering the design of the turn, and in particular how the action is formulated (*put one mirror out one by one*), which in comparison with the first proposal (*check the mirrors*) more explicitly describes the process to be taken. Julius turns his gaze to Jannick at the end of his turn (1.44). When Jannick projects no forthcoming response, Julius delivers a second account, this time with less delay (compare the 2.4 seconds in line 3 ex1.1 to the 0.4-second pause in line 45, this extract), thereby extending his turn and providing reasoning to the said action (*check if maybe some mirror is wrong*, 1.46). In line 49, Jannick again responds minimally (*yep*) and in the same turn orients to a unilateral decision to *check one last time*.

Comparison of these first two extracts reveals some of the structural resources participants use to adjust their proposals and responses while also (attempting to) adjust their relative deontic stance in interaction. These two fragments show how the format *I think we have to*-initiated proposals followed by *because*-prefaced accounts are used by Julius to divert Jannick's ongoing course of action into a new one. The features of the online, emergent nature of the

formulation of a next action and its account reveal Julius's orientation to his own accountability in providing a justification for altering the course of action. Whereas Julius' first *because*-account was only given after a considerable delay and no forthcoming response from Jannick, the second was delivered notably quicker (0.4 seconds). This suggests that Julius orients to a normative order for providing an account for a proposal that involves suspending a co-participant's ongoing action. Jannick also displays an orientation to his increased accountability in providing a timely response this second time around but still employs the same resources of engaging in an embodied course of action prior to a verbal response. The final fragment from this case shows how Julius recipient designs his turn (1.56) and stakes a higher claim to his deontic authority in controlling the joint laboratory work and in attempting to elicit responses. This extract occurs 23 seconds after extract 1.2 as Jannick continues checking the alignment.

Extract 1.3_November_8th_2018_45:52

53 (24.0) ((Jannick is adjusting plate))
 54 JUL: *it just does not start*.
 A Jul *smiling*
 55 (1.5) ((Jannick begins adjusting plate->))
 56 JUL: >∇I would le+ave it<+∇ because its not∇+ (1.2)+
 A Jul +.....+palm down-----+,,,,,,,+
 B Jul ∇shaking head-----∇
 C Fig #Fig.1



Figure 1

57 JUL: it should definitely start ∇ .=
 A Jul ∇ shakes head----- ∇
 58 JAN: =°yeah°.
 59 (20.0) ((Jannick continues adjusting plate))

The turn in line 56 is delivered with high volume, a faster rate of speech, and stress on the verbal form *leave it*. The *because*-initiated account is prosodically connected to the prior TCU, as are the following, indicating that what Jannick is doing is not working (1.57). There is a 1.6-second pause, followed by a repair which is modulated to claim a higher epistemic stance (it should *definitely* start 1.57, compared with *I assume* (Ex_1.1), *maybe if some mirror is wrong* (Ex_2.2). Furthermore, in comparison to the first two extracts, Julius' embodied conduct is heightened to upgrade the negation in the proposal and to mobilize a possible response as well. He animatedly shakes his head throughout the turn (1.56b, 1.57a), indicating a possible negative stance or even embodied refusal of Jannick's ongoing action while gesturing towards the object which Jannick is working on with both palms down in line 56a (see Harrison 2013 on palm-down gestures). In this sense, Julius is forming a 'double-barrelled' action (Schegloff 2007), one which reinitiates his prior proposals while also attempting to block Jannick's ongoing action and thus endorses a higher deontic authority in controlling the action of his co-participant.

Taking a momentary step back from the three extracts analyzed above, is it possible to make the argument that *I would X* is a deontically stronger form than *I think we have to X*? The evidence for this cannot be isolated to the grammatical form itself, but the comparison of its historicized emergence of first usages may provide insight into how particular forms might be later adapted to accomplish interactional goals. In extracts 1.1 and 1.2, Julius' proposed actions involve *we have to*, followed by nominating some action formulated as a joint action to be done together. In extract 1.3, Julius does not refer to a joint action but instead to an ongoing action of Jannick's and that Jannick as the recipient of the turn, should suspend his action in pursuit of another goal (changing the mirrors). For both participants, it is likely very clear that Jannick must turn off the laser and physically move his hands out of the cavity so they can begin uninstalling and checking the mirrors. Julius formats in extracts 1.1 and 1.2 treat this as intersubjectively assumed and thereby within both participants 'common ground.' With *I would leave it* in extract 1.3, Julius makes a stronger deontic claim to decide upon Jannick's action(s) in the laboratory. While *I would X* acts locally as a directive, it can also be seen as a proposal within the more general joint decision-making task at hand.

Over the following days, *I would X* formats become increasingly used by both participants in similar activity environments that involve disagreement on how to proceed with joint actions. Jannick begins using this *I would X* as a way of countering Julius' actions while also making public his own actions that are in direct competition with Julius, and Julius, in turn, responds to these with format-tying counter proposals. These will be shown in the second case below.

6.2 Case 2: The mutual recalibration of *I would X* and gestural forms

Case 2. Consecutive Proposals November 9th 2018

The start of case two comes on the fourth day Julius and Jannick work together. The participants are debating the placement of a piece of equipment, an autocorrelator that will take measurements for the laser.

Extract 2.1 November 9th 2018 02:00

2 JUL: uh yeah I just wanted (2.8) to take the same position as

3 Norman? or do we, (.) no. we have it[here.

4 JAN: [#it does not matter.

B Fig #Fig.1

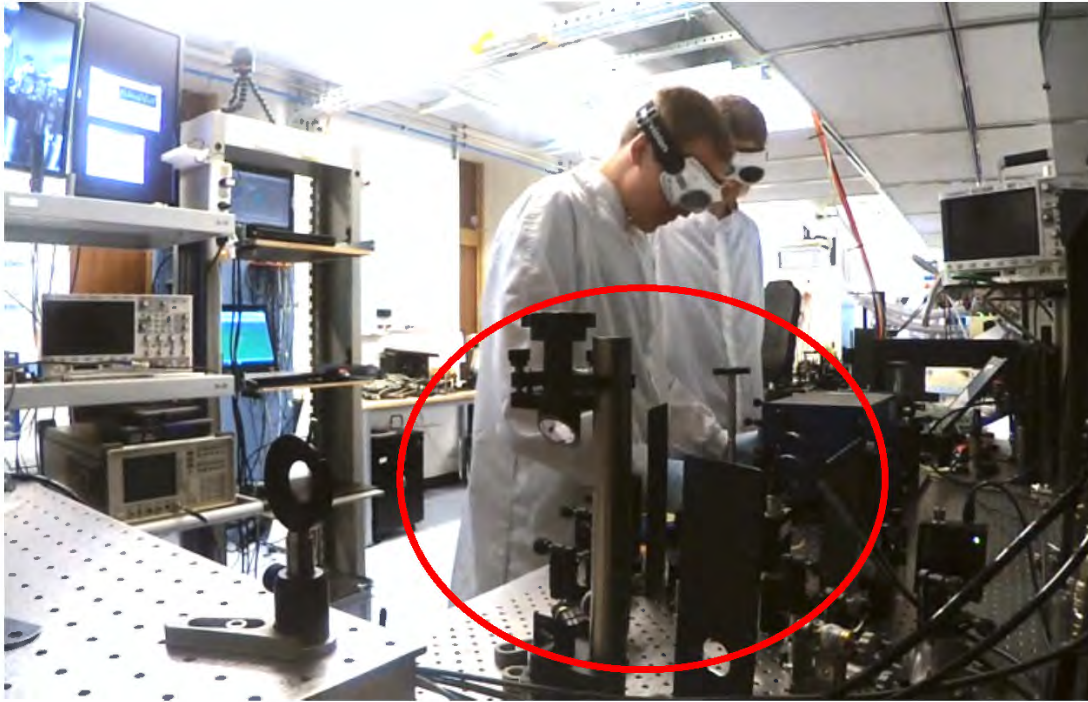
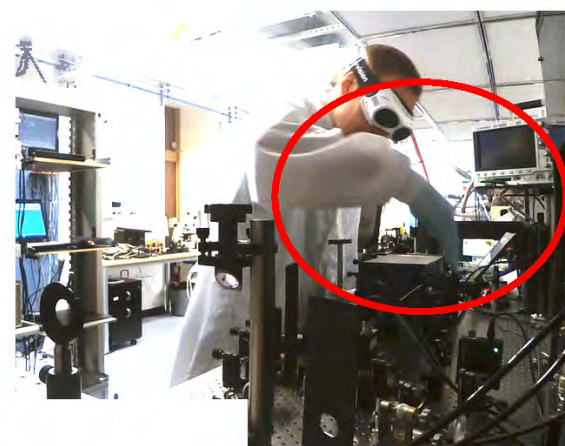
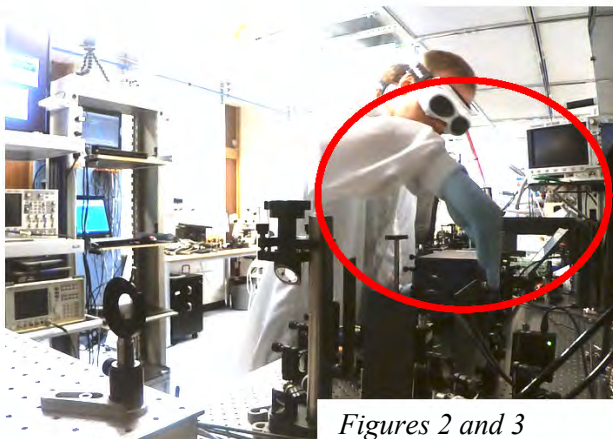


Figure 1

5 (5.0) ((JUL inspecting position))
 6 JUL: we+ll then I would say I+# put it +directly in+# line here.
 A Jul +.....+points---+draws line--+,/////////
 B Fig #fig.2 #fig.3



Figures 2 and 3

7 (2.1) ((Julius adjusts placement of autocorrelator))
 8 JAN: ((clears throat))
 9 (1.0)
 10 JAN: I would ALSO say put it mo%re to th%e:, (2.0)
 A Jan %.....%grabs wire->
 11 JUL: hereς+#?
 A Jul ςsteps back, turns to Jan->

B Jul +removes LH from autocorrelator->
C Fig #fig.4

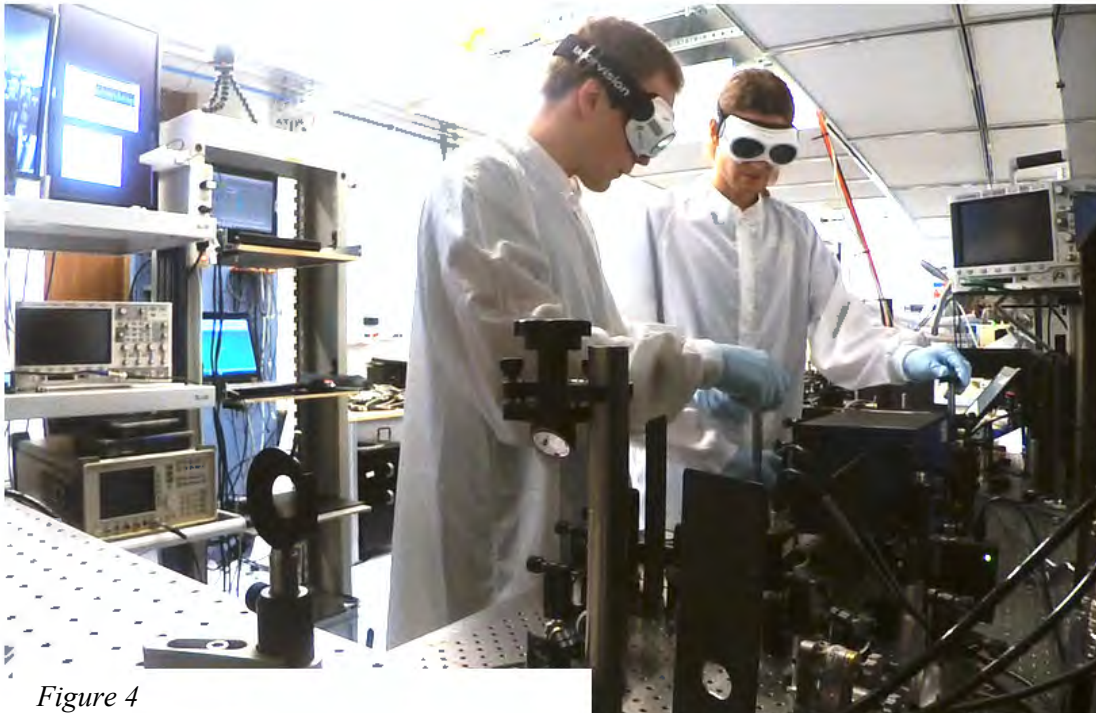


Figure 4

12 JAN: %ts!
A Jan %releases wire
13 (1.0) ((Jannick grabs autocorrelator with left hand))
14 JAN: %°yeah°.
A Jan %grabs autocorrelator with right hand->
15 JAN: °whatever°.

Julius has already started working on placing the autocorrelator when Jannick enters the room. There is a brief moment of unrelated talk, and then Julius resumes the action of placing the autocorrelator. In line 1, he formulates a candidate placement of the stage as he adjusts his position. He then pauses and displays a noticing marked by the altered turn online as he observes the placement of the autocorrelator (1.3). Jannick's turn in line 4 challenges the relevance of Julius' ongoing action. Julius continues to inspect the position (1.5) and then prioritizes his ongoing action as relevant in his second turn (1.6). *Well then* marks the turn as a 'my side' perspective (Heritage, 2015), and *I would say* this turn, Julius extends his right hand (1.6a), first pointing to the placement of the laser setup and then drawing a line as if demonstrating how the autocorrelator should be aligned within the current setup (Fig.2-3). Then he begins adjusting the position of the autocorrelator (1.7, fig.4).

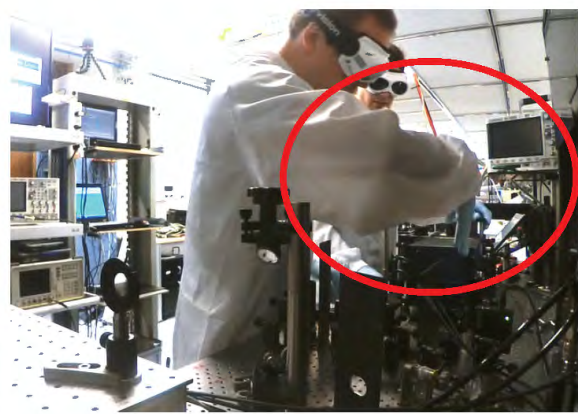
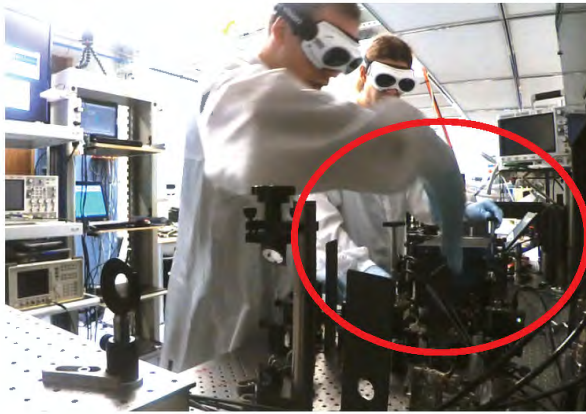
Jannick's prior turn (1.4, *it does not matter*) provides similar sequential evidence that Julius' use of the format *I would* is recipient-designed to respond to possible resistance from an interlocutor while adjusting his pursuit of a prior joint action (note the uses of *we* in 1.3) to a now unilateral action (*I put it directly in line here*, 1.6). In this case, as Julius already has physical access to the object, he is then able to pursue this unilateral proposal without seeking a response from Jannick but while still displaying his own engagement in the ongoing activity.

As Julius continues adjusting the autocorrelator's position (1.7-9), Jannick remains to the side observing. He clears his throat (1.7) and then, upon moving slightly closer, launches his own *I would X* (1.10) turn through the use of format-tying (Goodwin & Goodwin 1987). Jannick's turn is left syntactically incomplete but structurally projects an alternate action through the use of the adverbial *also* and the incomplete graded assessment *more to the*. There is a two-second pause at a point where Jannick's turn is left syntactically and pragmatically incomplete, and Julius offers a repair (1.11) with a single TCU deictic *here* with high-rising intonation while pivoting his torso to Jannick and removing one hand from the autocorrelator (1.11a,b). Jannick then reaches for the autocorrelator as he produces a click (1.12), followed by two more TCUs (*yeah whatever*) displaying disagreement with the ongoing project.

Julius' initial use of *I would X* in this extract comes at the second position, in response to disagreement and resistance from Jannick. Similarly, Jannick's use of *I would X* structurally builds on Julius' prior turn, and both instances seem to indicate taking a unilateral transfer of deontic authority, in this case, related to and visible through the momentary projected transfer of the autocorrelator within the overall joint decision-making process and its corollary manual activity. The following fragment shows how Jannick now pursues his disagreement after they transfer the object again.

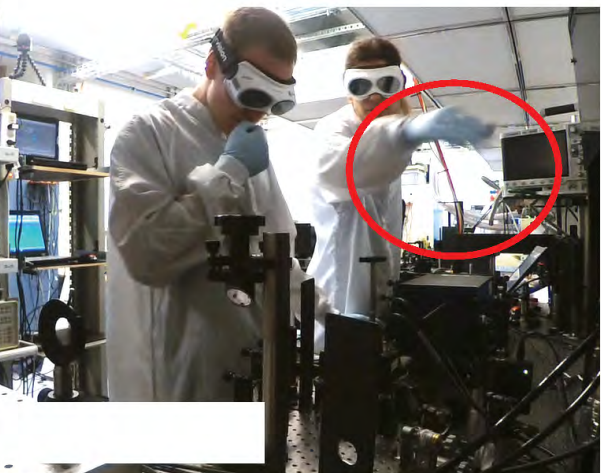
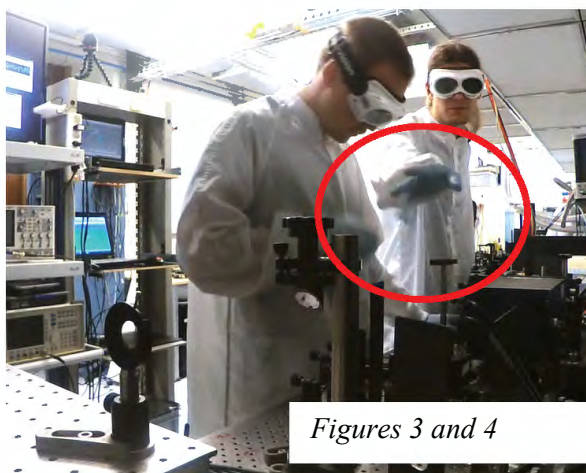
Extract 2.2_November_9th_2018_02:00

13 (1.0) ((Jannick grabs autocorrelator with left hand))
 14 JAN: %°yeah°.
 A Jan %grabs autocorrelator with right hand->
 15 JAN: °whatever°.
 16 JUL: +#here its+# (0.4)+
 A Jul +.....+#draws line+,,
 B Fig #fig.1 #----->fig.2



Figures 1 and 2

17 JUL: +but we have to %go a +bit back.
 A Jul +,,,,,,,,,,,,,,,,,,,,+grabs autocorrelator->
 B Jan %removes LH, steps back->
 18 (2.1) ((JUL adjusts position of autocorrelator))
 19 JUL: °something like this°.
 20 JAN: I mean we will ANYWAY %#need% to+:: (0.5)%# change%∇(2.10)∇
 A Jan %.....%sweeping RH%,,,,,,,%flashes palm
 B Jul + to table, right hand to chin->
 C Jan ∇nodes3x∇
 D Fig #fig.3 #fig.4



Figures 3 and 4

21 JAN: here. ∇which- from which wedge we take in the reflection ∇SO.
 A Jan ∇headshakes ∇nodes
 22 JUL: σ÷oh yeahσ÷ sure.
 A Jan σshrugs-σ
 B Jul ÷tilts head÷
 23 (0.6) ((JAN shrugs, waves RH and fingers))

A Fig #fig.5

24 JAN: so it doesn't matter.

25 JAN: I would say.

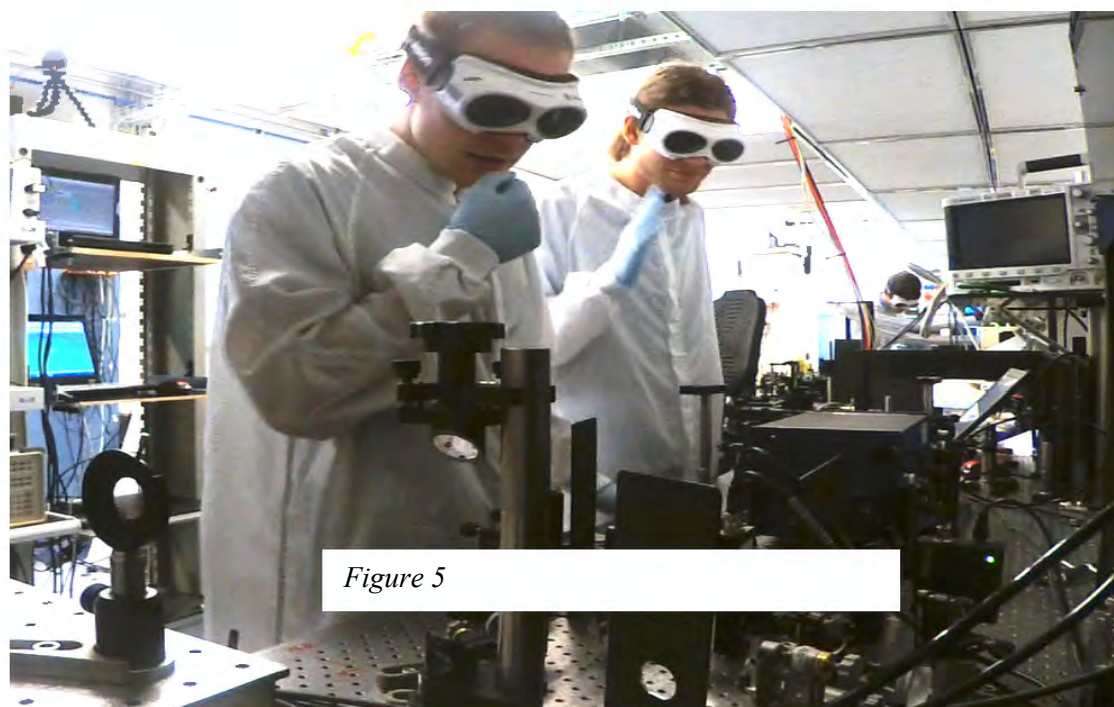


Figure 5

After the autocorrelator has been momentarily transferred and Jannick has verbally criticized the action (1.14-15), only slightly adjusting the position of the autocorrelator, Julius reinitiates his proposal (1.16). This time with a compacted syntactic form (*here it's*) completed with a reformulation of the prior pointing and drawing gesture. The entirety of the gesture, from its preparation, apex, and stroke, occurs more quickly and in a less precise manner than in extract 2.1. Delivering this proposed action in a more decisive verbal utterance and less precise gestural work is evidence of an increased orientation to common ground among the participants. In reinitiating the proposal and gesture, Julius provides another sequential opportunity for Jannick to 'see' its production and align with a possibly unheard or unseen prior proposal. Julius omits the argument from this proposal (*directly in line*), treating this aspect as assumed and visible the second time through.

Then he provides a correction (*but*) and shifts back to the 'we' format (1.17) while he takes the autocorrelator and begins adjusting it. Julius takes 2.1 seconds to make fine adjustments to the position (1.18) and provides an assessment (1.19). Jannick's turn comes in near the hearable completion of Julius' placement of the autocorrelator (*something like this*). With this turn, Jannick intervenes with his bodily conduct, extending his right hand in Julius' purview and

waving his hand over a particular area of the cavity. This gesture is coordinated with his turn at talk, where he treats the open slot after *need* as semantically complete with his gestural waving over a particular area of the cavity. After a notable delay, he continues the verbal turn with the verb *change* and then completes the turn in line 21. Julius' response (l.22) displays a so-called change-of-state as he removes his hands from the autocorrelator into a thinking posture while looking at the space where Jannick has just gestured. After Julius has displayed alignment with the fact that they will need to consider the arrangement of mirrors, Jannick reiterates his stance that the position does not matter (l.24), followed by a post-positioned, *I would say* potentially hedging his strongly issued prior claim (l.25). Jannick's verbal and gestural work in lines 20-21 indicates a future action that they will have to take and sets up the consequences for his ensuing assessment (l.24-25). In a nutshell, extracts 1 and 2 show a recurrent interactional organization that occurs in the laboratory: Julius proposes some course of action, such as where to place a measurement device, which is met with resistance and disalignment from a Jannick. In the prior sequence, Julius attempts to reinitiate the same course of action in a similar-but-different way: the recipient design of the verbal turn becomes more compact in the second proposal, and the gesture is delivered more quickly with less attention to the recipient's ability to see or monitor the gesture. This indicates that the design of the turn is not so much about establishing a locally established joint area of scrutiny or domain of perception (Goodwin 1994, 2013) but about maintaining a relative deontic symmetry while pursuing divergent courses of action.

As the interaction continues, Julius and Jannick remain in divergent courses of action. Julius has now turned to the area of the mirrors that Jannick has pointed out, and Jannick has now taken the autocorrelator.

Extract 2.3 November 9th 2018 02:00

26 JAN: so I would just +put it at:

A Jul +.....->

27 JUL: I think we need a second oneσ here?

A Jul ->+points->

B Jan σ steps to JUL->

28 (1.7)

29 JAN: ts! a wedge?

30 JUL: yeah.

31 JUL: and +#.hh +(1.0)*+#(0.4)+ go out directly here.=
 A Jul ->+.....+-----+,,,,,+ drawing line, hand to chin
 B Jul *looks to JAN->
 C Fig #fig.1 #-----fig.2

Figure 1

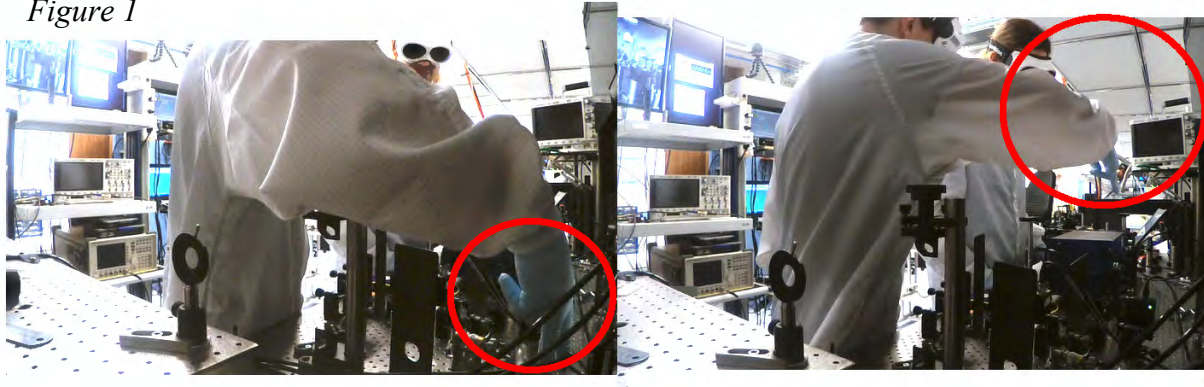


Figure 2

32 JAN: =could be.=
 33 JUL: =+SO+ just leave th+#is here,=
 A Jul +..+palm down gest+,,,,,,
 B Fig #fig.3



Figure 3

34 JAN: =yeah yeah.=
 35 JUL: =don't fix it.
 36 JUL: u:m then the spectrometer we:

Jannick's turn in line 26 begins with an *I would* format as he begins moving his hands toward the autocorrelator to adjust its placement. Julius' turn comes in at a non-transition relevance place (1.26-27) and formulates another joint action that responds to and provides a possible solution for Jannick's turn in lines 20-21. Jannick suspends his adjustment to the autocorrelator

and moves toward Julius, then provides a candidate understanding (l.29, *wedge*, referring to a type of mirror). Julius confirms this (l.30) and then redraws the line gesture from the previous two extracts. Within this turn, the gesture occurs after the conjunction *and*. The gesture is elongated, reaching further than the prior gestures and lasting one second as if augmenting insistence on the proposed course of action (fig.1-2). As Julius reaches the retraction of the drawing gesture, he turns and holds his gaze toward Jannick (l.31b) and verbally completes the turn by again repeating *go out directly here*. Jannick's tentative response (l.32) is then directly latched to by Julius following turn (l.33), which provides a directive for Jannick to make no further adjustments to the autocorrelator, coupled with a palm-down gesture (fig.3) toward the autocorrelator and a following directive (l. 35). Through Julius' coupling of verbal and embodied resources, he displays an insistence for Jannick to not engage in any further alteration of the autocorrelator or discussion of its placement, relativizing a higher deontic authority in both controlling Jannick's local actions and closing the decision-making sequence. Then, a few seconds later, Julius attempts to open a new action with his turn in line 41 by means of the declarative *there's the cam* and then an additional TCU *we have to uh:m get another cable for that* (l.43). Jannick displays no response and starts to adjust the autocorrelator yet again. Julius begins walking back to the right side of Jannick and starts observing Jannick's movement of the autocorrelator from the same vantage point he had in the prior three extracts.

Extract 2.4_November_9th_2018_02:00

[illegible]



Figure 1

48 JAN: =°yeah SOMEwh[ere,°

49 JUL: [+I think then αweα can+ alα#[ready fix it.

50 JAN: [°yeah°.

A Jul +.....+----->

touches mount

B Jan α,,α-----α

hands off

C Fig #fig.2

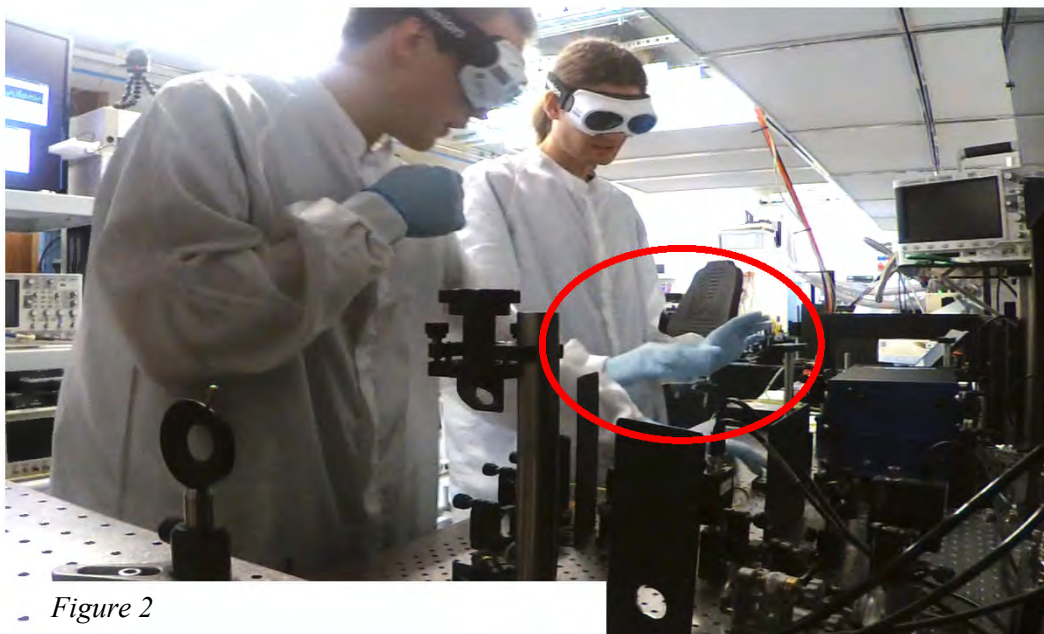


Figure 2

51 (0.8)

52 JUL: αbe+cau:seα+ *(.)* we have to use the mirrors °for this°.

A Jul ->+,,,,,,+

B Jan α.....αgrabs AC, adjusting----->
 C Jul *...*to JAN----->
 53 (2.0)
 54 JAN: °whatever°.
 55 (7.0) ((JUL turns, grabs screwdriver and begins fixing stage to
 table))
 56 JAN: °(+so it's a (bit too much shit))°
 Jul +holds screwdriver out towards Jannick->
 57 (2.0) ((JAN takes screwdriver from JUL))

Jannick's turn in line 46 comes as Julius begins observing, indicated by his gaze and walking back to his prior position. Julius responds (1.47) with a precision-timed, format-tying *I would just leave it like this*. This turn, as in extracts 1.3 and 2.3, makes a bid for Jannick to suspend any further course of action (*leave it like this*) and co-occurs with a range of similar features as in the prior excerpts, including headshakes (1.45b) and a waving palm down gesture (1.47a) towards the autocorrelator. Jannick responds with a minimal *yeah*, flat prosody, and quiet volume while displaying a kind of 'hands off' gesture with both palms facing down toward the autocorrelator and moving them away from the object and towards his torso as if complying with Julius' proposal to '*leave it.*' Jannick continues talking as if still debating the placement with the quietly vocalized response and assessment (1.48). Julius makes a proposal to begin securing the autocorrelator in its current placement to the table (1.49), followed by a minimal response from Jannick (1.50), a delay (1.52) and then another account from Julius (1.52). Jannick continues to display some resistance to the activity and final decision (1.54) and Julius grabs a screwdriver and begins securing the autocorrelator to the table (1.55) then extends the screwdriver to Jannick who takes it and complies with the process of securing it to the table (1.57). *I would X* formats, as seen in the above case, tend to be used as an earlier resource in sequences where one participant projects disagreement. The above case also shows that this a resource that is increasingly used by both Julius and Jannick for doing similar disagreeing-but-proposing actions and becomes part of their shared repertoire of practices for accomplishing local interactional needs. By formatting turns with *I would X* participants design their actions as a 'my-side' version of the proposal, which possibly achieves a deontic symmetry at the verbal level despite their embodied actions which frame a coparticipant's actions as problematic.

6.3 Interim Summary: Observations on Pursuing Response in Joint Courses of Action

The following table issues an interim summary of what these two cases show so far. The findings demonstrate that first attempts to control a participant's ongoing course of action are upgraded in order to pursue responses and hold recipients increasingly accountable for a complying with actions.

Interim summary points

Julius recipient designs:

1. First turns to alter a co-participant's ongoing action are done by:
 - a. Recipient designing to be heard as joint activities through the use of *I think we have to X* proposals.
 - b. Using *because* prefaced accounts for first order proposals are typically after lack of recipient response/compliance. (Houtkoup-Steenstra 1990, Robinson & Kevoe-Feldman 2016).
2. Second turns to alter a co-participant's ongoing action are:
 - a. Recipient designed to be heard as joint activities, but
 - b. *because* prefaced accounts are prosodically integrated into the first turn, **and**
 - c. accounts are produced with deictic gestures that (re)establish relevant domains of scrutiny and challenge the participant's professional vision (Goodwin, 1994)
3. Third turns to alter a co-participant's ongoing action are:
 - a. Delivered using *I would X* make relevant that either (1) speaker will conduct a course of action themselves or (2) recipient should alter or suspend their course of action. This is typically accomplished using an *I would X* format
 - b. *Because* prefaced accounts are delivered post-proposal connected to TCU
 - c. Embodied resources include palm-down gestures, embodied displays of stance (headshakes, shrugs) augmenting and strengthening participant's *deontic stance* to the proposed action.

Jannick's responses in the first case also show little orientation to Julius' deontic authority in deciding on Jannick's courses of action. This can be seen through:

1. Lack of verbal response to Julius turns in the second position.

2. Relying on embodied resources only (Stevanovic & Monzoni, 2016) to display non-compliance
3. Delivering unilateral verbal declaratives only after multiple, consecutive attempts by Julius to control the activity.

We can see that the relationship of displaying increasing accountability is also engendered in Jannick's responses to proposals in case 2.

In the second case we see that:

1. Julius uses *I would X*
2. First resisting moves are:
 - a. Assessment turns with no account.
3. Second resisting moves
 - a. Format-tying utterances
4. Third Resisting moves
 - a. Counter proposal followed by:
 - b. Reinitiation of assessment (it doesn't matter) + format tying *I would X* as a sequence closing move.
 - c. Embodied through 'hands off' gestures, shrugs, headshakes

The above extracts show that the speaker of the *I would X* proposes something that is unlikely to be accepted based on the accumulative interactional histories across participants' microhistories in pursuing responses and dealing with resistance. Such stretches of micro-longitudinal interaction also seem to accumulate across participants' longitudinal interactional histories and iterative encounters. Julius' first use of *I would X* (Case 1, ex1.3) provides insight into its usage as a local solution to pursuing a response in a difficult and socially delicate interactional environment. Over the course of these two cases, participants use *I would X* at earlier signs of possible forthcoming disagreements. By using *I would X* as a way of progressing the activity in the face of resistance earlier on, Julius claims a relatively higher deontic authority in pursuing his project within the joint activity.

Similarly, Jannick also begins using the *I would X* to display his own deontic authority and resistance within the decision-making routines. Comparing Case 1 to case 2, we see that Jannick displays very different practices for doing non-compliance. In the first case, Jannick primarily relied on the material distribution of his manual access to the ongoing activity, only

proffering minimal response tokens (*yeah*) with flat prosody displaying non-engagement and notably delayed responses. In case 2, we see that Jannick verbalizes his non-compliance through format-tying restructuring of *I would X*. In doing so, Jannick creates a public intelligibility of what he is doing that Julius can see and account for quite differently, and he creates an interactional slot for Julius to potentially respond. The convergence of the use of *I would X* by Jannick and Julius suggests that they come to understand this form as doing particular interactional work that allows them to “construct and reconstruct their social organization on an ongoing basis” (Goodwin 1990, p.33). The dense and recurrent use of the *I would X* format from Julius’ first use (extract 1.3) on the following day provides insight into “how the long-term evolutionary timescale becomes meshed with the short-term developmental and interactional timescales by activities that occur in the present moment” (MacWhinney 2006, p.732).

6.4 Case 3: Developing Mutual Practices for Pursuing Responses in Joint Courses of Action

Case 3: Consecutive Proposals September 3rd 2019

Julius and Jannick have just installed a motorized stage that places an aperture near a mirror for reflecting the beam. Here they encounter the problem that there is not enough room for the aperture to reach the mirror. In the following case, Julius and Jannick attempt to solve this problem which occurs through multiple proposals, this time by Jannick in the following three fragments.

Extract_3.1_September 3rd 2019_13:00

- 1 JUL: so uh:you are here now?
- 2 JAN: yes,
- 3 (0.5) +(0.5)
- A Jul +---moving card->
- 4 JUL: and we: a:re+ just (.) at the >two point seven< hole.
- A Jul -----+holds card
- 5 JAN: two point seven? and you want to go to two point six?
- 6 JAN: [ts! °too bad° <<creaky voice>>
- 7 JUL: [()%
- A Jul %,,,,,,,,,->
- 8 JUL: .HH t(h)°too b(h)ad.
- A Jul ->%rests on table->

9 (13.0) % (1.4) %+ (1.0) +ζ (1.6) ζ# (1.4) % (1.4) %ζ (2.0) ζ (4.2)
 A Jul %.....%leans over mirror->%,,,,,%thinking posture->
 B Jul +card in mirror->
 C Jan ζ.....ζleans over---ζ,,,,,ζstands upright->
 D Fig #fig.1

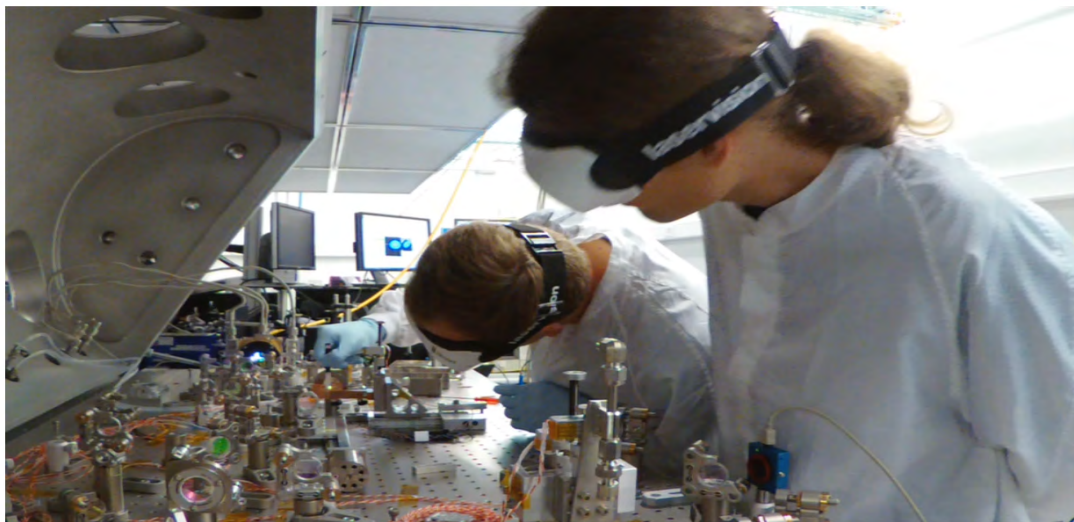


Figure 1

10 JUL: .HHeh SO%(h)eh (.)% BUT- we%ll so le+ts say.
 A Jul ->%to JAN---%,,,,,,,%leans over mirror->
 B Jul +card in mirror->
 11 JUL: ζwe COME to thisζ HOLE?=
 A Jan ζ.....ζleans over looking at mirror->
 12 JAN: =mmhm-
 13 JUL: so its +one [two three four FIVE%+.
 14 JAN: [yeah.
 A Jul +moving card with each number+,,,->
 B Jul %,,,,->
 15 JUL: so we can make five %#holes.
 A Jul ,,,,,,,,,,,,,,,,,,,,,,%rests elbow on table, facing JAN->
 B Fig #fig.2
 16 (0.5)

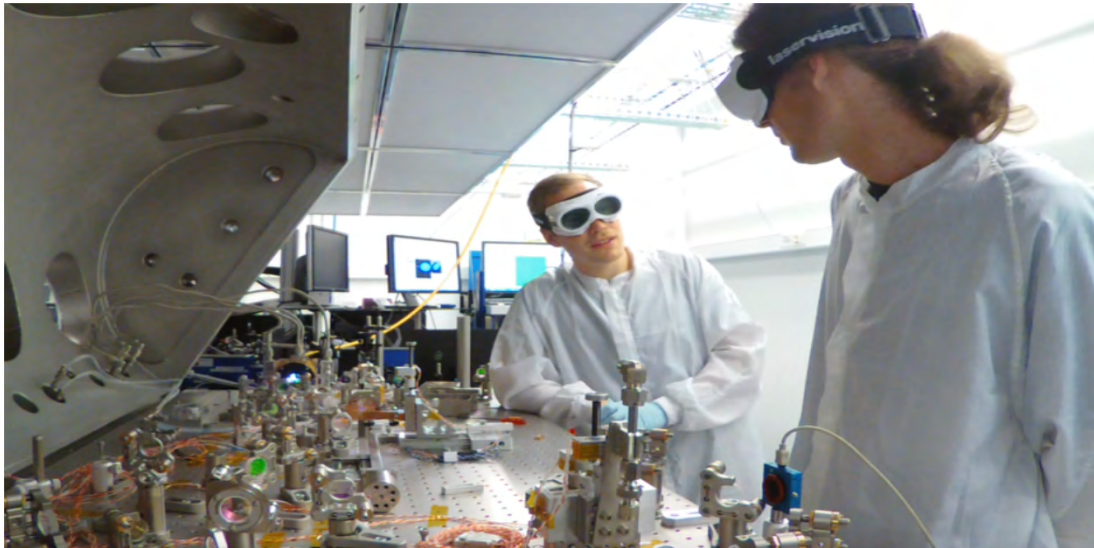


Figure 2

17 JUL: in principle.

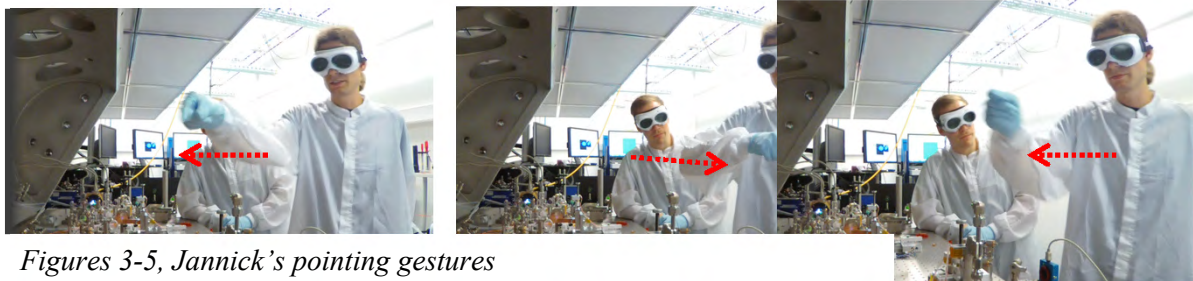
18 JAN: ts ς well so in principle:: $\varsigma\alpha$ # we ca:n #%(1.0)#%(0.2)

A Jan ς ς to right->

B Jan α points, waves laterally 4x

C Jul ->%table %to JAN->

D Fig fig.3-----#fig.4-----#fig.5



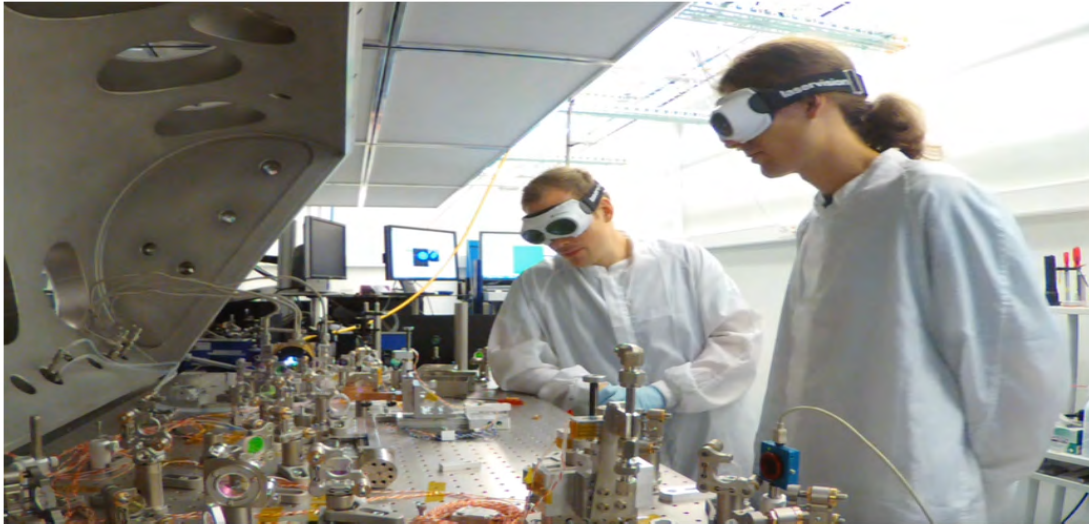
Figures 3-5, Jannick's pointing gestures

19 (1.3) ς (0.5)%(0.3) ς #(0.5)

A Jan ς to table ς ->

B Jul %to table->

C Fig #fig.6



Figures 6

At the extract's beginning, Julius demonstrates that the stage placement and its mechanical aperture do not reach the hole they need. In lines 1 through 4, Julius is leaning over the table, holding a viewer card, and showing Jannick the beam's position to each aperture. Jannick, with a multiunit TCU, first confirms the distance (*two point seven*) and then the position Julius wants to achieve (*two point six*), followed by an assessment (*too bad*). Julius responds by repeating this assessment while laughing (1.8). Then in the following 13-second pause, he and Jannick inspect the position (1.9), leaning over the table, using the card, and examining the beam. Julius's turn in 1.10 starts with laughter as if to make a joke, but he abandons and begins examining the aperture again, this time counting aloud the holes which the laser reaches, and summarizes as *we can make five holes in principle*. Jannick's proposal in 1.18 starts first with a click, followed by a *well then*, and then recycles the first elements of Julius' proposal, inverting the *in principle*, and *we can* to make a new proposal. Notably, Jannick does not verbally complete the proposal but instead points to an area of the cavity with his right hand and index finger extended and then waves his hand back and forth laterally four times (1.18). Julius switches his gaze from the area where Jannick is gesturing to Jannick and then both resume looking at the table (1.19).

The first proposed action from Jannick is highly indexical to the lab's procedures. He does not verbalize a particular action after the modal verb “can” but instead points towards a space on the table and gestures back and forth. Julius does not display any trouble understanding this turn as evidenced by his response in the following extract.

Extract_3.2_September 3rd 2019_13:00

19 (1.3) $\zeta(0.5)\%(0.3)\zeta\#(0.5)$

A Jan ζ to table ζ ->

B Jul %to table->

C Fig #fig.1

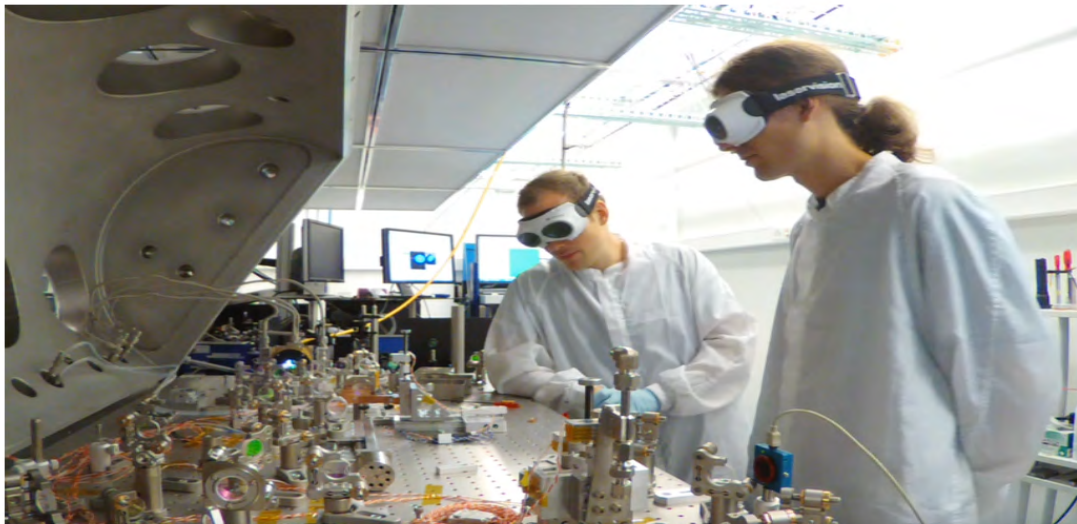


Figure 1

20 JUL: OR! we even make a double arrangement?

21 (0.4)

22 JAN: =°yeah [that could be°

23 JUL: [like TEN?

24 JAN: °yes° .HH well the thing IS α

A Jan α ...->

25 I:: α # told to Alain (.) α to have one mo α re?

A Jan ... α points to ap----- α waving index fina,,, ->

B Fig #fig.2



Figure 2

26 without holes β so β .
A Jan ,, , , , α gesticulates α , , ->
B Jan -> ζ to JUL->
C Jan β shrugs β
27 we can technically cut different holes in. .HH
28 but .HH HO ζ NESTLY::? (0.3)
A Jan -> ζ leans over ap->
29 .ts! I think that α for- α % mm α with this o:ne? β (1.4) β
A Jan α α gestures to ap α behind back
B Jul %to Jan->
C Jan β cocks head β
30 centimeter? β (2.0) β ζ (1.0)
A Jan β shakes head 4x β
B Jan ζ to Jul->
31 we can α (.) just α re α #align α .
A Jan α α pts α , , , , , α
B Fig #fig.3



Figure 4

32 *and we would GAIN those three millimeters which we are
 A Jan *gaze to JUL->
 33 missing=αyou are αr- really on thæ edge of tæhe (0.4) mirror.
 A Jan α,,,,,,,,αpoints to ap---α,,,,,,,,α
 34 JUL: .HH ah oh=[ehh,
 35 JAN: [whαich one is thαis oneα?
 A Jan α.....αpts-αpα,,

Julius' counter-proposal (l.20) displays no trouble with understanding Jannick's prior proposal. Instead, he suggests they go to the workshop to make another aperture for the stage. Jannick's response to Julius' counter-proposal is complex and carries across several turns at lines 22 and 24-26. Jannick's turn comes in overlap (l.22) with lower volume. He sharply raises the volume of his voice at his turn in line 24, using a projector construction (*the thing IS*), and then providing a telling of his discussion with a colleague in charge of making the materials that Julius has proposed in line 20, thereby tentatively agreeing with Julius' proposal in line 27. At the end of line 27, there is a sharp in-breath, followed by a prosodically emphasized conjunction *but* (l.28), which begins Jannick's reinitiation of a prior proposal and then with loud volume, high-pitch, and stretched syllable, he utters *honestly* as if looking over and inspecting the aperture. His turn uses an epistemic hedge, *I think that*, followed by a repaired prepositional phrase while gesturing to the aperture (the problem area) near the possible end of a TCU (*one* though he increments this to be *one centimeter* in l.30), thereby displaying an orientation to the

utterance as being possibly complete; he cocks his head and slightly shrugs in line 29 during the 1.4-second pause. As he adds on the incremental lexical item *centimeter* he shakes his head and turns his gaze to Julius (1.30a,b). Then, he properly reformulates the proposal using the modal declarative *can* and adverbial *just* while pointing again at the mirrors, nominating the action (realign) with a pointing gesture to the mirror.

A post-positioned account from Jannick follows the proposal. The proposal ends with a falling intonation, but there is no gap or orientation to Julius as the next speaker. Latching the account to the proposal in this way allows Jannick to extend his turn and describe the possible benefits of taking his course of action (gaining the missing 3 millimeters between the aperture and mirror) and formulating that their desired position of the aperture to the mirror is already ‘really’ close (*really on the edge of the mirror*, 1.33).

At the verbal level, Jannick’s turn displays an increased sensitivity to the interactional circumstances of dealing with Julius’ possible non-acceptance of a counter-proposal while reinitiating his first proposal. The response to Julius’ counter proposal can be heard as accepting, but Jannick uses various means – outbreaths, the conjunction *but*, and embodied stance markers – to hold the floor and deliver his reinitiating proposal smoothly. Then, his reinitiated proposal consists of various moves where he treats the verbal arguments with an assumed ‘common ground’ by completing the turns with embodied stance-taking moves, such as cocking his head, shrugging, and shaking his head. These features suggest that Jannick treats the evidentiary nature of what he is proposing as an intersubjective given. The reinitiated proposal is comparably more compact but again latched with a benefactive status account, further emphasizing Jannick’s stance on the feasibility of his proposed action.

We also see that Jannick gestures to and points to various table elements in lines 29, 31, and 33. The first gesture is directed toward the aperture, the source of trouble, while Jannick delivers his response to Julius’ counter-proposal. Then in lines 31 and 33, Jannick points to the mirror where he has suggested realigning the beam in extract 4.1. In this extract, his gestures both occur with a ‘typical’ preparation, stroke, and retraction phase compared with Extract 4.1, where he pointed to the mirrors while also ‘waving’ his hand as if indicating the process of realignment through the realization of the gesture. By delivering an indexical pointing gesture co-occurring with the verbally named action in this line, Jannick designs his turn for Julius in a way that reinitiates his proposal by using a different assemblage of verbal and bodily resources. Where the first gesture can be seen as completing the turn and naming a shared

32 and we would GAIN those three millimeters which we are
33 missing=you are ar- really on the edge of the (0.4) mirror.
A Jan α ,,,,,, α points to ap-- α ,,,,,, α
34 JUL: .HH ah oh=[ehh,
35 JAN: [which one is this one?
A Jan α α pts-ap α ,,
36 (0.8)
37 JAN: its ζ /h/ /r/?
A Jan ζ to JUL->
38 JUL: yes.
39 (2.1) $\beta\zeta(0.6)\beta(1.5)$
A Jan β nods $2\times\beta$
B Jan ζ to table->>
40 JAN: β #so I would- +(.) β I would do it honestly.#
A Jan β nodding----- β
B Jul +inspecting alignment with card->
C Fig #fig.1 #fig.2



Figure 2

Julius' turn in 1.34 projects an upcoming dispreferred response through its in-breaths and non-lexical vocalizations. Jannick overlaps with a polar interrogative while pointing to the mirror (1.35) and asking to specify the type of mirror. After a delay (1.36), Jannick provides a candidate solution (1.37) in the form of a second polar interrogative which Julius confirms (1.38), and Jannick nods for 0.6 seconds (1.39). After the remaining 1.5 seconds in line 39, Jannick reinitiates a last-ditch attempt to secure his proposal (1.40) using the *I would* format, and a so-called Sacks substitution (Sacks 1992, Schegloff 1989) replacing the named action with the verbal form *do it* and ending the turn with another stance-taking adverbial *honestly*.

The final case bears similarities to the prior one. Jannick upgrades what is essentially the same proposed course of action over three consecutive instances across a single stretch of interaction. He uses format-tying, the *I would X* format, and pointing gestures to propose and upgrade proposals for a single course of action. In comparison to the first two cases, the upgrades are handled much more delicately, with participants responding to their co-participant's disagreement in a more context-sensitive manner. As Jannick reaches the last attempt, it is treated with shrugs, headshakes, and adverbial markers that display an orientation to the low-cost nature of the target action.

In contrast to the prior cases, we see that Jannick's initial proposed action and corresponding pointing gesture are highly indexical to the laboratory procedures. It is only after the first instance of non-acceptance that Jannick verbalizes his action and provides accounts justifying it. In some ways, this case is then inverted with the prior. *I would X* occurs as a last-ditch attempt to control the forthcoming manual tasks, but rather than used as a resource to stop a co-participant from engaging in the course of action, it's used to reiterate an action that has already been proposed. This suggests that participants' local interactional histories (Deppermann 2018) are also resources for overall longitudinal changes.

6.5 Discussion: Grammar, Gesture, and Increasingly Context-Sensitive Practices for Upgrading Accountability

In this chapter, I have focused on cases where Julius and Jannick diverge with the next courses of action to be taken in the laboratory and examine instances where one participant tries to control another's ongoing actions. The possible emergence and routinization of the *I would X* format is available from Julius' first for upgrading attempts in order to control Jannick's action or elicit a response. The increased use of this format and its use as format-tying in local

sequences of interaction shows that it emerges and becomes part of a shared repertoire of practices for iteratively upgrading and pursuing responses in disagreement sequences. Furthermore, it reveals how the management of *deontic authority* and *asymmetry* is a longitudinal accomplishment that occurs across multiple timescales. It is locally achieved on a micro-historical scale across instances of disagreement, but it is also achieved across multiple cases of similar interactions across larger stretches of time.

Additionally, Julius and Jannick recipient design their gestures in ways that index their common ground across stretches of interaction as it accumulates across interactions. Pointing gestures, including pointing and holding, pointing and drawing, or pointing and waving are part of participants' shared practices for recipient designing turns in ways that take a stance to their co-participant's actions. The accountability for recipients to 'see' and align with a gesture and how it is embedded with a participant's stance towards the action it highlights is upgraded over consecutive encounters (Julius, case 2) but may also be displayed by participants early in sequences (Jannick case 2 & 3) and thereby treat as a proposed, but possibility delicate, course of action as being intersubjectively understood by participants without the need to specifically account for what it entails.

Deppermann's (2018) was the first study to conceptualize the accumulation of *interactional histories* as a conceptual and methodological framework for understanding how the *recipient-design* of turns changes over time in naturally occurring social interaction. In this study, he showed how the grammatical design of instructions provided by a driving instructor to his student became increasingly less complex over consecutive instructions to the same student. First, instructions were composed of multiple clauses and grammatical arguments, whereas later instructional turns were reduced to a main clause and adverbial and then, in further cases, often the mere use of iconic pointing gestures. In contrast to studies on the development of interactional competence, here, the speaker adapts their practices to the learning process of the recipient rather than that of the speaker and to the increasing common ground over iterative encounters (see also Deppermann & Pekarek Doehler 2021). As he notes:

The student thus is increasingly positioned as a competent driver who is not in need of instruction anymore and who is finally able to perform the task self-initiatedly in the correct manner ... this is reflected by the design of the instructions as indexical-elliptical reminders, which index that an instruction is not a first instruction but it builds on the should-have-known or known-in-principle character of the instructed action. (p. 320)

Building a (not-yet)-competent driver into one who can successfully accomplish practices such as parallel parking is not just an accomplishment of the learner but the instructor as well. Through analysis of consecutive instructional turns delivered by instructors, Deppermann (2018) showed how participant orientations to a shared *common ground* (1996) in terms of what participants need to know and to accomplish are reflected in turn design. The use of increasingly lean syntax and sometimes no syntax at all reflects that part of common ground is the “should-have-known or known-in-principle” elements of the instruction. While Deppermann does not explicitly refer to this from the angle of accountability, the relationship is observable. In the first instructions, instructors display a reflexive accountability in that they treat the student as novices learning to parallel park while also displaying their own accountability for providing adequate instructions. In following instructions, they do not hold themselves accountable for providing all the verbal details of how to parallel park unless certain contingencies present the need.

In the cases presented above, I have aimed to show how consecutive proposals, first proposals and their reinitiations, display increasing levels of accountability on the part of both participants. On the one hand, with first proposals, speakers in the data often assume some shared expectation that the proposal will be accepted. The post-positioned accounts for these proposals often deal with lack of recipient uptake. Then, in reinitiated proposals, accounts are delivered directly following the proposal. By providing direct accounts, participants display an orientation that their proposed course of action is not merely a taken-for-granted action but one which might require explanations and justifications in describing the costs/benefits or reasoning behind the action. In further reinitiations, participants often make more direct claims to control their participants’ actions through *I would* formats that directly index a need for participants to carry out or stop carrying out some ongoing action. As in Deppermann’s finding (2018), the instances here reveal that common ground allows participants to make more elliptical proposals. In my data, the orientations to common ground come from recipient non-compliance with said proposed actions in the preceding local interactions. Participants thereby orient to the local interactional histories, and in contrast to prior research on proposals (Asmuß & Oshima, 2012; Stevanovic & Peryäkylä 2012; Thompson, Fox & Raymond, 2021), the recipient-design of the proposals in my data are situated within these local interactional histories.

On the other hand, speakers display an orientation to their own conduct in how they deal with first and consecutive proposals. It seems that there is a distinct inclination for participants to use *I would X* formats as resources for controlling actions that seek to close down disagreeing sequences. Speakers equally manage and mitigate the accountability of recipients to understand and respond to proposals as well as their own accountability for making this proposal, in just this way, now.

Enfield (2011) has conceptualized this dual accountability in what he refers to as the enchronic framework in social interaction. That is, with FPPs, participants set up the conditions for which their recipients should respond. Participants design their actions to elicit *effective* responses, such as getting an answer to a question but must also do so while orienting to the *appropriateness* of such actions while not breaching certain norms that might somehow offend a recipient. This line of thinking can be traced to Harvey Sacks' (1992) work on emergency psychiatric phone calls in what he described as a 'procedural rule' in phone call openings. When the hospital personnel introduced their name with "This is Mr. Smith," the caller would often respond either by providing their name, "this is Mr. Brown," or by pursuing some other interactional project, "I can't hear you ." Sacks suggested that if the caller did not give their name in this first slot after the personnel offered their name, then the caller would likely not give their name at all. This posed a problem for the hotline responders. If they were to directly ask the caller for their name, they were faced with the possibility of the caller responding in a way that held them accountable for providing an account for asking for their name. They might ask "why," which would then require the personnel to give an account, which could, in turn, hold result in more "why?" questions and accountable answers. For Sacks, accounts and accountable actions are a method by which participants control the interaction (p.5). According to Sacks, "this is Mr. Smith" provides a next relevant slot for the caller to provide their name, but also resists accountability in that participants were very unlikely to respond to this introduction with "Why?".

Pomerantz (1984b) took up this issue by showing how participants when faced with a lack of effective response to a question, would pursue a response by pursuing understanding problems, checking the facts of their questions, or reversing their position. She pointed out the strategic nature of these different practices for pursuing a response noting that: "seeing a recipient as not understanding what was said is a different order of social event than seeing a recipient as disagreeing" and, indeed, disagreeing is an "emotionally laden" action (p. 162). Participants

accordingly deal with lack of responses strategically and thereby providing the opportunity for non-responsive participants to opt out of doing being non-responsive by treating the initial question as being repairable in terms of the facts or affiliative tenor of the initial question. In this way, accounts and accountable actions are, to quote Sacks, ‘deable with .’ I observe in the data that Julius and Jannick routinely encounter a need to upgrade their proposals for joint courses of action to more direct requests for participants to carry out or suspend some action over the course of stretches of interaction. The findings here are similar to those discussed in Craven and Potter (2010) and Kent (2012) on upgraded directives in parent-child interactions. However, Julius and Jannick do not upgrade their proposals linearly from less to more direct. Instead, they upgrade in second moves by re-explicating aspects of prior proposals, such as the nominated action, and delivering post-positioned accounts that increase the accountability for participants to respond. Arguably, the asymmetries of relationships between parent-child and co-workers are very different. One reason why Julius and Jannick attempt to mitigate and deal with the delicate nature of consecutive proposals is by first using such ‘covert’ practices for pursuing responses described above. When such covert practices do not elicit a preferred response, participants are faced with resorting to other measures, which may account for the emergence of *I would X* as a third attempt.

From another angle, such issues have been relativized as ‘thematizing accountability’ (Enfield & Sidnell 2017) and ‘conduct under description’ (Sidnell 2017). When participants go about their daily interactions, they often do not explicitly describe what they or others are doing. The classic example from pragmatics where a participant utters “is it cold in here?” as a way of indirectly requesting someone to close the window is called to mind. The lack of description of conduct is also entailed in participant responses to actions. Indeed, the next-turn proof procedure provides *emic* and *etic* (in the sense of the analyst’s) perspectives on what actions participants are accomplishing but also provides challenges in understanding the ways in which participants might covertly accomplish delicate actions (Jefferson 2003). Research on issues where the accountability of conduct is directly addressed by participants thus provides an analytical framework for understanding not only action formation and ascription but how specific participants may be accountable according to their knowledge, status, and agency in the interaction (Enfield 201).

This brings into question the possible emergence of *I would X* for doing a particular kind of social action. Grammar is shaped by issues such as frequency, position within turns, position

in sequences, and its public embodiment as action (among others, Fox 2007; see already Schegloff 1996). In unfolding turns, participants build opportunities to participate in the interaction, and the routinization of forms may reflect participants' orientations to the routine contingencies of social interaction (Pekarek Doehler 2019, Pekarek Doehler 2021 & Balamán). First attempts to control a co-participant's ongoing action and their subsequent reformulations are recipient designed and adapted to build relative agency across stretches of interactional histories in dealing with the recurrent practical problems of alignment with procedural laboratory work. Over the cases in this chapter, we have seen how Julius and Jannick build relative agency first by initiating courses of action as 'joint' courses of action, and only after lack of response or acceptance move to upgraded requests that might directly refer to one another's actions as being somehow problematic and accountable. We have also seen that in consecutive days Julius relies on using the *I would X* format as an initial way of staking his agency within earlier moments of resistance in following interactions. This finding has implications for how grammatical formats might come to be used by participants for accomplishing particular social actions that involve dealing with delicate social situations.

Julius and Jannick are non-native speakers, but they are both advanced speakers. These cases do not have to do with language learning or the practices for diversification discussed in chapter 2 on the development of interaction competence. The *I would X* format (1) becomes used increasingly in a variety of contexts by both participants and (2) moves positionally closer to displays of possible resistance from a co-participant. Julius only uses the form after two consecutive attempts to alter Jannick's ongoing action in case 1, whereas he deploys it after the first resisting turn in case 2. The changes in usage as described here relate back to Lave & Wagner's (1991) conception of situated learning as changes in participation. Participants display their deontic rights to decide upon courses of action, whether formulated as jointly or unilaterally, through their increased displays in responding accountably to proposals when resisting. Deontic rights are always managed within the local interaction (Stevanovic 2012, 2019, 2021), but they may be managed differently in response to the local contingencies across interactional histories and longitudinally as well. Relating the usage of the two forms discussed in this chapter, *I would X* and its position within activities suggest that these forms reflect the increased rights associated with participation. M.H. Goodwin's (2001) study on children's intergender jump rope games has intricately shown how participants of different statuses (in her case, gender) develop increasing rights over time in controlling the participation

framework. In her study and the case study here, the usage of forms is not directly linked to participants learning of the forms per se, but rather a way of indexing, displaying, and actively accomplishing agency in interaction. The constitution of identity and agency by language learners as language learners is central to much research in language socialization (Talmy 2008) and L2 interactional competence (Cekaite, 2007) but remains missing from much research on the ‘double socialization’ (Roberts 2010) of L2 workplace interactions (Hazel & Svennevig, 2018). The few studies here have focused on how L2 learners in workplace settings display their language competence (Day & Kristiansen 2018) or achieve ‘target-like’ request forms (Li 2010) but less on how the indexical properties of language are mobilized as assemblages of resources that display expertise and authority (Arminen & Simonen, 2021; Vickers, 2007) and consequently shape opportunities for participation within these settings. The findings here align closely with longitudinal studies of newcomers in new activities (Goodwin 2001) and studies that have stressed the development of a second language as a by-product of routine social interactions (Hellermann 2008, Pekarek Doehler 2018, Pekarek Doehler & Berger 2018). And it is a by-product of how participants' social relationships co-evolve with language practices over time (Brouwer & Wagner, 2004; Pekarek Doehler, 2018; Pekarek Doehler & Berger, 2018; Pekarek Doehler & Skogmyr Marian 2022; Skogmyr Marian 2021). This chapter perhaps aligns more closely with understanding the routinization and stabilization of practices over time as related to the intertwined nature of recurring social actions and social relationships.

In this chapter, I aimed to show how verbal resources are not the only resources that participants use to pursue responses, index common ground, and upgrade accountability. Still, the fact that embodied resources may be adapted to and used in differentiated ways over time has remained largely unexplored (see Streeck, 2021, Stukenbrock, 2021). One contribution of this chapter relates to how the role of gestures and, in particular, environmentally-coupled gestures (Goodwin 2000) are initially used, then later adopted and transformed as a result of interactional histories. Pointing gestures, which have been widely discussed from a variety of research perspectives (Kita 2003), are well known for establishing joint attention in interaction (Mondada, 2014b, Stukenbrock, 2018, 2021) and crucial to establishing domains of scrutiny to prepare the grounds for upcoming procedures in scientific work (Goodwin 1994, 2018) and institutional settings (Hindmarsh and Heath 2000). Participants may achieve pointing to an object through various configurations of the arm, hand, and fingers. Participants may also point

at objects while doing more than pointing to objects beyond the physical reach of the participants but also into imagined, narrational spaces (Haviland 1993, Stukenbrock 2015) or to elements of the speaker's talk to assign contrasting elements (Kendon, 2004). Environmentally coupled gestures may do more than point to objects or domains of scrutiny and display *stances* to the “should-have-known” or “known-in-principle” common ground assumed by speakers to their recipients. Pointing while waving, as seen by Jannick in extracts 2.2 and 4.1, when he indicates that the proposed action should be already within the common ground of the co-participant and thus not only highlights a particular domain of scrutiny but takes a stance on the feasibility of the proposed action. In consecutive turns, Julius reinitiates the same drawing gesture across various proposals. The first instance elaborates on the proposed action, and the second pursues the objective of making his directive accountable. The ‘shape’ of gestures in terms of their manual deployment, their positioning within turns and talk as completing or co-occurring with verbal arguments, and their positions across sequences in interactional histories reveal how assemblages of talk, gesture, and the material world contribute to the in-the-moment dynamic interactional establishment of accountability.

This study is primarily exploratory. To adequately connect how interactional histories and overall longitudinal changes requires more data. The notion of joint development has been discussed before (Greer, 2019), particularly within contexts where social relationships are reflexively adapted with increasing displays of competence (Brouwer & Wagner, 2004; Pekarek Doehler & Berger, 2019). One advantage of the data presented in this chapter is that I have captured the very first time Julius uses *I would X* and its local context. Tracing the first time from the very beginning (Deppermann & Pekarek Doehler, 2021) deserves more research and may provide fruitful results for how change happens over different timescales

Chapter 7: Discussion and Conclusion

In this final chapter, I discuss and review the empirical findings of this thesis. I summarize the results by starting with the three research questions I set out to address and the empirical findings of the thesis. I then discuss the results of these findings related to longitudinal studies in CA and the development of interactional competence (7.2) and the contribution of this study on deontic authority and workplace interactions (7.3) and conclude by reflecting on future directions for research and their strengths and limitations (7.4).

7. 1 Summary of findings.

In this thesis, I aimed to develop an empirical, interactionally informed understanding of newcomers in the workplace and identify possible trajectories of development that might, in turn, mutually inform various aspects of social interactional research. In particular, I set out to address issues related to the development of interactional competence at the nexus of workplace socialization (Ch.2), and the practical resources participants use to manage joint actions as well as the asymmetrical distribution of deontic rights within their routine workplace activities (Ch.2), over time. Therefore, this thesis provides novel insights and contributes to various research gaps.

First and foremost, this thesis represents a still understudied domain of interactional competence within workplace and institutional settings (but see Nguyen 2011, 2012, etc.). First, no studies, to my knowledge, have addressed how newly acquainted professional peers initiate, coordinate, and manage joint actions together over time. The inherent deontic asymmetries that participants face when deciding on their own actions and those of others also provide novel findings within research on social interaction. This study contributes to existing research showing that developmental trajectories are joint (Greer 2019), bidirectional (Ochs & Schieffelin, 2008) accomplishments.

Additionally, by studying issues related to the inherently complex process of organizing joint activities, re-directing the focus from individual actions to communicative activities (Linell, 2009), this thesis sheds light on various actional dimensions. How to initiate new actions, challenge, and resist others' actions, and do so smoothly and inefficiently are of central interest to workplace studies. The findings in this study will provide insight for studies on technologically rich workplace interactions as well as research on the jointness of joint action.

More generally speaking, this thesis has also addressed issues related to how same participants employ and utilize multimodal resources over time in ways that display development and index their changing participation roles. Such studies are relatively recent attention within studies on the development of interactional competence and longitudinal CA (Skogmyr Marian & Pekarek Doehler, 2022), but considering the primordially embodied and multimodal nature of interaction (Streeck et al. 2011),

Finally, and perhaps the most central contribution of this thesis, is its focus on the negotiation of deontic authority over time. In the final part I will devote the discussion to two interrelated issues: 1. What does longitudinal CA tell us about workplace socialization, and 2.

7.1.1 Research question 1 – Summary of results

In the first analytic chapter, I focused on how Julius proposes next courses of action and Jannick's responses. I showed that on the first day of work, Julius engaged in unilateral courses of action and displayed little orientation to Jannick's involvement. Over the course of the first day, Julius began to design his upcoming actions as proposals for joint courses of action. At the linguistic level, he used the first-person plural *we*, *deontic declarative* formats (*have to X*), and rising intonation at the end of his utterance. These findings are reinforced by his embodied conduct. Even when Julius was carries out a course of action unilaterally, as displayed through gesture and movement toward the objects, he increased his use of embodied response mobilizing features (Stivers & Rossano 2010), pausing when on the move, and turning his gaze to Jannick. Julius initially coordinated his embodied conduct to being with activity markers (*so, okay*), and then later in the day, adjusted it to occur during the verbal turn of the proposal or until after Jannick's response. By delaying engagement in a manual task, Julius began using more context-sensitive practices that indexed to the joint nature of working together. In addition, after only a couple of days, Julius displayed increased *deontic authority* by requesting and directing Jannick's assistance in the forthcoming course of action after making first-order proposals. First-order proposals work as a pre-sequence, backgrounding the forthcoming activity as a mutually accepted, common ground and allowing Julius to mitigate his own *deontic authority* in controlling Jannick's in the lab.

Jannick's responses to proposals in this chapter showed a reciprocally tentative deontic stance during the very first days. Jannick typically responded to Julius' proposals with minimal confirmations (*yeah, yep*), and he displayed minimal embodied orientations to engaging in the

actions proposed by Julius. Instead, he followed and observed Julius' actions after Julius had already begun them. The first extract in Chapter 4 makes the participants' tentative displays crystal clear. Jannick formulated his intervention as a 'trick' and pursued no response from Julius, even when one was conditionally relevant. Jannick's first intervention was formatted using the modal-interrogative (*can I*) as if asking Julius for permission to make any adjustments.

Julius' proposals and Jannick's responses during the first project and their first days working together show evidence of a "do-it-yourself principle," similar to what was observed by Sormani (2018) in his ethnomethodological study of laboratory work, as well as more recent studies that show how participants coordinate specific turn design formats (Robinson et al., 2022; Thompson, Fox, Raymond, 2021) and co-occurring embodied conduct (Deppermann & Gubina, 2021; Tuncer & Haddington, 2019) to relativize and distribute agency when involving others in immediate, practical courses of action. The multimodal organization of action formats in initiating and formulating a next course of action shows the context-sensitive nature of negotiating deontic rights and authorities. While research is still limited, it shows how participants manage multiple layers of interaction within joint activities. For example, Julius begins to use *checking actions* that orient to actions he has just accomplished to pivot to and initiate upcoming actions. Then he somewhat paradoxically initiates courses of action that are verbally formulated as a joint action while at the same time visibly projecting his rights to begin the action without making responses from Jannick conditionally relevant.

7.1.2 Research Question 2: Summary of results

In **Chapter 5**, I focused on how Julius displays **resistance** to joint courses of action. The analysis of this chapter showed the other side of balancing *deontic status* and *symmetry*, namely by describing the verbal and embodied resources for dealing with the socially delicate actions of disagreeing and disaligning with a co-participant when working together in an institutional environment. The observed longitudinal trajectory of practices for resistance is similar to that in Chapter 4, in its starting point. In the first days of work, Julius displayed bald non-compliance, unilaterally engaging in a dispreferred action or disengaging from a preferred action. Over time, he recipient-designed his non-compliance by using disagreeing formats (*yeah but*), and then in the data set eight months later, projector constructions (*let's say, I wouldn't say*).

Overall, I observed a general trend in the data that displays of resistance in the later data set are treated as less problematic or delicate by participants (Extract 4). Jannick and Julius frequently interject and intervene in one another's actions, but these often result in the smooth coordination of the embodied participation framework and object transfers. As Jannick and Julius developed a routine practice of allowing each other to interject and intervene, both participants increased the 'discursive thickness' (Pekarek Doehler & Pochon-Berger, 2015) of their disagreeing turns. Their turns were longer, more elaborate, involved more syntactically complex TCU's, and often multiunit responses. Studies on developing L2 interactional competence often show similar findings (see Skogmyr Marian & Balamán, 2019, for an overview). However, the results here should not be conflated with the issue of language learning or that learners are approximating L1 speakers. Instead, these findings show that resistance is an issue of coordinating bodies within a workplace environment (Goodwin, 1994; Hindmarsh, 2010; Koskela & Arminen, 2012) that allows participants to prepare for spontaneous actions such as object transfers or accessing materials. This study shows how, for newly acquainted participants, the smooth cooperation and configuration often described in workplace studies as part of expert 'know-how' (Ryle, 1945) may not always be available to participants in the first instances.

The participants orient to projected resistance as incipient tellings where an interlocutor details and accounts for the upcoming resistance. In some cases in the later data, Julius and Jannick use these accounts as the focal resisting turn. In this respect, the developmental trajectory for resisting practices and its end-point differed slightly from the results discussed in Chapter 4. Instead of displays of higher *deontic authority* and expedited responses, Julius and Jannick seemed to mitigate their personal *deontic authority relative to the other* by ceding the floor and allowing the resisting turn before responding. Cooperating through resistance is only the second part of the story.

7.1.3 Research Question 3: Summary of Results

In Chapter 6, I investigated how practices for proposals and resistance combine and fluctuate across participants' local interactional histories (Deppermann, 2018) as they managed unexpected troubles and disagreements in the lab. I looked at how the sequential ordering of consecutive proposals interacted across cases over time. In analyzing how Julius and Jannick pursued responses through the reformulation of proposals, I aimed to show that the recalibration of practices occurs on a local level in a way that (1) might explain the emergence

and use of the *I would X* format and (2) are made visible through participants' recalibrated gestures.

Julius uses the *I would X* for the first time in this data in case one. In the first case, Julius uses the form after two attempts to alter Jannick's ongoing task. Julius' use of *I would X* belies his embodied conduct (Deppermann & Gubina, 2021). Through his prosodic delivery, nominated action (*leave it!*), and the sequential context, Julius displays high deontic stance in attempting to control the action. However, through designing the turn as a 'my side' (i.e., I would) action, Julius mitigates his own accountability in claiming high deontic authority over Jannick while heightening Jannick's accountability to respond. Over the following days when Julius encounters this form, he does so at early signs of possible resistance (Case 2). Jannick also begins to use it as a format-tying utterance for producing disagreements similar to the language games on the playground described by M.H. Goodwin (1990). When Jannick and Julius build upon one another's prior utterances, they display an orientation to displaying an understanding of the other's forthcoming resistance, in a way that balances the delicate task of compelling a co-participant to stop their current actions.

This chapter's second contribution shows how participants recalibrate gestures in ways similar to the proposal and directive formats here. Notably, Julius (Case 2) and Jannick (Case 3) deliver repeated pointing gestures, combining with sweeps of the arms and waving the hands across the two instances. In analyzing the gestures with their co-occurring conduct and repeated uses over local interactional histories, I argue that participants seek to establish an intersubjective, professional, and contested vision (Goodwin, 1994) of their scientific materials. The process of 'seeing' the gesture goes beyond seeing the arrangement of the material objects and to the co-participant's accountability for not having 'seen' the relevance of an ongoing action. Through the modulation of 'the same' gestures, co-participants attempt to achieve an intersubjective understanding of the consequences of a proposed or resisted course of action, one that takes into account the speaker's stance toward the action, as well as the recipient's accountability to orient to and align with that stance. While I am not sure of a definitive developmental trajectory of repeated gestures across interactions, it seems clear that participants index what should be assumed, shared knowledge by pointing and waving over materials or pointing and sweeping without checking recipient availability. The emerging need to establish intersubjectivity and its formal realization in the shape of gestures and different positions within the sequence may also shed light on how accountability and deontic asymmetry are realized at an embodied level.

7.2 An overview of change over time

7.2.1 Recipient design and routines

The results of this study have contributed three important findings related to longitudinal CA. The first finding relates to change over time and describing the objects that change. The question is are these changes related to the development of IC—and is this development an individual or joint development. The results I have shown share certain characteristics with longitudinal work on the development of (L2) interactional competence. Julius and Jannick both **recipient design** their actions and responses within joint actions in ways that are increasingly context-sensitive and tailored to the actions of the precise other (Pekarek Doehler & Berger, Nguyen 2011). On the one hand, this involves the deployment of verbal and multimodal resources into complex assemblages (Goodwin, 2013) that participants employ as practices. The fine-grained examination of Julius' **practices** for initiating joint courses of action shows stability more than change. While he does begin adding elements to his repertoire, the focus on particular verbal forms which I have taken in this thesis suggests that the sequencing of (micro)actions (transition marking, assessments, formulations⁴) within the process of initiating next courses of action do not change. Julius does change his embodied conduct when initiating next courses of action. Proposals 'on the move' set up very different possibilities for the embodied participation framework, and the coordination of actions between the two participants. I interpret these results as a product of two factors. First, in part, formulating next courses of action through recipient designed embodied conduct opens up more possibilities for Jannick to respond in different ways such as self-selecting. Formulating a course of action on the move constrains a recipient's ability to respond. Second, a possible mechanism of for this change can be attributed to Jannick's increased displays of involvement. By responding to more elements of the chains of actions Julius employs to start new courses of action and intervening, Jannick participates in the establishment of these actions as joint actions.

On the other hand, the focus on particular verbal forms in this thesis limits the scope of other practices that Julius employs for joint activities. More work should be done in this area to

⁴ Whether or not all of these combined are individual actions or a single action depends on the level of granularity. For the scope of this thesis, I consider them all as flexible practices for doing similar actions.

corroborate findings with the literature. However, the observed stability of the deontic declarative forms can also be attributed to its efficacy in naming a course of action without initially designating a recipient. Observing how Jannick and Julius both approach actions delicately in the early days displays their orientations to each other as ‘newly acquainted.’ Research comparing interactions between acquainted and unacquainted participants’ is, in my knowledge, relatively scant. Work by Pillet-Shore (2012) demonstrates how participants modulate stance through prosody in first actions (greetings) when encountering people of varying degrees of friendship. D’Antoni & De Stefani (2022) show how baristas and familiar customers achieve orders in a café through particular levels of sequential organization. Maynard & Zimmerman (1984) showed differences in conversation openings between friends and strangers in a conversational setting, demonstrating that ‘opening moves’ between directly indexed participant’s shared knowledge, experience, and common ground. Unacquainted participants approached conversations more tentatively, seeking to establish general social norms about one other (university studies, city of residence, etc.).

Julius and Jannick seem to typify one another throughout the data. The establishment of coordinative routines as they navigate joint action is the primordial place to get to know someone. The import of this study, I hope, is that in the same way which L2 interactional studies have addressed issues between social relationships and interactional competence (Brouwer & Wagner, 2004; Pekarek Doehler & Berger, 2019; Skogmyr Marian, 2023). Finally the accumulation of the above results also suggests the need for workplace socialization research to build their evidence from the ground up.

7.2.2 On change across multiple timescales

The second import of this thesis relates to change over time across multiple temporalities. The data set in this thesis is unique in that it captures the first days of a newcomer working in an environment. A common challenge to the results I discuss here is this: Do changes over the course of the first day account for change? For consideration, Goffman (1959) says

Among team-mates, the privilege of familiarity—which may constitute a kind of intimacy without warmth—need not be something of an organic kind, slowly developing with the passage of time spent together, but rather a formal relationship that is automatically extended and received as soon as the individual takes a place on the team (p. 51)

Distinctions such as ‘newcomer’ or ‘peripheral participation’ have useful and, to some extent, they are observable in the data. Julius is a newcomer, but the work he has done to study physics from a young age, achieve a multiple degrees and enter the laboratory as a Ph.D researcher means he already has skills and expertise that cannot be captured by data collection. Secondly, as Brouwer & Wagner (2004) note, the import of a notion of community of practice for SLA deserves scrutiny. A speak of an L2 is part of a ‘speech community’ that cannot be defined by the shared goals that constitute a community of practice. Similarly, development of interactional competence may pose challenges for longitudinal CA in new contexts, such as workplace environments. New research terrains in longitudinal CA have already begun to show the multiple stretches of time in which participants adjust their conduct to specific recipients and future research will only provide more insight.

Third, and finally, this thesis has addressed how **deontic rights** change over time. The results of this study show that Julius and Jannick increase the scope of their respective deontic rights to each other, over the courses of days and months. The necessity for the coordinative routines described in workplace studies means that participants must adapt to new situations. Otherwise, the accomplishment of shared communal goals—building a laser, driving a car, or operating on a patient—could be jeopardized. I suggest that the results of this thesis show that the management of deontic rights, including the longitudinal increase in the scope of deontic rights and the ability to control other’s actions, is a facet of interactional competence. In turn, interactional competence is what allows participants to adjust their practices for managing deontic rights.

Discussion

*It is against the background of an individual's daily round that we can
plot ... the junctures where his participation status changes.*

(Goffman, 1971, p. 27)

I started out with a quote from Goodwin and inquired to the nature of what it means to become an expert. I conclude now with a quote from Goffman, taking some liberty with his interpretation. Goffman discussed the everyday travels throughout public places. When participants move from place to place, from home to the office to school and the store, their participation status changes. When people move through both space and time, the scope of their

participation changes. Longitudinal CA is just beginning to scratch the surface of understanding how social practices, individuals, and communities change over time. To finish with one last quote:

“In the beginner’s mind there are many possibilities, but in the expert’s mind there are few.”

Shunryu Suzuki

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