The Quantification of Mutual Engagement in Dialogue

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DECLARATION

I hereby declare that this project is entirely my own work and that it has not been submitted as an exercise for a degree at this or any other university.

______________________________________________ ________________________
Name Date
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Thank you to those who collated and made available the data. Thanks to Kadie O Connor for all your words/brownies of wisdom and to all my fellow CSLLeers for making these 4 years in college the most entertaining years of my life. A final thank you to Dr. Carl Vogel, my supervisor, for creating CSLL, for being so patient and for meeting me every single week to help me with everything I need. I do say, a gem of a person. This thesis is dedicated to my parents, couldn’t have done it without you.
“Repetition is the mother of perfection.” - Ryan Straten

“Just for grins“ – Carl Vogel

“Conversations are like dances. Two people effortlessly move in step with one another, usually anticipating the other person's next move. If one of the dancers moves in an unexpected direction, the other typically adapts and builds on the new approach. As with dancing, it is often difficult to tell who is leading and who is following in that the two people are constantly affecting each other. And once the dance begins, it is almost impossible for one person to singly dictate the couple's movement.” — James W. Pennebaker, The Secret Life of Pronouns: What Our Words Say About Us
ABSTRACT
This project deals with advances in a method of analysis of conversational interaction and engagement, as recorded from a corpus of a courtroom setting, for evidence of grounding and allo-repetition in order to quantify certainty of mutual engagement and understanding. Although conversation analysis has not traditionally been applied in a quantitative way, the goal is to ultimately see if it is possible to quantify certainty that interlocutors have successfully communicated. A finite register method is presented. Repetition in actual dialog exceeds the frequency one might expect from a random process.
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Chapter 1

Introduction

1.0 Aims
This introductory chapter will outline the background to this project; its scope; the
motivations for the project and provide an overview of the overall project. This paper deals
with the quantification of elements of communication; specifically, reliable quantitative
evidence for how a shared context is achieved, understood and used by all parties involved
in communication. From a broad perspective this could be seen as part of a wider search
for experimental measures that are less susceptible to criticisms of a lack of ecological
validity.

1.2 Overview
The project is divided into five chapters. Each chapter addresses different aspects of
understanding and engagement in successful and unsuccessful dialogue. Each chapter
expands the ideas provided in the previous one in a slightly different direction that is
relevant to the ultimate goal of the project and the last of the chapters explain the methods
used and gives an in depth analysis of the results and their significance. This adds weight to
the theories covered in the first four chapters. In Chapter 2, essential theoretical
information and examples will be provided on the topic of mutual engagement to support
the methods that will be used in quantifying mutual engagement in dialogue. Chapter 3
includes more theoretical information on the terms ‘grounding’ and ‘entrainment’, which
are necessary for mutual understanding within a conversation. Chapter 4 gives a
background of the main focus of the project, which is repetition. Chapter 5 explains the
method that was carried out in order to quantify mutual engagement and Chapter 6
discusses in depth the statistical analysis of the results.

1.3 Motivations

This project was motivated by a keen interest in language as a tool for communication. The
topics in this paper also concern semantic and psycholinguistic issues of discourse. This
also appeals to me, as the workings of the mind and the human capacity for language and
understanding are fascinating areas, about which many things remain hidden. Having the
opportunity to conduct a project to extend the work of others was also quite nice. This was
an excellent means of observing how language and discourse function in real situations and
also how mutual understanding is so vital for moving forward.
Chapter 2
Mutual engagement and understanding in dialogue

2.0 Introduction
This Chapter begins by defining mutual engagement and mutual understanding before moving on to a discussion of collaboration and priming, which provides a method that directly taps into syntactic processing. This chapter will also touch on the subjects of intersubjective conformity and interlocutor involvement. Finally, this chapter will demonstrate two real world examples where mutual understanding has been achieved and where it hasn’t and the significance of mutual engagement in our daily lives. Although pretty diverse, this information provides a useful background for the diverse reasoning behind the results obtained.

2.1 Defining mutual engagement and mutual understanding
Mutual engagement in dialogue literally involves members jointly engaging in discussion and exchange by means of their physical co-presence and goal-orientation. This engagement could include a range of things from problem solving, landing a plane to seeking information on something to negation of meaning. For a project like this, where one is quantifying mutual engagement, it must be considered that mutual engagement is not always achieved. In this circumstance especially, a forensic one, it is necessary adopt the maxim, ‘innocent until proven guilty’, i.e. No engagement until there is sufficient evidence for mutual engagement. It is insufficient to presume that engagement has occurred as Mackey and Polio (2009) outline, “engagement can never be guaranteed.”

Think of how extraordinarily complex the process of speech comprehension is for a moment and then consider mutual understanding. If you think of what is occurring behind the scenes you may wonder how two people with two different thought processes are ever able to understand each other at all. An explanation of this is that language evolved for communication, not just thought, and language convention which will be explained below is the reason why people with two completely different thought processes can still mutually engage and mutually understand.

Tedlock(1996) describes two observations about language. The first is that language is indefinite, that every utterance builds on a wide range of knowledge about the world that requires potentially endless expansion for precise application. In contrast, the second is that talk is “so amazingly exact” that turn takers can often talk their way to well shared ideas about what they are doing together.

The collusion claim that Tedlock talks about takes both observations into account. It starts with appreciating how much unspecified knowledge people must have in order to understand each other. The collusion claim also recognizes the “powers of conversationalists to use local circumstances to shape their knowledge into mutually perceptible and reflexively consequential chunks.”

“This marriage of indefiniteness and precision in utterance interpretation both requires and
is made possible by conversationalists entering a state of collusion as to the nature of the world they are talking about, acting on, and helping to create. With a little help from each other, by defining what can (or must) be left vague or made precise, they can shape their talk to fit the contours of the world in which they are embedded, a world that they can prolong to make possible further interpretations of their talk.”

According to Schegloff (1992) Mutual understanding is the process whereby interlocutors satisfy themselves that the intended meaning is being conveyed and understood. Ginzburg (2012) outlines a problem with research done on understanding talk or interaction:

“The major problem with this huge literature, however, is that it is compartmentalized—phoneticians ignore phonology, conversational analysts ignore discourse semantics and phonetics, students of AI ignore psycholinguistics, and so on.”
(Levelt 1993, quoted in Ginzburg 2012, p. 7)

Ginzburg argues that understanding interaction must necessarily look at issues of trouble and misunderstanding as well as shared understanding:

“The interactive stance involves taking seriously the fact that communication involves multiple agents with distinct beliefs and desires and places importance on explicating the potential for misunderstanding, rejection, and correction, as well as success.”
(Ginzburg, 2012; pp. 7-8)

This is why the project adopts the null hypothesis mentioned earlier is that there is no engagement (the conversation is unsuccessful) until there is evidence for engagement. Examples of where there is misunderstanding can be seen below as well as examples where there is success and shared understanding. Research suggests that there is more success/understanding/engagement in task-based dialogue than in dialogue that isn’t driven towards a very specific goal. The notion of engagement is one which Plough and Gass(1993) introduced into the study of tasks when discussing the difference between performances on familiar and unfamiliar tasks. Task novelty, they suggest, is a potentially important catalyst for student engagement. Consideration of engagement turns attention from the task as designed to the issue of how far students engage with the goals of the task. The discourse moved undertaken on a task depend on the mutual engagement of all parties. This cannot be necessarily relied on. They outline that it is not sufficient for learners of a language to be given a general communicative goal: the interlocutors also need to have accepted a purpose for listening and providing feedback – indeed, a purpose for being an interlocutor.

“The key element of engagement can only arise from the interplay of purpose and field.”

Here is an example where one person is giving another person directions over the phone. It is taken from the HCRC Map Task corpus."

*http://www.cs.columbia.edu/~hgs/research/projects/ita-misunderstandings/corpus/hcrc/q7ec1.txt*
This is mediated communication as the two are talking over the phone. Although this is a clear instance of slight lack of understanding, there is clear engagement here. Self repetition is more prevalent here which is probably why the conversation is not so successful as the Giver seems to keep repeating himself and the follower tries to repair each time. Allo (other) repetition is said to often lead to success in collaborative tasks. Repetition will be discussed in chapter 4.

GIVER: then you hang a left.

FOLLOWER: left?

GIVER: sorry east ... go east

FOLLOWER: you mean right? ?

GIVER: aye .

FOLLOWER: right is this below the?

GIVER: mnhmm .

FOLLOWER: oh well.

GIVER: right ... right ... right so you go along there .

A successful conversation has taken place if both interlocutors follow the rules and the main aim of the conversation has been achieved i.e. if the aim is to exchange information, then the necessary information is exchanged; if the aim is to establish social relations, they are successfully established. Mutual understanding is also necessary for a conversation to be successful. Gilleece (2002) outlines that successful conversations do in fact take place even when the speakers’ utterances contain false starts, reformulations, repetitions and laughter. Ambiguities in a speakers’ utterance are just a small part of the several factors that can cause a misunderstanding at any level of a turns meaning, setting the premises for a misalignment between the speakers and the interlocutors interpretations.

2.1.1 Convention in Language

A convention is some form of behavior, which is accepted as “normal” throughout a community. Language is also based on convention. It is this characteristic that enables the interlocutors to have the same meaning attached to the same words. Convention allows for clearer understanding of things. Convention explains the relation between words and their meanings and explains that what is necessary for mutual engagement and coordination in communication is a common system of words. Coordination here refers to the level of understanding between two or more people. This means that people must have coordinated senses of meaning for words and syntax in order to communicate effectively.
Words must have meaning to people. The word ‘forest’ could mean anything, who says it has to mean a beautiful large area of land that houses trees, animals and other vegetation? It is through language convention that we have any sort of shared understanding of the meaning of words. The word forest usually refers to the same concept in the minds of two English speakers. Some have different associations (from ‘Lord of the Rings’ to ‘My back garden’), but the meaning is always somewhat similar. People must have a shared understanding of a concept to proceed in conversation. If people are not both engaged in the conversation, understanding can be lost as meaning is lost. Lewis confirms that at least a part of language is governed by convention: “but so long as even two languages are humanly possible, it must be by convention that a population chooses one and not the other (Lewis, 1969, pg. 50). It is by shared understanding that language convention even came about.

2.1.2 Meaning
Meaning comes in many different forms. The question is whether meaning is individual or meaning belongs to every one of us. Meaning is governed by convention and the notion of common meaning is necessary for speakers to achieve understanding. Without this common social meaning, language would be only used for thought. Language did not evolve for thought alone. As Pinker and Bloom (1990) observe while discussing the debate of whether language is a socially or biologically evolved construct, if language is biologically evolved then it can be compared to human vision, something that is also biologically evolved. They talk about how the eye is a delicate and highly functional product of biological evolution. If one were to design a visual system from scratch, the eye as it is now would likely be a part. If one were trying to evolve a system as well suited to communication as the eye is for vision, one would strive for telepathy rather than human language. So, taking this into consideration, language probably didn’t just evolve for thought. An individual is said to “understand” an expression by relating it to some cognitive structure. Lakoff describes schemes used to represent this conceptual view of meaning and calls them “image schemas” (Lakoff, 1987).

2.1.3 Mutual Knowledge
Mutual knowledge ensures that convention should be followed. There is a need for mutual knowledge in conversation. Mutual knowledge has received quite a few names from various researchers such as ‘common ground’, which will be discussed in chapter 2, and ‘mutual beliefs’. Mutual knowledge in this case includes the expectations of each person about the actions of the other.

The use of definite reference depends on the existence of mutual knowledge and this knowledge forms the basis for all conversation. According to Grace (2004), “memory models”, are what people appeal to when they are trying to interpret a reference to something. The process of priming, which will be discussed later in this chapter, is also very important, as it aids comprehension greatly. Priming is also a central feature in the formation of conventions as they rely on imitation.
Clark and Marshall have proposed that the human memory consists of two separate books or ‘memory stores’. They compare these books to a ‘diary’ and an ‘encyclopaedia’ (Clark & Marshall, 1981).

The diary contains an account of everything significant that a person does and experiences. It is widely found that the more recent the event the more accessible it is in memory. So recent events can quickly lead to mutual knowledge. While the diary inferred mutual knowledge from evidence of co-presence, the encyclopedia infers mutual knowledge from people being members of different communities. The diary contains events; the encyclopedia contains knowledge. Clark and Marshall’s model of the encyclopedia is structured hierarchically according to community. The first ‘chapter’ holds all the knowledge that all human beings are assumed to know. The next chapter contains all the additional knowledge known by every Irish person (or whatever the nationality of the person in question is). Each subsequent chapter in this encyclopedia contains more additional knowledge in communities of decreasing size in one’s life. The principle of it is that there is a chapter for every individual community of which the person is a member. Thus, on searching for a referent in the encyclopedia, one has only to search in the relevant chapter, as it is structured accordingly. This ‘diary’, ‘encyclopedia’ idea is relevant for when repetition will be discussed in chapter 4.

2.1.4 Collaboration and understanding
Having established the roles of convention meaning and mutual knowledge in language we can now apply these in explaining how conversation functions. Here we must consider that conversation and understanding are a ‘collaborative process’ that require engagement of both interlocutors (speakers). Grace (2004) implies that “Those who collaborate in a conversation should receive a better understanding of it.” Speakers collaborate and engage to form mutual knowledge on a topic. Mutual knowledge leads to mutual understanding in most cases. Linguistic conventions are formed through repeated interaction.

People often engage in dialog with specific goals and cooperative purposes. The example above from the HCRC Map Task corpus is an example of two people coordinating with the goal of getting somewhere in mind. Grace (2004) outlines that “Even a casual chat can be thought of in these functional terms as being about establishing or maintaining affiliation. The function constitutes the overall constraint guiding the collective dialogical behavior and retaining the engagement of the interlocutors for as long as it serves the overall joint activity.”
2.2 Priming

Priming plays a significant role in interpreting references. Vogel (2013) states that, “Syntactic priming is the facilitation of processing that occurs when a sentence has the same syntactic form as a preceding sentence.” As we will see later, this is an important factor to consider in this project as we are analyzing when people repeat the same words/ stems/ forms/ inflections as the other speaker in dialogue and also when they repeat their own syntactic forms.

Reitter et al. (2006), found that “speakers are more receptive to priming from their interlocutor in task-oriented dialogue than in spontaneous conversation.” Analysis of priming and imitation is interesting as it directly taps into syntactic processing in the human mind.

Branigan et al. (1999), outline that speakers tend to repeat the syntactic form of the immediately preceding sentence as well as the words they have said. Other studies have found similar effects using sentence completion (Pickering and Branigan, 1998) and sentence recall (Potter & Lombardi, 1998). Importantly, these experiments indicate that single speakers tend to repeat syntactic structure in ways that cannot be explained by non-syntactic (e.g. lexical, semantic, or prosodic) factors. This tendency has been called syntactic priming or syntactic persistence. Participants are in general completely unaware of the priming effect (e.g. Bock, 1986). In their previously mentioned study of syntactic priming in single speakers, Pickering and Branigan (1998) found that although priming effects were not lexically specific, their magnitude was greater when the verb was repeated between prime and target. Garrod and Clark (1993) proposed that engagement in dialogue is a default response, with young children displaying lexical repetition even when it interferes with communicative success.

Priming aids understanding as it enables someone to only have to search certain areas of memory to understand. Grace explains that, “Evidence of priming can be seen when the subject of conversation is suddenly and inexplicably changed. It takes a moment to “regather one’s thoughts” and select the new areas of memory that are relevant for the current conversation.” Imitation and priming also play a large role in forming conventions, as “sometimes people copy each other’s preferences” (Lewis, 1969, pg. 108).

2.3 Intersubjective conformity

Firstly, one must consider what intersubjectivity is. Verhagen (2005) explains it as, “mutual management of cognitive states.” According to Verhagen (2005 p.4), intersubjectivity provides “the linguistic part of the story about humans’ ability to engage in deep cognitive coordination with others.”

McDermott & Tylbor (1986, p. 153), describe it as peoples degree of “collusion”, a term which was discussed above. Collusion derives from the Latin term coludere, which means
‘playing together’. Duranti (1997), while talking about intersubjectivity outlines that mutual engagement is a necessary if not sufficient condition for sustained conversation.

“Linguistic intersubjectivity involves the implication of not simply interlocutors, but people fully invested with self-interests who maintain their personal stances” (Marková, 2003, p. 257; Rommetveit, 1998, p. 228). In studying this case one must take into account that in a courtroom setting, representations of selves may be at stake.

Chen (2001) outlines that “Language is constitutionally intersubjective.” Lexical meaning is never quite owned by one specific person, and yet such meaning is only human (rather than objective) in some crucial sense; hence that meaning is continuously shared among (linguistic) agents. It is also useful to note that these sharings are often the result of a power struggle; they must, sometimes literally, be negotiated, between or “inter-subjects”.

In deciding whether a conversation has been successful or not, one cannot rely on the success of mutual understanding/engagement. It is not often that a lack of mutual understanding will result in anything majorly bad, except for maybe in cases where it is essential to land a plane or save a life. As Vogel (2013) outlines, whether communicators are assumed to generally understand each other seems to be largely a matter of doctrine, the doctrine of intersubjective conformity. It cannot be refuted that neither speakers nor observers of a conversation can verify completely that there has been sufficient understanding/engagement. Vogel proposes a weaker notion of intersubjective conformity “that participants behave as if there has been mutual understanding unless evidence to the contrary is shown.” However, in forensic cases such as this one it is better to adopt the hypothesis, again, ‘innocent until proven guilty’ i.e no engagement/understanding has occurred unless there is evidence of such.

**2.4 Interlocutor involvement**

In a study mentioned by Vogel (2013) on a court case where a non-native English speaker was on trial, he mentions interlocutor involvement. Interlocutor involvement, according to him, is the degree to which dialogue participants are engaged in the conversation. One cannot simply rely on frequency and balance between speakers of turn taking since someone saying “uh-huh” over and over, which is seen frequently in the corpus being analyzed in this project, it is necessary to realize that this shows a lot of turn taking but little to no engagement. Going back to the case mentioned by Vogel in his article “attribution of mutual understanding, the defendant simply provides yes-no answers to everything. This shows more engagement than just yes answers but little to no engagement in terms of substance.

**2.4.1 Intercultural Conversational Involvement**

Intercultural conversation can be uncoordinated and unsynchronized due to differences in communication styles, insufficient language fluency and high levels of anxiety in the second language speakers (Neuliep & Ryan, 1998). To overcome or disguise anxiety, second-
language speakers may choose to smile or nod or use *Uhs* when not understanding misleading feedback causing further miscommunication or even communication breakdown (Day, Chenoweth, Chun, & Luppescu, 1984; Gass & Varonis, 1991). This re-iterates what was said above in the case that Vogel looked at.

To be effective, it is essential for interlocutors to keep track of their common ground and its moment-by-moment changes (Clark & Brennan, 1991). A speaker should not keep adding to a conversation if the listener is not fully engaged, especially if they are a non-native speaker.

Vogel (2013) – “When the context of communication is legal, given its conventional location of burden of proof, it can be more important to attempt to quantify the level of understanding that could have been achieved by linguistic means, for example, during testimony, particularly when nonnative speakers of a language are involved. “

It is more difficult for people who grew up speaking two different languages to understand each other mutually even if they are speaking the same language. The thought process that comes with each language is slightly different. If the language we speak really does affect the way we think then, it is probable that there is not just a language barrier preventing engagement and understanding but it is something a little bit deeper.

### 2.5 Significance of Engagement and Understanding

Engagement then is very important: it makes a difference whether or not the interlocutors’ purposes are shared or, as Widdowson (1983) puts it, whether convergence between interlocutors is sought. This applies whatever the focus of the interaction – an expression of thanks for something, or sympathy over something, an invitation to an event, or an explanation of how something works or why something happened.

Engagement is clearly an essential reference point for the participants’ listening, reading, speaking, or writing. It is also important for most learning activities, and essential for any kind of activity that might be termed holistic, amongst which are what are termed tasks.

Vogel (2013), in his previous work on the subject of mutual understanding outlines that on the rare occasions where linguistic acts, independently of other forms of communication, can have a measurable impact on human survival. He mentions an airplane crash that took place due to lack of understanding. Behan and Vogel (2012), look at recordings from the cockpit of Flight 1549 over the Hudson River to try and gage level of engagement also, looking specifically at repetition, which is essential in all flight control.

The study of mutual Engagement and understanding are also very significant in court cases/forensic cases as they have very dramatic consequences.

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2.5.1 Examples where mutual engagement has been achieved.

To be mutually engaged in a conversation is to have a mutual understanding of what is going on, or at least to attempt to obtain an understanding. Speakers of a turn may orient themselves to prospective problems in its being understood and may build into their talk- while the turn is still in progress and incomplete or, just after its possible completion, in what is called the “transition space” (Sacks, Schegloff, and Jefferson 1974, pp. 705-6).

The following utterance taken from Schegloff(1992), Marcia, who is explaining to her husband why her son is flying and not driving home appears to recognize there is an ambiguity to her phrase “ripped off,”. It can be interpreted as the literal tearing of a convertible soft top roof or the idiomatic usage for robbery.

**Excerpt 1 (MDE, MTRAC, 3:1)**

Marcia: ... Becuz the top was ripped off'v iz car which iz tihsay someb'dy helped th'meselfs.

She re-iterates her sentence by saying “which is to say somebody helped themselves” in an attempt to destroy any ambiguity or misunderstanding. This however does not stop the next speakers attempt to destroy the ambiguity even further.

**Excerpt 2 (MDE, MTRAC, 3:1)**

Marcia: ... Becuz the top was ripped off v iz car which iz tihsay someb'dy helped th'meselfs.

Tony: Stolen.

Marcia: Stolen. Right out in front of my house.

This is a perfect example of a conversation, which is mutually engaged. Both speakers are co-operating to gain a mutual understanding. Grounding, which will be explained in the following chapter, is being achieved. Notice the necessity of allo-repetition to ground the conversation completely. Not only did Marcia re-iterate (self-repair) what she had already said but ‘Tony’ reiterates once again what Marcia has said and Marcia will in turn disprove both interlocutors and any onlookers impressions of misunderstanding using allo-repetition, repeating the word ‘Stolen’.

The fact that a misunderstood speaker can identify what has been misunderstood shows intersubjectivity, on both sides.
The next example comes from a work meeting between a group of people, it indicates clear engagement and understanding, to an onlooker/over-hearer. Notice the allo-repetition(other speaker) of ‘way prior’ towards the end. See 2.

LANGER: Now, David, will you please be able to tell us by e-mail when the drafts can be distributed? I assume it’s too early at this point?
MANDEL: Yes. I mean the notion is that, in fact, the draft that will get distributed is two drafts from this point because there will be a draft that comes out of this meeting which we want you to review.
And then, based on your review, there will be a second draft. And then, Dorothy and Marsh‡ will estimate the final call on it. And that will be what gets distributed.
But as soon as that is available, we will make it available to you in both hard and electronic versions to do as you see fit.
STRICKLAND: So that will be the same draft that goes for the August meeting.
MANDEL: Yes.
STRICKLAND: All right. So it will be prior to August 14th or whatever date it is.
MANDEL: Way prior.
(Laughter)
(Laughter)
VOICE: Tomorrow.

²http://www.athel.com/sample.html
Chapter 3: Grounding and Entrainment

3.0 Introduction
In this chapter I will discuss the notions of grounding and Entrainment. The terms will be defined and relevant studies done mainly by Clark and Brennan will be discussed. Grounding has been mentioned a few times in the above chapter so this chapter hopes to define it to clear any uncertainties up. This chapter also talks about why grounding is an essential part of understanding and engagement and how it and entrainment are linked to repetition.

Pragmatics is the study of how people use context and other information to understand language. The cooperative principle is when people work together to advance in conversation. Literature on pragmatic theory puts it forward that speakers may arrive at a common goal by coming to the realization that they are talking about the same thing, understanding each others’ comments and agreeing to move forward.

Colman(2012) describes the Grounding criterion as “the mutual belief between conversational partners that everyone involved has a clear enough understanding of the concept to move forward.”

Grounding provides a foundation for the speculative conclusions that interlocutors have understood each other. Vogel (2013), states that, “Grounding ultimately is anchored in repetition of words, phrases, and syntactic structures among interacting agents.”

A lot of research has gone into conversational analysis and grounding with regards to legal cases. It is necessary that in a legal setting, people feel understood. Ginzburg emphasizes the need to incorporate repair and grounding into a model of interaction:

“We can suggest that the adequacy of semantic theory involves the ability to characterize for any utterance type the contextual update that emerges in the aftermath of successful exchange and the range of possible clarification requests otherwise.” (Ginzburg, 2012; p. 8; Ginzburg’s emphasis)

3.1 The grounding/collaborative model
The grounding (or collaborative) model of communication which, is put forward by Clark and Brennan (1991) is based around an apparently simple supposition:

"All collective actions are built on common ground and its accumulation." (Clark and Brennan, 1991; p127) The process behind this is based on shared understanding:

"In conversation, for example, the participants try to establish that what has been said has been understood. In our terminology, they try to ground what has been said - that is, make it part of their common ground. But how they do this changes a great deal from one situation to the next. Grounding takes one shape in face-to-face communication but
another in personal letters. It takes one shape in casual gossip but another in calls to
directory assistance.”
(C Clark and Brennan, 1991; p128)

Clark and Schaefer (1989) argue that common ground develops if “the contributor and
his/her partners mutually believe that the partners have understood what the contributor
meant to a criterion sufficient for current purposes.”

This model states that there are two phases in making a contribution in dialogue:

(1) Presentation phase - A presents to B

(2) Acceptance phase - B registers understanding
Understanding could be confirmed through the lack of ‘negative’ evidence (e.g. clarification
requests) or positive evidence, which is preferred (Clark and Brennan, 1991):

(i) Demonstration (strongest)
(ii) Acknowledgement
(iii) Relevant next turn
(iv) Continued attention (weakest)

The two main factors that give meaning to grounding are purpose and medium. olman
states that another aspect of the grounding theory “refers to the lack of perfect
understanding in all communication; for example it may not be enough to simply ask a
question, if that question has not been understood. Rather, there is a level of understanding
that is reached between the actors, based on the current purpose of the communication.”

This ‘level’, is referred to by Clark and Brennan as the ‘grounding criterion’. In the Clark
and Brennan model there is an acceptance of the structures of turn taking and repair seen
in the Conversation Analysis body of research (e.g. Sacks et al., 1974; Schegloff et al., 1977;
Schegloff, 1982 etc.). However, contributions are seen as consisting of two phases; a
presentation phase of the original contribution, and a secondary phase of the acceptance of
that contribution. The implication is that there is a fundamental difference between
attempting a contribution and actually achieving that. How do people perceive that
grounding has been achieved? One way is to look for negative evidence, for example seen
in ”I don't understand...” type utterances; but that according to Clark and Brennan is too
inefficient in communication - rather, people look for positive evidence of grounding.
These generally take one of three types; acknowledgements, relevant next turns or
continued attention.

A further proposal in the grounding model is that of least collaborative effort (further
outlined in e.g. Clark, 1996);

"The principle of least collaborative effort: In conversation, the participants try to minimize
their collaborative effort - the work that both do from the initiation of each contribution to
its mutual acceptance” (quoted in Clark and Brennan, 1991, p135).

As mentioned earlier, the grounding criterion depends on the current purpose of the communication; this grounding may take the form of references (e.g. pointing or describing) or repeating/spelling out. The criterion may not be equal on both sides; for example an adult describing something to a child may have a different idea of when something has been sufficiently explained.

The above has given a brief outline of the grounding model of communication. It has potential to predict the effects of mediated communication. The concept introduced by Clark and Brennan to describe and predict differences, is that of costs; the effort demanded by a medium to convey any given message. Repetition leads to grounding. One could suggest that other-repetition and grounding are essentially the same thing.

3.2 Lexical Entrainment

Lexical entrainment is the phenomenon of the process of the subject adopting the reference terms of their interlocutor. Entrainment is essentially, repetition. Repetition of reference terms, that is. Entrainment can be seen in most conversations especially task based ones. In the HCRC Map task corpus mentioned above, it can be seen a lot. People taking directions off other people tend to use the reference terms of the speaker often.

Recent studies portray conversation as the progressive entrainment of linguistic behaviors of two or more individuals (Pickering & Garrod, 2004). In other words, interlocutors engaged in dialog spontaneously align their linguistic behaviors on multiple levels from prosody to syntax, thus increasing the coordination of attention, action and conceptualization (Fusaroli & Tylén, 2012). This also increases engagement.
Chapter 4 - Repetition

4.0 Introduction
Repetition is shown to be a ubiquitous feature in all dialogue. It has been extensively investigated across many different disciplines, from rhetoric to phonology, philosophy to psycholinguistics and literary studies to discourse and conversation analysis. The goals of the speaker directly affect the type of repetition used. Self-repetition is prevalent in instances where one is giving direction or an account of something, especially under the circumstances, being within a formal setting where every answer is being recorded and analyzed to obtain some information and allo-repetition is prevalent in instances where there is mutual engagement, grounding, entrainment and mutual understanding occurring, or so we hope to prove. This chapter gives an in depth analysis of repetition focusing on its function in dialogue.

4.1 Theory on Repetition

All discourse is structured by repetition (Johnstone 1987: 212), which lies “at the heart of language” (Tannen 1989: 46), not only in how a particular discourse is created, but also in how discourse itself is created (Bolinger 1961). According to Norrick “everyday face-to-face conversation thrives [...] on repetition. Conversationalists routinely repeat their own words and phrases [...] in addition they echo the wording, rhythm, and entire utterances of their interlocutors” (1987: 245-246). Similarly, Schegloff has noted that there are moments during conversation in which “speakers seem demonstrably oriented to producing talk that says ‘the same thing’ as was said before and does so by saying it ‘in the same words’ ” (2004: 120).

However, repetition does not amount simply to saying the same thing over again. Each time a word or phrase is repeated, its meaning is changed. As Cook put it, “even where repetition is exact, the self-same sequences of words take on new meaning in new circumstances, or in the light of what has been done or said before” (2000: 29). On a pragmatic level, “the speech act performed by the original utterance usually differs from the speech act performed by the repeated utterance” (Bazzanella 1996: ix).

Becker in Tannen(2007) states that “The actual a-priori of any language event - the real deep structure - is an accumulation of remembered prior texts”; thus, “our real language competence is access, via memory, to this accumulation of prior text” (435). This sort of re-iterates the idea above about a ‘diary’ and an ‘encyclopedia’ in the mind. Repetition acts as a trigger to our store of memory.
Tannen (1989:46) deals with various types of repetition and thinks that it “raises fundamental questions about the nature of language, and the degree to which language is freely ‘generated’ or repeated from language previously experienced”.

Denke (2005:181) divides the repetitions in her material into the four groups (1) hesetational repetition, (2) rhetorical repetition (semantically motivated), (3) repetition due to return to previous construction, and (4) repetition due to involvement. Variety of functions served by repetition is impressive.

When entrainment (mentioned above) occurs, one considers it to be a confirmation of understanding. Wittgenstein and Heidegger have shown that all meaning is derived from words by means of associations. Its almost like a derivation, a formula in ones head. All to show mutual understanding has occurred.

Johnstone (1987a), briefly surveying research on repetition, notes that repetition is especially frequent in highly formal or ritualized discourse and in speech by and to children. Children try to engage as much as possible while going through the process of learning language. So too do second language learners... Children benefit greatly from repetition. Self-repetition and Other repetition (repeating what the other speaker has said) is essential in a childs learning of language and conversation. Think “choo-choo” and “dine-dins” to name just a couple. Children would not learn or understand language and certainly wouldn’t engage in conversation if repetition was “disallowed”.

We adopt repetition in early infancy. Between the ages of 7-10 months, babies babble in a manner known as reduplicated or syllabic babbling [Petitto and Marentette, 1999]. If told to act like a baby, the majority of people will immediately resort to babbling/uttering syllables repeatedly such as “bababababa”. Petitto and Marentette (ibid) say that although babbling was thought to be the result of the maturation of the speech organs, observation of deaf babies has revealed that those babies who are exposed to sign language (or baby sign) babble using their hands (manual babbling). This shows that babbling is not only the maturation of the vocal system but also to the maturation of the brain.

Snow found that the value of this repetitive type of speech is that it allows children more time to process utterances. Paraphrasing allows young children to understand utterances in which there was vocabulary that they did not understand at the first statement, engaging the child completely in dialogue. The varied purposes simultaneously served by repetition can be subsumed under the categories of production, comprehension, connection, and interaction. Tannen(1989:48)

Repetition provides a conversation that is slower and more understandable. It has a comprehension benefit just like ellipsis etc. Tannen (2012) observes that “Repetition and variations facilitate comprehension by providing semantically less dense discourse. If some of the words are repetitious, comparatively less new information is communicated than if all words uttered carried new information. This redundancy in spoken discourse allows a hearer to receive information at roughly the rate the speaker is producing it.” Both speaker
and listener benefit from the “dead space” provided by repetition. Essentially you are skipping your turn.

Here is an example from Sacks (1992), where he attributes speaker B with effectively skipping his turn:

- A. This is Mr. Smith, may I help you?
- B. I can’t hear you.
- A. This is Mr. Smith.
- B. Smith.

B has provided a way for A to repeat what A has just said and then through B repeating it, B has effectively skipped his own turn, i.e. B should have had a turn which contained his name but he managed to ensure that the place where the name fits was never opened. Sacks claims that people will not simple ignore what they ought to do, but if they do not wish to do it they will employ some other technique in order to avoid it.

Tannen (2007) describes repetition as not only tying parts of discourse to other parts but also bonding participants to the discourse and to each other. Bonded participants in discourse, signifies engagement in discourse.

“Repeating the words, phrases, or sentences of other speakers (a) accomplishes a conversation, (b) shows one’s response to another’s utterance, (c) shows acceptance of others’ utterances, their participation, and them, and (d) gives evidence of one’s own participation. “

In terms of the musical aspect of language, repeating a word, phrase, or longer syntactic unit – exactly or with variation – results in a rhythmic pattern that creates ensemble.

In considering mutual participation in sense making (grounding), each time a word or phrase is repeated, its meaning is altered. The audience reinterprets the meaning of the word or phrase straight away. In the words of Jefferson (1972:303), “a repeat” is “an object that has as its product-item a prior occurrence of the same thing, which performs some operation upon that product-item.” In other words, seeing the same item a second time, listeners re-interpret it’s meaning.

However, repetition is often viewed negatively. Many linguists consider that repetitions were markers of sloppy or disfluent speakers [Wong, 2000].

Aitchison (1994) describes the greek word for repetition:

“The word is battologeo, an eponym after a stuttering Greek named Battos. It originally meant “to stutter”, and came to mean “repeat mindlessly.” It was borrowed into English to
form the words battologize “to utter pointless repetitions,” and battology “a needless and tiresome repetition in speaking and writing”. So, whole making dull use of the cohesive and interactive power of repetitions, let us also in the words of a seventeenth century writer avoid “battologies and loathsome repetitions” (1603).

Tannen notes that repetition is not desirable in conversation, noting that the phrase “you’re repeating yourself” only has negative interpretations. Also, the poet W. H. Auden ([1956] 1986:3) observed that “the notion of repetition is associated in people’s minds with all that is most boring and lifeless - punching time clocks, road drills, etc.” Yet Bolinger makes the point that most of language is “pre-packaged”:

“At present we have no way of telling the extent to which a sentence like I went home is a result of invention, and the extent to which it is a result of repetition, countless speakers before us having already said it and transmitted it to us in toto. Is grammar something where speakers “produce” (i.e. originate) constructions, or where they “reach for” them, from a pre-established inventory...?” [Bolinger quoted in Tannen [2007]]

4.2 Repetition in Philosophy

Kierkegaard asks - “whether a thing gains or loses in being repeated”?

“Repetition plays an important role in modern philosophy as because repetition is a decisive expression for what ‘recollection’ was for the Greeks.“ Just as they taught that all knowledge is recollection, so will modern philosophy teach that all of life is a repetition?

Kierkegaard, in a round about way, gives the idea that understanding is lost until it is found. In his description of repetition he differs from the idea that in an immediate sense repetition points backward, because that which is repeated has already been. Repetition is that the same thing happens again. But Kierkegaard emphasizes that repetition is a becoming. Repetition is something that is to happen. But to the extent that repetition is something one aspires to it seems to connote uniformity: nothing new must happen. One protects oneself by doing the same thing over and over again.

In his use of the concept of repetition, Kierkegaard means the opposite of this. Courage is required for repetition, and this is so because repetition is not something, which comes naturally, but involves a fundamental transformation. More specifically, it consists in repeating something that has been lost.

In dialogue, one supposes this means that all understanding and all engagement has been lost until the moment of self/allo-repetition. Repetition ‘renews’.

https://anticlimacus.files.wordpress.com/2013/03/sobre-la-repeticion-en-kierkegaard.pdf
4.3 Functions of repetition in conversation

1) Participatory listenership
2) Confirmation and clarification
3) Self repair and stalling
4) Effect
5) Truth

Each of these functions of repetition will now be discussed.

1. Participatory listenership
In this type of repetition, speakers often repeat another speaker’s utterance in order to maintain their involvement and engagement in the conversation. The speaker is repeated word for word and the other speaker adds nothing new to the conversation. Tannen gives the following extract from a conversation:

i. DEBORAH You know who else talks about that?
ii. DEBORAH Did you ever read R.D. Laing?
iii. CHAD The Divided Self?
iv. CHAD Yeah, But I don’t/??/
v. DEBORAH He talks about that too
vi. CHAD He talks about it too
[Tannen, 2007]

Tannen explains that the purpose of Chad’s input on line vi is to show acceptance of Deborah’s utterance and to show that he is listening. This type of repetition allows Chad to show Deborah that he is passively participating in the conversation and that although he accepts what she has to say, he has nothing to add to her utterance.

2. Confirmation and clarification

Perrin et al. state that repetition can be used as a confirmation request. A speaker repeats the utterance of the previous speaker in order to signal a potential problem in the utterance and to initiate a repair [Perrin et al., 2003]. The speaker may feel that they have misunderstood or misheard the previous discourse and want the other speaker to clarify what they said.

Father: Il s’est fait tuer (He’s been killed)
Mother: Il s’est fait tuer? (He’s been killed?)
Father: Oui il est arrivé un accident puis le chien s’est fait tuer. (Yes there was an accident and the dog’s been killed)
[Perrin et al., 2003]
In the above example, the mother has repeated the utterance of the father in order to confirm the validity of what he has said. The father understands her utterance as being a request for confirmation, as is illustrated by his response.

For example, when a pilot of an aircraft is communicating with air traffic control, the conversation would go something like.

“Hello to base, this is flight 247 preparing to land on runway 3. Do we have clearance”. They are met with repetition for clarification and confirmation of what they have just said. “Yes 247 for runway 3, you have clearance.” A lack of repetition would lead to ambiguity which can be seen in the discussion of Flying Tiger Flight 66, on February 19, 1989, in which the air traffic control directive, “descend two four zero zero” was evidently understood as having a preposition, “to” rather than a numeral “two,” with the consequence that the aircraft flying at an altitude of 400 feet crashed into a hill 437 feet above sea level, killing all four people on the aircraft. - Cushing(1994)

3. Self repair and stalling
Rieger [2003] suggests that repetitions can be the sign of self-repair. She describes self-repair as “error-correction, the search for a word,, and the use of hesitation pauses, lexical, quasi-lexical, or non-lexical pause fillers, immediate lexical changes, false starts, and instantaneous repetitions.” Rieger’s study was based on the analysis of conversations between English-German bilinguals. She found that although bilinguals use repetitions as self-repairs strategies, they do so differently depending on the language that they are speaking at the time.

Stalling using the mechanism of repetition can allow the speaker to fill in a pause in conversation while they search for their response. Tannen uses an example of two speakers talking on the subject of American Sign Language.

Peter: But how do you learn a new sign?
David: ...How do I learn a new sign? [Tannen, 2007]

In repeating Peter’s utterance, David has slowed the conversation and given himself time to produce a response to Peter’s question. As mentioned above, Repetition of an utterance can allow the interviewee time to produce an answer without leaving pauses in the conversation which might indicate that they do not know the answer to the question.

Interviewer: Là ça fait combien de temps que vous faites ce nouveau travail là? (translation: How long have you had this new job?)
Interviewee: Le nouveau travail?: ça fait un mois là seulement (translation: The new job?: it’s only been a month)
[Perrin et al., 2003]
4. Repetition for effect
Repetition, although a common occurrence in natural conversation, is subconscious. We don’t plan to repeat ourselves or others. This is largely due to the fact that conversation is not itself planned. What do we observe when we look at planned conversation, such as in films or on television shows, during prewritten speeches, and in poetry?

- Conversations in films and television programs
  Repetition in film two purposes. The first is to mimic natural conversations and the second is to create a desired effect.

- Public speaking
  A major part of the work of politicians is public speaking. Repetition is used for effect and emphasis in planned speech.

  The purpose of public speaking is to inform or influence an audience. As such, speakers should deliver a speech in a clear and concise method. If delivered correctly, a speech can be very moving and powerful. Many politicians are known for their public speaking skills. The effect of the “I have a dream” speech by Martin Luther King lives on almost forty years later.

- Poetry and song
  Nowhere else is repetition used for effect as much as in poetry and song. Chorus of songs are all essentially repetitions. Repetition of words, phrases, sentence structures and sounds are all seen in both of these artistic uses of language. A common repetition pattern seen in poetry is that of alliteration.

5. Truth
An interesting study by Schwartz [1982] investigated whether the truth value of a statement increases when it is repeated. This experiment and others like it have shown that by simply repeating a statement, a speaker can convince hearers of its validity. One setting where this can have serious repercussions is in the legal system. One suggests that a lawyer could sway a jury by simply repeating the statements which he wishes them to believe. Smith and Meyer note the importance of repetition in evidence in trials. They say that jurors are often forbidden from note taking in trials and as such, repetition is of great importance in order that the jury remember and believe the arguments being put forward [Smith and Meyer, 1988].

4.4 Self Repetition
It was found that self repetition is very often used in preparation for long and complex sentences. Nevalainen(2006) describes the finding that, men have a much higher rate of repetition-introduced turns than women and men’s repetition-induced sentences are much longer than womens. This is not important here but worth mentioning as it would imply that men tend to assert their opinion/perssist more, which is supported by many studies comparing male and female performances in conversation.

Self repetition certainly has a bad name in several contexts. (“you’ve repeated yourself
again”) Tannen (1989:53) refers to “conventional wisdom by which repetition is considered undesirable in conversation. [...] Evidence of negative associations with repetition abounds.” Jucker (1994:48) suggests that “at first sight many repetitions appear to be a waste of effort”, and Jean Aitchison’s “provisional assessment suggests that immediate self-repetitions of syllables, morphemes, and words can mostly be regarded as bad, since they cause comprehension problems: they tend to be filters out as mistakes, or else treated as iteratives”. (1994:27)

Why is there such extensive research into it? Repetition is a pervasive phenomenon, occurring in the spoken form of all languages, in all societies, and in almost all situations (Merritt 1994:27). Self-repetition, repeating oneself is seen as an attention marker, it calls attention to oneself. That is its main function in dialogue.

Self-repetition is both harmful and useful. It can be harmful in arresting the flow of communication in sever cases of stuttering or hesitation. It is condemned by various writers on the subject from early times (Aitchison 1994:32). On the other hand, repetition is useful, even as self-repetition, by having a number of communicative functions, some of which are important for both the delivery and the processing of the utterance. At this point, Schegloff (1987:84) is worth quoting:

4.5 Allo-Repetition (Other repetition)

Allo repetition is the repetition of the other person in a conversation. Vogel outlines that allo repetition serves the purpose of “reassuring an initial speaker that a message has been heard but also increasing confidence for the speaker who repeats that the message was at least correctly heard.” This is more linked to engagement and mutual understanding and one would hope that the results reflect this.

Schegloff (1987) shows that repeated (“recycled”) turn beginnings in overlapping conversation turns are a poweful tool in gaining advantages in the conversational battle for the floor.

4.5.1 Social aspects

One of the functions of talk is that of relating to other people. We developed language not only for thought but also for communication. Repetition, which is a prominent feature of natural talk, can clearly be seen to have a social function.

“Examining [repetition] is a way of linking the surface patterns of talk with the interactional goal, and of understanding how people are linked to each other through talk in interaction” (Tannen 1987b:580-581). It is clear that the kind of repetition that carries out the best part of social functions is allo-repetition, repetition across speaker boundaries, and it is allo-repetition that is mostly referred to in discussions of the social role of repetitions.
Chapter 5 – Methodology

The dialogue analyzed here has been taken from a legal corpus. It is a recording of a conversation of two individuals involved in a specific court case, which this project has been granted, to use. The dialogue had been independently transcribed already and but was not available on the web. Much treatment was needed for this data to be analyzed.

The dialogue was sent from the USA in ‘.tiff’ (image) format and each file needed to be passed through an OCR (optical character recognition) software, a technology that enables you to convert different types of documents, such as PDF files or images captured by a digital camera into editable data. Following this, separate conversations were put into separate .csv (comma separated values) files, so that they could be processed through the scripts for calculating repetition. Before this could be done, all non-ascii characters needed to be removed.

Another final treatment of the data was needed before the actual method could be implemented. This involved making decisions about where long turns differed from separate successive turns by the same speaker. Turns here, referring to utterances and whether large instances of dialogue by the same person needed to be split up for better analysis or not. This process was carried out at a stage in the project where the end goal wasn’t as clear and the actual results of the project are still unknown so the turn-taking structure of the dialogue has been determined independently, without a specific result in mind. Temporal overlap analysis is not conducted in this project although due to the contributions of interlocutors being interleaved, the transcripts are partially ordered.

The method outlined here is quite similar to that used in Vogel’s (2013) ‘Attribution of Mutual Understanding’ article.

Punctuation is now removed from all documents. It is unimportant in this analysis. The choice of the level of linguistic description at which to consider repetition, however, is. One must consider what the tokens to be counted are going to be. Whether morphemes (smallest grammatical units of a language), words, speech (“POS”) labels (marking up a word in a text (corpus) as corresponding to a particular part of speech like Nouns etc.), concepts, etc. or combinations thereof. The units of representation decided on are types(n-grams – explained later), and their instances are tokens. The text is subsequently individuated as words and restricted part-of-speech labeling.

“Representation of semantic information that is not directly lexically encoded is not made, since it is not safe to conclude that speakers accept as true all logically valid consequences of their assertions.” Vogel (2013)

‘Restricted part-of-speech labeling’ refers only to personal pronouns in this case. POS labeling is used for personal pronouns as they are not exactly repeated but repeated with complementarity in a ‘regular, conversation’ that proceeds successfully. Thus, complementary first-person and second-person personal pronouns are replaced with a
single item (“IY,” regardless of grammatical number). Third person pronouns are left alone and no other part-of-speech labeling is carried out. “Avoiding parsing is desirable to ensure that the methods are replicable and not dependent on any particular theory of natural language syntax.” Vogel (2013) The examples below illustrate the POS labeling on personal pronouns:


The tokens counted therefore are POS labels like these and sequences of words, otherwise known as n-grams. With n-grams, the value of $n$ varies between one and three, one being unigrams, two being bigrams and three being trigrams. In example (3) below B is regarded as repeating two unigrams and one bigram from A’s utterance. In (4), B is counted as repeating four unigrams and one bigram. Since they are sequences, word order matters, and “this is” does not count as a repetition of “is this”.

(3) A: Is this your cat? B: Yes, this is our cat
(4) A: Is this IY cat? B: Yes, this is IY cat

The notion of a “register” has been developed for the processing of each transcript. The register is a designated location of memory for each speaker, used by the algorithm for data extraction. The register is initially empty but eventually contains the contents of the most recent contribution of the corresponding speaker. For example, if the speakers are ‘Mark’ and ‘Katie’, a register will be assigned to Mark and a separate register will be assigned to Katie. Once it is Katies turn, the ‘Katie-Register’ will be updated with whatever her most recent contribution has been. Ideally, each speaker would have a vector of registers so that not only their last repetitions would be recorded but those which are also far back in conversation. The registers are initially empty. This remains a structural definition, since it is not constrained temporally.

Tokens are then compared for each utterance. The tokens are compared with those recorded in the register for each person. If, using the examples of Katie and Mark again, the tokens in Katies current utterance are shared with the tokens in her own register then the selfshared (self-repetition) variable is updated. If the tokens in Katies current utterance are shared with the tokens in Mark’s or someone other than Katie’s register, then the othershared (allo-repetition) variable is updated. The speakers’ register is then updated to contain their most recently processed utterance.

As there are three levels of n-gram, it is necessary to conduct token counts for each of them. The three levels are narrowed down to two now considering that level one can be lexical (unigrams) and level two can be phrasal (bigrams and trigrams), this is presented in terms of a derived factor $Nbar$ with levels “1” and “2+”.

Repetitions are recorded as counts with respect to the values in the registers as either “SelfShared” or “OtherShared” tokens. “In measuring the degree of sharing for a turn $u_1$,
these figures are regarded as proportions of the total number of $n$-grams for each level of $n$ that could have been shared, given the length of $u$, between the turn and the immediately preceding turns as recorded in the registers for each actor.” - Vogel(2013)

**Randomized re-orderings**

The actual repetition values obtained above must now be compared with a number of randomized re-orderings of the turns. In the experiment reported here, we randomize real dialogs ten times. This will obtain clearer results, hopefully showing that there is a difference between the actual and randomized counterparts and that difference is statistically significant. Forms of repetition can be then deemed significant. Re-ordering is only done on entire turns with respect to other turns. They are re-ordered into a random partial ordering. This method supports the level of repetition analysis by speaker or aggregated across speakers comparing self-repetition and self-repetition of sequences as manifest in actual dialogues and their turn-randomized counterparts. In the re-ordered dialogs, speakers still say the same thing overall, but not with any semblance of actual synchronization of contributions with respect to each other.

New start-times and durations for each utterance as turn indices are generated so that re-ordering can be done. These are selected using random generators based on parameters that depend on the values in the original conversation (AKA. the ‘actual’ conversation’). For each utterance, a re-indexing is constructed. The re-indexed utterances are sorted on their temporal indices. Vogel (2013) outlines that, where temporal annotations are available, the analysis of synchronization may have greater depth with the inclusion of consideration of temporal overlap.

Tokens counts of self-shared (self-repetition) and other-shared (allo-repetition) are taken in the re-ordered dialogue the same way as with the actual dialogue. Table 1, below, contains all the variables that are measured and analyzed in this project.

**Table 1 - Variables analyzed**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>DialogType</td>
<td>actual vs. randomized</td>
</tr>
<tr>
<td>OtherSpeakers</td>
<td>Total number of participants, minus one</td>
</tr>
<tr>
<td>$n$</td>
<td>Length of $n$-grams(1, 2, 3)</td>
</tr>
<tr>
<td>$n$-bar</td>
<td>$n$-gram length as a two-level factor (“1” or “2+”)</td>
</tr>
<tr>
<td>Nbar</td>
<td>$n$-bar</td>
</tr>
<tr>
<td>NGrams</td>
<td>Total number of $n$-grams in a turn</td>
</tr>
<tr>
<td>SelfShared</td>
<td>Count of tokens from turn shared with own prior contribution</td>
</tr>
<tr>
<td>OtherShared</td>
<td>Count of tokens from turn shared with</td>
</tr>
</tbody>
</table>
prior contribution of other

<table>
<thead>
<tr>
<th>ss</th>
<th>SelfShared</th>
</tr>
</thead>
<tbody>
<tr>
<td>os</td>
<td>OtherShared</td>
</tr>
<tr>
<td>SSrel</td>
<td>SelfShared/ NGrams</td>
</tr>
<tr>
<td>OSrel</td>
<td>OtherShared/(NGrams * OtherSpeakers)</td>
</tr>
<tr>
<td>NonSelfShared</td>
<td>NGrms-SelfShared</td>
</tr>
<tr>
<td>NonOtherShared</td>
<td>(NGrams * OtherSpeakers)-OtherShared</td>
</tr>
<tr>
<td>nss</td>
<td>NonSelfShared</td>
</tr>
<tr>
<td>nos</td>
<td>NonOtherShared</td>
</tr>
<tr>
<td>SSprop</td>
<td>SelfShared,NonSelfShared</td>
</tr>
<tr>
<td>OSprom</td>
<td>OtherShared,NonOtherShared</td>
</tr>
</tbody>
</table>

One can gather a lot from the results of this but the contrasts of interest are whether actual repetition of unigrams and n-grams for larger values of n exceeds the random counterparts for any speaker. Thus, the null hypotheses tested in each dialogue are as in (5) and (6).

(5) Randomized.Speaker.1 – Actual.Speaker.1 ≥ 0
(6) Randomized.Speaker.2+ – Actual.Speaker.2+ ≥ 0

A discussion of these contrasts will follow in the next chapter along with some examples.

The data is analyzed in each case using a generalized linear model with a binomial error family. Generalized linear models allow for response variables that have error distribution models other than a normal distribution. Here we can analyse significantly different results. These models are created in R, which is a language and environment used generally for statistical computing. Below is an example of how the generalized linear models are created in R using the variables from Table 1.

```
glm(OSprop ~ DialogType*Speaker*Nbar,family=binomial) and
glm(SSprop ~ DialogType*Speaker*Nbar,family=binomial).
```

Adjustments are made for multiple comparisons using directed tests for significance, wherein the null hypothesis essentially is that where DialogType - Randomized repetition will equal or exceed repetition for the corresponding Actual case. Tukey plots are used for this. They are generated in the R multcomp package like so:
\texttt{Int <- interaction(DialogType,Speaker,Nbar)}
\texttt{mos <- glm(OSprop ~ Int,family = binomial)}
\texttt{mos.mc <- glht(mos,linfct=mcp(Int = "Tukey"),alternative="l")}

All tests are discarded which do not hold constant Speaker, Nbar and vary solely Dialog Type.
Chapter 6 – Discussion

6.1 Results
The method of analysis advocated here hopefully provides an index of synchronized engagement in conversation. 15 conversations were assessed. The statistical significance of repetitions is assessed by comparing the proportions in token counts that were shared between each utterance and its immediately preceding utterance of the totals that could have been shared in each case. The two main people involved in these conversations seen in Appendix A are called ‘Featherstone’ and ‘Pennica’. It is inferred from reading the conversations that one of them, Pennica, is an undercover Special Agent who is trying his best to get as much information out of ‘Featherstone’ as possible. Before analyzing the results, one would guess that Pennica would maybe seem a little more engaged due to the goal he has in mind. At the same time, it could be that Featherstone is more relaxed and the flow of his dialogue is more ‘natural’ and to re-iterate what has been said above Pennica, the Special Agent, being aware that everything is recorded and will be used in court, may want to represent himself in a certain way that doesn’t allow for allo-repetition, more for self-repetition, self persistence. The conversations I will be discussing are all numbered in the Appendix A below. The conversations are relatively balanced in the contributions made by participants, for the most part. For each of the bar plots in the following results, a binary variable, DialogType, records whether the measurements for an item correspond to a dialog contribution in its actual order or in a random one. In the analysis, the four levels of N greater than one were coalesced into a single level (“2+”) of a related variable N’. Using a generalized linear model with a quasi-poisson error distribution.

Conversation 1:
The data here is treated according to the methods specified in the methodology chapter (5). For each actual dialogue there are 10 counterparts in which the turns have been randomly reordered with respect to each other.

Results

Table 2: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.
Randomized – R, Actual – A

<table>
<thead>
<tr>
<th>DialogType</th>
<th>OtherSharing</th>
<th>SelfSharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker</td>
<td>A R</td>
<td>A R</td>
</tr>
<tr>
<td>Nbar</td>
<td>OS NOS</td>
<td>OS NOS</td>
</tr>
<tr>
<td>CHILD</td>
<td>1 4</td>
<td>22 27</td>
</tr>
<tr>
<td>2+</td>
<td>0 56</td>
<td>10 550</td>
</tr>
<tr>
<td>PENNICA</td>
<td>1 2</td>
<td>60 34</td>
</tr>
<tr>
<td>2+</td>
<td>0 112</td>
<td>20 1100</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>1 0</td>
<td>90 55</td>
</tr>
<tr>
<td>MALE</td>
<td>2+ 0</td>
<td>268 0</td>
</tr>
</tbody>
</table>
Figure 1. Actual dialog vs Randomized turns: sharing others' (left) & own N-grams (right), by N

Figure 1 (left) graphs the distribution of mean scores for the count of OtherShared, and Fig. 1 (R) shows the same for SelfShared, both for each value of N. Significantly higher values for each value of N obtain in the randomized dialogs than in the actual ones for both.

Here we can see how the proportions of allo-repetition (other repetition) and self repetition differ. The pearson residuals measure the departure of each cell from independence. The shading helps to locate where the major associations are. A residual greater than 2 or less than -2 represents a departure significant at the 95% level. In the figure(1) above, it can be seen that 'child' has higher levels of OS in the randomized version of the dialogue whereas the 'unknown male' has higher levels of SS in the randomized versions of the dialogue than in the actual dialogue. These results are slightly insignificant due to the fact that we are focusing more on ‘Pennica’ and ‘Featherstone’. The null hypothesis is that random repetition will exceed or equal actual repetition in the proportion measures ((2) and (3)).

Figure 2: Allo-repetition in conversation 1: shared vs non-shared tokens by speaker in actual and randomized dialogue
From this point on, it would be wise to discuss only the results that are of great significance. Interactions that do not hold significance for actual conversations are not discussed as the goal here is to disprove the null hypothesis. With respect to repetition of sequences in the preceding contributions of the others, three way interactions, as seen above, are not significant. Any results that haven’t been discussed can be found under each conversation in Appendix A.

**Conversation 2:**

The method is the same for all conversations. See Conversation 1 above and Chapter 5-Methodology for an explanation of the method.

**Results**

Table 2: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.

<table>
<thead>
<tr>
<th>DialogType</th>
<th>OtherSharing</th>
<th>SelfSharing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A R</td>
<td>A R</td>
</tr>
<tr>
<td>Speaker</td>
<td>Nbar</td>
<td>OS NOS</td>
</tr>
<tr>
<td>FEATHER</td>
<td>1</td>
<td>2 7</td>
</tr>
<tr>
<td>STONE</td>
<td>2+</td>
<td>0 6</td>
</tr>
<tr>
<td>PENNICA</td>
<td>1</td>
<td>2 66</td>
</tr>
</tbody>
</table>

|            | 2+   | 0 228  | 0 2280  | 1 227  | 79 2201 |
In figure 4. above, it is worth noting that the value for other-repetition is higher for the actual dialog type. This value is not significantly high but it is promising as it shows that there was more other sharing than self-sharing in the actual dialogue. There is very little data in conversation 2. Recall that the null hypothesis asserts that there is no more repetition in actual dialogue than in randomized counterparts. The contrasts between actual and randomized dialogues are not significant enough to allow rejection of the null hypothesis yet.

Conversation 4:
Results

Table 3: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.
Randomized = R, Actual = A

<table>
<thead>
<tr>
<th>Speaker</th>
<th>N (N-gram length)</th>
<th>Other-repetition by dialog type</th>
<th>Self-repetition by dialog type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Actual</td>
<td>Randomized</td>
</tr>
<tr>
<td>FEATHER</td>
<td>1</td>
<td>OS 15</td>
<td>SS 4</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>OS 8</td>
<td>SS 1</td>
</tr>
<tr>
<td>STONE</td>
<td>1</td>
<td>OS 2</td>
<td>SS 0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>OS 6</td>
<td>SS 0</td>
</tr>
<tr>
<td>PENNICA</td>
<td>1</td>
<td>OS 124</td>
<td>SS 13</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>OS 169</td>
<td>SS 17</td>
</tr>
</tbody>
</table>

In table 2 above, the token counts of other shared repetitions for Pennica is higher than that of self-repetitions, this is also reflected in figures 5 and 6 below. Again this result isn’t too significant, but a pattern seems to be emerging as regards allo-repetition. Figure 6 shows that Pennica has significantly higher levels of OS in the actual dialogue also that Pennica has higher levels of SS in the randomized dialogue. This is a step in a direction towards disproving the null hypothesis that random repetition will exceed or equal actual repetition in the proportion measures.
Figure 5. Actual dialog vs Randomized turns: sharing others’ (left) & own N-grams (right), by N

**Other-repetition by dialog type**

<table>
<thead>
<tr>
<th>N (N-gram length)</th>
<th>Actual</th>
<th>Randomized</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Self-repetition by dialog type**

<table>
<thead>
<tr>
<th>N (N-gram length)</th>
<th>Actual</th>
<th>Randomized</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6: Allo(left) and Self(right): shared vs non-shared tokens by speaker in actual and randomized dialogue

**Conversation 5:**
The randomized dialogue is always going to be quite a bit larger than the area for actual dialogue because there are ten random re-orderings of the actual dialogue as opposed to one.

**Results**
Table 4: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.
Randomized – R, Actual – A

| DialogType | OtherSharing | | | | SelfSharing | | |
|------------|--------------|-----------------|
| Speaker    | A | R | A | R | A | R | A | R |
| FEATHER    | 1 | 72 | 481 | 883 | 4647 | 1 | 4 | 3 | 147 |
| STONE      | 2+ | 10 | 1744 | 67 | 17473 | 0 | 26 | 0 | 260 |
| PENNICA    | 1 | 149 | 1681 | 1698 | 16602 | 0 | 13 | 8 | 122 |
|            | 2+ | 41 | 6579 | 92 | 66108 | 0 | 17 | 4 | 166 |
Table 4 shows that the OS token counts for Pennica are not only higher than those of Featherstone but also are significantly different from those of the SS token counts for Pennica. At the same time, in Figure 7., there are significantly higher values for each value of N obtained in the actual dialogs than in the randomized dialogs for self repetition. Here the value of p is high for both self shared ($p < 2.2 \times 10^{-16}$) and other shared. ($p < 2.2 \times 10^{-16}$) in the actual dialogue compared to the random. It is interesting to note that in conversation 6 (Results in Appendix below), there is no instance of self-repetition, only other repetition. Also in conversation 7 (Appendix A) there is a higher level or other shared tokens, although neither of these are as significant as one would hope.

**Conversation 9:**

**Results**

Figure 8. Actual dialog vs Randomized turns: sharing others’ (left) & own N-grams (right), by N
In Conversation 9 we can see that Pennica has a great deal of self sharing and the number of shared counts is highest for self shared in actual dialogue. From figure 10 we can see that both p values are high and that Pennica seems to have a high self repetition count. If you look at the actual conversation in Appendix A, you will see that Pennica takes longer turns. This is probably why Pennica has such a high self repetition count. This is exactly the same for the case of Conversation 10 and 11.

**Conversation 12**

**Results**
The case of conversation 12 is particularly interesting as you can see in Figure 11. Significantly higher values for each value of N can be seen in the actual dialogs than in the randomized dialogs for both repetition of others\((p < 2.2 \times e^{-16})\) and of self\((p < 2.2 \times e^{-16})\), but especially for repetition of others. This is prevalent in Figure 12 with what looks like Featherstone having a higher level of other shared tokens than Pennica. It was pennica
that started out with more allo-repetitions but now Featherstone has taken over. This is interesting as it shows that Pennica, as suspected earlier, is probably being slightly more persistent with a specific goal in mind. Pennica, if you read the conversations, is always trying to organize something or extract information. Perhaps the reason for the shift in pennicas shared tokens from other sharing to self-sharing has something to do with his patience. Politicians are noted for being able to say the right thing at the right time, as noted by Behan and Vogel (2012), “It would be unsurprising if a politician revealed tactics for seeming engaged during meetings with the public, even when thinking about other matters entirely, as including occasionally repeating words or phrases uttered by their interlocutor or timing contributions to occasionally seem so interested in the content of the conversation to intervene through interruption or talk at the same time as interlocutors without actually taking the floor.” Perhaps Pennica’s patience and acting skills are starting to wear thin. Featherstone however seems more relaxed, sometimes too much. He seems to be engaged and listening for the most part. Notice that in conversation 4, for example, where Pennica has significantly higher levels of OS, Featherstone says ‘huh?’ more than once and then finally declares, “Jesus Christ, I'm tired. God dammit.”. This would explain his lack of motivation to be involved and to understand what is going on. Noting the fact that both Featherstone and Pennica have had high other sharing values is good as it indicated that there is some, maybe small, but some level of understanding happening. That the conversations are proving to be somewhat successful. Conversation 13 is similar to 12 in that Pennica has a high level of Self-repetition.

Table 5: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.

<table>
<thead>
<tr>
<th>DialogType</th>
<th>OtherSharing</th>
<th>SelfSharing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>R</td>
</tr>
<tr>
<td>Speaker</td>
<td>OS</td>
<td>NOS</td>
</tr>
<tr>
<td>FEATHER</td>
<td>1</td>
<td>56</td>
</tr>
<tr>
<td>STONE</td>
<td>2+</td>
<td>17</td>
</tr>
<tr>
<td>PENNICA</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>2+</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 10. Actual dialog vs. Randomized turns: sharing others’ (left) & own N-grams (right), by N

Figure 11: Allo(top) and Self(bottom) repetition: shared vs non-shared tokens by speaker in actual and randomized dialogue
Conversation 15

Results

Conversation 15 as you can see from figures 12, and 13 has high levels of other and self repetition again with other repetition counts \( (p < 2.22 \times 10^{-16}) \) in actual dialogue exceeding those of self repetition counts \( (p < 1.82 \times 10^{-6}) \) with Pennica again having a higher self repetition count and Featherstone being slightly more engaged. Another proposition would be that Pennica is nervous. To quote an extract from the chapter on repetition, “self repetition can be harmful in arresting the flow of communication in severe cases of [...] or hesitation.” Recall the null hypothesis here, random repetition will exceed or equal actual repetition in the proportion measures. Values for \( p \) are higher than 0 and in seem to be in favour of allo-repetition here. Conversation 16 also has high levels of both self and other-repetition as can be seen in Table 6. However Randomized repetitions exceed actual repetitions for Othersharing. The degree of self repetition, which can be seen properly in the bar plot in Appendix A below is quite high for conversation 16.
Figure 12. Actual dialog vs. Randomized turns: sharing others’ (left) & own N-grams (right), by N

Figure 13: Allo(top) and Self(bottom) repetition: shared vs non-shared tokens by speaker in actual and randomized dialogue

Table 6: counts of shared and non-shared tokens by dialogue-type, speaker and n-bar.
Randomized – R, Actual – A
The results that have been significant so far seem to be more or less in both directions. In some instances we have self-repetition counts soaring above other repetition counts but at other times the opposite seems to occur. It is worthy to note, that in most of the conversations below there is a lot of ‘uh-huhs’, ‘um-hums’ and ‘yeps’. As mentioned above, it is redundant to rely on frequency and balance between speakers of turn taking since someone saying “uh-huh” over and over shows a lot of turn taking but little to no engagement. There could be many reasons for this. If one person in the conversation (Pennica) is persisting and self-repeating a lot, it doesn’t allow for the other person to have much input. Everything is being focused on what Pennica is saying, whether it is understood or not. The conversations mentioned above that have a high level of ‘other-sharing’/allo-repetition, such as conversation 12. In the conversation itself in Appendix A, one can see that there is clear mutual engagement happening. Although, both speakers utter ‘uh huh’ a lot, they also both have instances of long turns and seem to be quite mutually engaged in the conversation as they are in the middle of planning something that they have previously discussed.

Judging from the results above, repetition in actual dialog exceeds the frequency of repetition in randomized dialogue more often than not. Both self and allo-repetition can be seen to be quite high in the results. This is infers that there is at least some level of engagement between the two interlocutors. Although there is a high level of other sharing in these conversations, the difference between other-shared and self-shared tokens is not large enough. Although significant, it is not as significant as one would hope but improves a little on previous work. Still, the results of applying the method suggest that the null hypothesis must be retained, that the dialogue has been unsuccessful, to an extent, the dialogue does not present sufficient repetition of words or phrases to suggest that the interlocutors have engaged sufficiently.
Chapter 7: Conclusions

7.0 Recap of Aims and Objectives
The objectives of the present paper were to first, chart the occurrence of self-repetition and allo-repetition in the treated corpus of a court room dialogue, and secondly to present evidence to show that that repetition serves a great number of functions, and that far from being an obstacle repetition is inevitable, and that the chances of repetition between dialog contributions are, in fact, best described by the toss of a coin. Thirdly, to see if reliable quantifiable measures of mutual engagement can be measured.

7.1 Future Work and Conclusions
For future work it would be better to take the timing of the turns into account so that temporal overlap of turns can be taken into account. However, as with most dialogues, one cannot be guaranteed the availability of timing information. Also, alternative treatments of the corpus where one would stem words instead of treating singulars and plurals as distinct might work better. It would also be useful to look at a conversation between two women to see if there is less or more mutual engagement that supports the proposition above, in chapter 4, that male self-repetition exceeds that of females.

The capacity to quantify mutual engagement in dialogue is important for not just forensics but as mentioned above, it is also important in clinical studies, people with autism, schizophrenia, depression etc could all benefit from studies such as this. Not to mention the cases of non-native defendants in forensic cases as well as aircraft landings etc.

Self repetition is an indicator of persistence and dominance as well as hesitance in some cases within a conversation. Allo-repetitions are an indicator of mutual engagement in dialogue. The method is put forward again for future work. Again, actual allo-repetition in a dialogue is in excess of its counterpart measure in randomized versions of dialogue, it exceeds self-repetition in quite a few of these conversations (nearly half the conversations) but the level of engagement is insufficient as the difference is not significant.
Bibliography


Schegloff, E. A. (1987) ‘Recycled Turn Beginnings: A Precise Repair Mechanism In Conversation’s Turn Taking Organization’. In Button, G. and


Appendix A:

Transcripts of conversations

Conversation 1

<table>
<thead>
<tr>
<th>PENNICA</th>
<th>Let me speak to Doug please.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNKNOWN MALE</td>
<td>Ah... he'll be back in hopefully about ten or fifteen minutes.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Be back in ten or fifteen?</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Yeah.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Ah... I'll call back okay.</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Okay.</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Hello.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Can I speak to Doug?</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Ah... he just came and left he'll be back in about forty-five minutes he said.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>All right...</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Okay.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Forty-five?</td>
</tr>
<tr>
<td>UNKNOWN MALE</td>
<td>Yeah, he just came about ten minutes and just rode off again.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Okay bye.</td>
</tr>
<tr>
<td>CHILD</td>
<td>Hello.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Ahm... Ah... about thirty minutes.</td>
</tr>
<tr>
<td>CHILD</td>
<td>Ahm... he's not here right now.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>When do you expect him back?</td>
</tr>
<tr>
<td>CHILD</td>
<td>Ahm... Ah... about thirty minutes.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Yeah.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Great. Ah...I'll be getting in tomorrow, probably in the morning sometime and ah... after I get checked in a room, I'll give you a call, how does that sound?</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Just call me.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Okay, you gonna be at this number?</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Yep.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Okay. I'll get in town and get checked in tomorrow morning and I'll give you a call end ah... get together.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>That sounds good.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>All right, thank you sir.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Bye.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Bye.</td>
</tr>
</tbody>
</table>

Conversation 2

| FEATHERSTONE | Yeah. |
| PENNICA  | Great. Ah...I'll be getting in tomorrow, probably in the morning sometime and ah... after I get checked in a room, I'll give you a call, how does that sound? |
FEATHERSTONE  Just call me.
PENNICA Okay, you gonna be at this number?
FEATHERSTONE  Yep.
PENNICA Okay. I'll get in town and get checked in tomorrow morning and I'll give you a call and ah... get together.
FEATHERSTONE  That sounds good.
PENNICA All right, thank you sir.
FEATHERSTONE  Bye.
PENNICA Bye.

Conversation 3

PENNICA Ain't no problem. All right I'll be out there in a little while then. I'll just honk the horn and you come on out and let me have it so I can take a look at it and see what I can do with it, ah..., late this evening sometime.
FEATHERSTONE  Okay.
PENNICA All right.
FEATHERSTONE  Yep.
PENNICA See ya later.
FEATHERSTONE  Bye.

FEATHERSTONE  Snoopy's?
PENNICA Yeah.
FEATHERSTONE  That's great.
PENNICA All right.
FEATHERSTONE  See you at four o'clock on Friday.

(Tables and graphs are not transcribed, but the content is represented in the context of the conversation.)

Conversation 4
PENNICA Four o'clock Friday.
FEATHERSTONE Yep.
PENNICA All right, see ya then.
FEATHERSTONE Bye.
PENNICA Bye.

Conversation 5

PENNICA This is SA Sam Pennica. The date is May 6, 1993. The time is 4.01 p.m. Reference Case File Number 699-M-4-1. I'm in route to Snoopy's Restaurant on Wake Forest Road and Whitaker Mill Road for a meeting with Doug Featherstone.

PENNICA The time is 4.10 p.m. I'm at the intersection of Six Forks and Wake Forest Road. I'm gonna turn the tape on. I don't see him. Yeah, he's driving a pickup truck. He just backed in. He's wearing blue jeans and a blue and gray striped shirt. Sunglasses ah...looks a cream and dark green colored pickup truck Ford Ranger 150.

FEATHERSTONE (INAUDIBLE)
PENNICA What's going on? You like that?
FEATHERSTONE Huh?
PENNICA You like that?
FEATHERSTONE (INAUDIBLE)
PENNICA Ah, it's not bad.
FEATHERSTONE What's this?
PENNICA Huh?
FEATHERSTONE What you doing with this?
PENNICA Change around a little bit.
FEATHERSTONE That's an automatic?
PENNICA Yeah. It's not bad.
FEATHERSTONE Ah, you getting lazy.
PENNICA What you been up to?
FEATHERSTONE Working my fucking ass off. How bout you?
PENNICA Not bad, staying busy.
FEATHERSTONE Staying busy?
PENNICA Yeah.
FEATHERSTONE Jesus Christ, I'm tired. God dammit.
PENNICA Working hard?
FEATHERSTONE Ah, hell yeah. Trying to finish this fucking house. Running myself fucking ragged
PENNICA I thought you had that done a couple of weeks ago.
FEATHERSTONE It...it closed and um, it appraised, but I mean there's so much, I mean touch a fucking wall here, put plaster back. The God damn guys laid the carpet Monday night and kicked a hole in the fucking wall. A big hole in the fucking wall, you know up on the landing.
PENNICA Ah shit.
FEATHERSTONE He knocked back and kicked that fucking landing tight. He kicked the landing tight all right, he kicked the landing tight all the way, you know, six inches through the fucking wall into the damn insulation.
FEATHERSTONE I'm just tired. I'm just tired. You haven't heard from my boy Capone, have you?
PENNICA Have not. I've been...
FEATHERSTONE I've gotta go up there. I've gotta get the ah...the ah, I'm sure he's pretty worried about me. I talked to one attorney and he said they're gonna ship me regardless.
FEATHERSTONE He told me the only way, I think I told you this, the only for him to get out and let him just get back to Mexico and go from Mexico back into the country. Go ahead and let um ship him and let him just get back to Mexico and go from Mexico back into the country.

PENNICA Yeah, probably the only way they can do it.

FEATHERSTONE I would guess.

PENNICA It's the only way they can do it.

FEATHERSTONE You said you had this thing figured out.

PENNICA I think I got it figured out. You said you wanted a good plan, am I right?

FEATHERSTONE Well...

PENNICA Have you had any ideas.

FEATHERSTONE No.

PENNICA Well, here's what I think I can do. I got this girl that lives...obviously I can't do this by myself, you understand that.

FEATHERSTONE Um hum.

PENNICA But I got this girl that lives in another state that I've used before that can help me.

PENNICA What I think I can do and particularly being a woman, woman to woman, there's more of a trust there, okay?

PENNICA Right up front, is get her to be...pose as a real estate agent wanting to show the house, call and make an appointment and that's our in to the house, okay?

FEATHERSTONE Um hum. The house has been sold.

PENNICA The house has been sold?

FEATHERSTONE Yeah. Yeah.

PENNICA All right.

FEATHERSTONE (INAUDIBLE)

PENNICA When do they close?

FEATHERSTONE I don't know. I have know idea. It doesn't matter, it's sold. Sold...she probably would have.

PENNICA Just call up and say, look, I'm an interior...been hired, I'm an interior decorator for the people that bought your house. I need to come over and do some measuring and look at the carpet color and so on and so forth.

PENNICA Coming from a man, she may be a little leary, the carpet color and so on and so forth.

PENNICA Okay, that's our in to the house. All right, from that point, she takes the girl that's helping me, she takes her car. Is it Ellen? That her name? She takes Ellen's car to the airport. She gets on a fucking airplane to another state under her name, takes some her luggage takes some of her clothes, takes her cosmetics just like she's taking a trip.

PENNICA Go to another state, check into a motel in her name. Set up a dead end for the cops. She gets on another plane under another name and back to where she came from. That sets up a dead end for the cops.

PENNICA She's gone somewhere else, but you got to make sure you got a good alibi that weekend. The best weekend will be when you got your kids.

PENNICA I take care of Ellen, I'll make sure the body is never found. Never. But I need a little cash. Airplane tickets aren't cheap. I need a little expense. I need a little money for this girl. What do you think you can do? You tell me. You tell me what you can afford.

PENNICA You're looking at three plane tickets. I've got to get her here, I got to get her out, and I got to get her back where she come from, all three under a different name.

PENNICA You can fucking fly her from the God damn John Smith all day long if you want, or Jane Doe, then I'll have some idea, so getting the plane tickets under another name are no problem.
PENNICA Getting a damn hotel room in her name are no problem. She goes in there, she sets the room up, makes it look like she's been there, pays for a couple of days, in advance in cash, no one starts looking for her for a couple of days.

PENNICA The car is found at the airport, maybe they do some checking, they gonna find she got on a plane, where she went. They track her at the motel. After a few days, she don't pay, they gonna check the room and they start putting two and two together. Well, hell she's in another fucking state. She went...it looks like she went to another state and whatever happened to her, happened over there. I take care of the body. It's never found. The only two people involved are myself and this girl.

PENNICA She don't know you. You don't know her. She lives in another state and from that point, you and I never see each other again.

FEATHERSTONE You got to quit smoking son. It'll kill ya.

PENNICA Naw. What do you think?

FEATHERSTONE I want you to call me next week.

PENNICA All right.

FEATHERSTONE I like your car, I don't know which one I like better. This door doesn't work.

PENNICA You like my car, but do you like my plan?

FEATHERSTONE Call me next week.

PENNICA Any particular day.

FEATHERSTONE Ah, no, ah.

PENNICA Oh, the photograph, the photograph wasn't in the bag. This girl has got to see...we got to see what she looks like, well for two reasons. To make sure we got the right one and this girl kind of makes herself up to look something like her because the cops starting asking questions, you know what'd this woman look like, bla, bla, bla, bla.

PENNICA All they gonna get is a general description cause there'll be enough time in between that no one really gonna be able to make a positive ID. She's not gonna be around a lot of people long, but if she matches the general description, she can make her hair up or color it, you know, all that shit.

PENNICA Get me a picture. A little bit of money, just enough to cover expenses. What day do you want me to call you?

FEATHERSTONE It doesn't matter. Just give me a call, ah...

PENNICA Let me ask you this. What'll be a good time to do this. I've gotta kind of put her on notice, that I'm gonna need some help. She won't know nothing until she gets here.

PENNICA I get her at the airport, we get a motel, she makes the phone call, we go from there. She don't know nothing until she gets here. All she knows is she's got to help me. Like I said, she's helped me before. I trusted her and things have always gone well.

FEATHERSTONE Call me next week.

PENNICA Any day?

FEATHERSTONE Ah, Monday's good.

PENNICA What's a good day? What's a good time? God damn, it's hard to get up with you.

FEATHERSTONE There'll be another number on that answering machine because I moved onto a kitchen on Monday, okay?

PENNICA Um hum.

FEATHERSTONE If you call me early in the morning before 8 o'clock I'm there. If you call me after...well, I'm gonna quit next week at like descent man's hours, like 5 or 6 o'clock you know.

PENNICA Give me a day and time and I'll call...so I'll know you're there, and you know I don't have to...

FEATHERSTONE I'm home most evenings, you know, after 10 and ah, Tuesday night probably not...cause the kids and I, you know, go out on Tuesday nights, ah...but you can call me anytime.

FEATHERSTONE I'll even know the number, you know, where I'll be in the kitchen.

PENNICA How about I do that?

FEATHERSTONE All you got to do is...
PENNICA I'll call you Monday night.
FEATHERSTONE That's good.
PENNICA Around 10.
FEATHERSTONE Sure.
PENNICA All right, and ah...think about when you want to do it and think about how much money, you may be able, you know a couple of plane...ah...three plane tickets, motel room. You know that type of thing, eight hundred...a thousand dollars will probably cover it, cause we got to do everything in cash.
FEATHERSTONE Sure.
PENNICA Got to do everything cash. This...I know of something else I wanted to ask you about. Her parents' house. They'll probably, wait a while. You know she comes up missing it may draw some attention. Put some time between her and the parents. See what I'm saying?
FEATHERSTONE Um hum.
PENNICA Now, you just ah...you don't want nothing to happen to them, or do you? Now you tell me and I can...because what you say is in that house, you know. How hard is the safe to get into? I don't want to haul that son of a bitch off, I want to get it right there.
PENNICA Will they...will they... Will I have to have the old man to open it for me? Well that's easy to do. I'll put a gun to her head, he's gonna do what the fuck I tell him to do, but do I leave the money alone or, you want it to look like a robbery? It's your choice.
PENNICA You know, it's up to you. I'm gonna put a little time between the two. I can't do um...you know, that's too much fucking heat for you especially, but ah...but I'm not gonna do that one until...when I do that one all I'll do is call you and tell you when you need to be somewhere. We won't meet. All right.
FEATHERSTONE Yep.
PENNICA And, you know I'll call you and tell you when I want...what...I'll just give you the time frame and you tell me whether it will be a good time or not to do that one and if you just say no, hold off, then I'll hold off, cause I don't want to bring any heat on you.
PENNICA With her, that's a...shh..the fucking cops will be in another damn state, but I got to make sure you're at that weekend so I don't go to the same God damn place.
PENNICA I know where I want to go, I don't...I just need to know where, you know, make sure you're not in the same damn state. If you're gonna stay in North Carolina that weekend, that's fine, just make sure you got some people you been with and all that. You probably, you know with her, with all...with that going in a different direction, setting up that trail another way, shouldn't be much heat on you.
FEATHERSTONE Um...
PENNICA Cause people go to big cities and shit happens all the time. You know, especially a woman by herself. Think it'll work?
FEATHERSTONE Um, call me next week.
PENNICA Monday night?
FEATHERSTONE Monday night.
PENNICA Try to get the ah...try to get a picture for me aed ah...a little bit of cash and then think about when you want it done.
FEATHERSTONE I leave these every place I go.
PENNICA Paper clips.
FEATHERSTONE Get my fucking receipts together and my checkbook.
PENNICA Think about when you want it done so I can let this girl...try to put her on standby.
PENNICA All right, so you wouldn't have um...you got um this...you got um this weekend?
FEATHERSTONE Yeah, we switched last weekend.
PENNICA All right.
FEATHERSTONE: I keep my little girls through the fourth and second weekends.

PENNICA: All right, so you wouldn't have um next weekend. What about the weekend after?

FEATHERSTONE: That's the 22nd I believe. We're going to to Virginia...ah...to the mountains of to Virginia...ah...to the mountains of we're going to up there.

PENNICA: Well shit, that'd be a perfect time to do it. You gonna be in Virginia.

You gonna be out of state. She ain't going that way.

FEATHERSTONE: I'll talk to you Monday night.

PENNICA: All right.

FEATHERSTONE: Take care.

PENNICA: All right.

PENNICA: The time is 4.30. The end of the ah... meeting with Featherstone. He's getting in his truck.

PENNICA: You could help if you could get a tag number off that truck. I'm gonna turn the tape off now at this time.

**Conversation 6**

PENNICA: All right buddy.

FEATHERSTONE: Talk to ya later.

PENNICA: See ya then.

FEATHERSTONE: Bye.

PENNICA: Bye.

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<th>Other Sharing</th>
<th>Self Sharing</th>
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<tr>
<td>FEATHERSTONE</td>
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<td>0 5 0 50</td>
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<tr>
<td>STONE</td>
<td>2+ 0 6 0 60</td>
<td>0 6 0 60</td>
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<tr>
<td>PENNICA</td>
<td>1 2 5 7 63</td>
<td>0 7 0 70</td>
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<tr>
<td></td>
<td>2+ 0 6 0 60</td>
<td>0 6 0 60</td>
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**Other-repetition by dialog type**

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**Self-repetition by dialog type**

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<td>3</td>
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<tr>
<td>4</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Conversation 7**

PENNICA: All right. Why don't I call you Monday?

FEATHERSTONE: That's good.

PENNICA: Ah...
FEATHERSTONE    Call me here.
PENNICA Call you here during the day?
FEATHERSTONE    Yep.
PENNICA Okay...All right. I'll call you Monday and ah...see what ah...see where we stand with it.
FEATHERSTONE    See what we know.
PENNICA Yeah. Okay.
FEATHERSTONE    All right man.
PENNICA All right.
FEATHERSTONE    Great.
PENNICA See ya.
FEATHERSTONE    Thanks, bye.
PENNICA Bye.

FEATHERSTONE    That's that other house that we were redoing. I've gotta go back over there and finish up some stuff.
PENNICA Oh okay, the first one?
FEATHERSTONE    If I'm not here, try that one.
PENNICA Okay.
FEATHERSTONE    Okey-doke.
PENNICA All right buddy. I'll see you...call you Wednesday.
FEATHERSTONE    That's great.
PENNICA Bye.
FEATHERSTONE    Bye.
Conversation 9

FEATHERSTONE  Okay, well. I mean. I didn't think there's any expedient... anything we have to do immediately.
PENNICA Right.
FEATHERSTONE  Um, we may have a little fun first.
PENNICA Uh-huh.
FEATHERSTONE  I'll explain that next time I see you.
PENNICA Okay.
FEATHERSTONE  Uh, other than that, I mean, I don't have anything to tell you.
PENNICA Yeah.
FEATHERSTONE  Yes I did, I couldn't get the information last night at all.
PENNICA Okay.
FEATHERSTONE  So, I...I don't know anything.
PENNICA Yeah.
FEATHERSTONE  Ah, again Nancy was real sick and took up most of my time.
PENNICA Sure.
FEATHERSTONE  So, it looks as though she's not been taken care of well at all.
PENNICA Yeah.
FEATHERSTONE  Too bad, but ah... All right, give me a call on Friday.
PENNICA I'll call you Friday and then ah, maybe we ought to try to get together. I'm gonna be coming there on Friday.
FEATHERSTONE  Okay.
PENNICA If you want to try to get together and we can... tell me what you know so far and ah, then we can try and figure something out.

Conversation 10

FEATHERSTONE  Okay.
PENNICA If you want to try to get together and we can...tell me what you know so far and ah, then we can try and figure something out.
FEATHERSTONE  Okay.
PENNICA All right. How about meeting me up at Snoopy's for a few minutes?
FEATHERSTONE  All right.
PENNICA And we can talk. You got time?
FEATHERSTONE  Okay, yeah, give me ten minutes to get there all right?
PENNICA Okay.
FEATHERSTONE: All right. See you in about ten minutes.
PENNICA: Okay, bye.

FEATHERSTONE: Bye.
PENNICA: This telephone conversation was made from a pay telephone at the Crown Gas Station located on Six Forks Road near the intersection of Old Wake Forest Road. The time of the call was at approximately 4:15 p.m., on Friday, May 21, 1993. Special Agent Pennica was able to contact the suspect, Doug Featherstone, at telephone number 821-0729.
PENNICA: Bye.

Dialog Type | OtherSharing | SelfSharing
---|---|---
FEATHERSTONE | 1 | 1
STONE | 2 | 2
PENNICA | 1 | 1

Conversation 11

FEATHERSTONE: So, ah, the closer we get to that the better off we'd be.
PENNICA: Uh huh.

FEATHERSTONE: As far as having as much information as we possibly could.
PENNICA: Well, that's true. Okay, ah, so after Tuesday would be good?

FEATHERSTONE: Yep.
PENNICA: All right, why don't I call you Tuesday?

FEATHERSTONE: That's good.
PENNICA: I'll call you ah...

FEATHERSTONE: Well, call me Tuesday and plan to see me sometime Wednesday.
PENNICA: All right, all right I'll do that then.

FEATHERSTONE: If you can possibly do that.
PENNICA: Well, I can arrange it, I can arrange it.
FEATHERSTONE: Okay.
PENNICA: Okay. All right, I'll call ya then.
FEATHERSTONE: That sounds good.
PENNICA: I'll see ya next week then.
FEATHERSTONE: Huh?
PENNICA: I'll see ya next week then.
FEATHERSTONE: Okay.
PENNICA: All right.
FEATHERSTONE: Bye.
PENNICA: Bye.

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<tr>
<td>STONE</td>
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<td>2</td>
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<td>PENNICA</td>
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Other-repetition by dialog type

Self-repetition by dialog type

Speaker | DialogType | OtherSharing | SelfSharing |
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<tr>
<td>PENNICA</td>
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Pearson residuals:

p-value = < 2.22e-16
### Conversation 12

<table>
<thead>
<tr>
<th>FEATHERSTONE</th>
<th>Are you there?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENNICA</td>
<td>Yeah.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>I'm changing channels on this thing. Ah, it would be for me and it would be beat for us to do it next week same time</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Uh huh.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>If you're gonna be in this direction some time, cause early Monday. Tuesday, some time in there, Wednesday.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Um hum.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Because I'll know some ah... I'll know some stuff because I'm going to see my attorney and we're gonna hold um in contempt.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Um hum.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Cause he's got some information the wants to... to lay on me.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>All right. okay, an... that's gonna put me in a bind because the first part of next week I'm tied up, ah. cause I need... I need some time to go ahead, you know I told you I needed... I got... I got to get one person lined up and I got to get this piece of equipment squared away.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Uh huh.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Ah, I'd like to go ahead and get together and get the money so i can go ahead and get this lined up and then what I'll do is next... when we get together...I'd like to get together tomorrow if we could, ah, and then I can go ahead and get this other stuff lined up and then the following Friday.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>I'll give you a call and make sure everything is still go and then I'll be over there in the area to make sure that, ah, you know, I'm seeing what, I'm suppose to see.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Ah huh.</td>
</tr>
</tbody>
</table>

### Conversation 13

<table>
<thead>
<tr>
<th>FEATHERSTONE</th>
<th>Okay.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENNICA</td>
<td>But ah, that other number, that day number still the best?</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Yep.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Okay, well plan on Friday about 3.30.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Okay.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Ah, did you have any success this weekend in getting that picture?</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Yep.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>All right, good, good. All right then.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Ah, if you got that and the money, we'll be ready to go.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Okay...</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Friday will work great cause then I can go ahead and ah, get things, ah, ready\ that I need to get ready and ah, we'll be good to go the next following Friday.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Okay.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>All right? I'll see ya Friday at 3.30.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Okay bud.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Take care.</td>
</tr>
<tr>
<td>FEATHERSTONE</td>
<td>Bye.</td>
</tr>
<tr>
<td>PENNICA</td>
<td>Bye.</td>
</tr>
</tbody>
</table>
Conversation 14

PENNICA All right. Say about ah, 2 o'clock?

FEATHERSTONE Yep, cause that's...

PENNICA Okay, cause then I...after I...after I meet with you then I'm gonna hit the road. I got a couple of things I could do here tomorrow.

FEATHERSTONE Okay.

PENNICA In the morning and ah, then I'll get with you and hit the road. Okay, ah, bring that stuff with you and ah, I'll see you tomorrow afternoon about 2 o'clock then.

FEATHERSTONE All right man.

PENNICA All right? See ya then.

FEATHERSTONE Yap.

PENNICA See ya then.

FEATHERSTONE Bye.

PENNICA Bye.
Conversation 15

PENNICA This is Special Agent Sam Pennica. The date is Monday, June 7, 1993. I'm gonna attempt to make a telephone call to Doug Featherstone from the FBI district office in Raleigh. I'm gonna call him a telephone number 821-0729. If he's not there, I'm gonna call him at 746-5678. The time is 9.47 a.m.

ANSWER MACHINE Hi, you've reached 821-0729, This is Lynn and this is la work site so please a message for somebody, thanks.

PENNICA Hey Doug, it's me. I was just checking to make sure you're gonna be there today at 2 o'clock. Don't forget. I'll be there. Same place.

FEATHERSTONE Hello.

PENNICA Hey man.

FEATHERSTONE Hey.

PENNICA What's up?

FEATHERSTONE You tell me. How was your trip?

PENNICA Ah, not bad, not bad.

FEATHERSTONE Good. Well not bad, not bad, or real good, real good?

PENNICA Ah, both ways. How was your night?

FEATHERSTONE Oh, oh, oh, um, it's good.

PENNICA Oh good, good. Look, you gonna be there?

FEATHERSTONE At 2 o'clock.

PENNICA 2 o'clock.

FEATHERSTONE Oh Yeah.

Conversation 16

FEATHERSTONE You want me to be honest with you or you want me to lie to you and make you feel good.

FEATHERSTONE I forgot.

PENNICA (Laughing)

FEATHERSTONE Shit. I got... I mean...

PENNICA I sat there for an hour Friday.

FEATHERSTONE God damnit it. Where was I? I was up on my fucking ears something and I thought, and I just totally, I mean until... cause you called me. I got your messages Friday night.

PENNICA Um-hum, forgot all about it?
| FEATHERSTONE | Everything. |
| PENNICA | So what's been going on? Did You find out anything else? |
| FEATHERSTONE | I don't know anything else. Ah, you know, I just think you need to ah... look, let me tell you this all right. Let me be up front wuth you. You don't know me and I don't know you. |
| PENNICA | Um hum. |
| FEATHERSTONE | I got a job that I want...I think accomplished. All right. |
| PENNICA | Right. |
| FEATHERSTONE | I need to he able to trust you. If I give you... let me be up front. If I give you money and a picture. |
| PENNICA | Right. |
| FEATHERSTONE | That's a contract. |
| PENNICA | So? |
| FEATHERSTONE | How do I know that you are who you say you are? |
| PENNICA | Well I guess you got to trust me. I got to trust you. Okay... |
| FEATHERSTONE | Well, if I trust you though and you're not who you say you are that immediately puts me in jeopardy, understand? |
| PENNICA | Yeah, I understand what you're saying. Sure, I understand you... you're, you know, being cautious. |
| FEATHERSTONE | Cautious. |
| FEATHERSTONE | Okay. cause if I give you money and a picture. I've committed a crime, correct? |
| PENNICA | I guess, if you say so, but I'm getting ready to commit one myself. Ah... not the first time either, obviously. |
| FEATHERSTONE | I mean I don't know, okay. That's why I want to know, all right. |
| PENNICA | Not the first time. |
| FEATHERSTONE | All right. How... say we're going to see Capone and your other guy up there, what's his name? |
| PENNICA | Palmer. |
| FEATHERSTONE | Huh? |
| PENNICA | Palmer. |
| FEATHERSTONE | Palmer? |
| PENNICA | Um hum. |
| FEATHERSTONE | Is that his last name? |
| PENNICA | Um hum. |
| FEATHERSTONE | Okay, How do I know you are who you say you are? |
| PENNICA | See I would have thought that you would have done that by now. |
| FEATHERSTONE | Gone up there? Well, I didn't have time. |
| FEATHERSTONE | Ah, or haven't taken the time. |
| PENNICA | I expected you to do that. |
| FEATHERSTONE | Well, you know, is Palmer gonna know, but I... I'm not gonna be able to see Palmer. |
| PENNICA | Naw, you don't need to see Palmer. Ah... |
| FEATHERSTONE | How is Capone gonna know who you are? He thinks you say you are... Is capone still up there? I haven't heard from him. |
| PENNICA | Yeah, yeah he's still up thsre. I saw him a few weeks ago. |
| FEATHERSTONE | You did? |
| PENNICA | Yeah, I'll be... I can't tell you a whole lot, but I will tell you this he's put me onto some things, okay? |
| FEATHERSTONE | Capone has? |
PENNICA Yeah, and ah... he's put me onto sore things that will help him?

FEATHERSTONE Be able to help him?

PENNICA Well, help me and help him when he gets out in the long run.

FEATHERSTONE Well, a guy that I know who knows Capone, attorney down here says that ah... he's got some checking to do [INAUDIBLE].

PENNICA That ain't no problem. That ain't no problem. He and I have discussed that.

FEATHERSTONE We just got to get him back. Do you know how to get him back?

PENNICA Well, I'm gonna have to give him some money. He's gonna come back in through Mexico. Ah, that's the reason he's hooked me up with a deal was to put up some... be able to get some money to give him and some money for myself, but he needs about ten grand to be able to get back in. He'll of course come in under another name to make it look legit. Now getting in aint no problem, but ah... FEATHERSTONE Well, I don't know getting in is any amount of problem. I hope it's not a problem though.

PENNICA Then it all depends on how you go about it.

FEATHERSTONE All right, well...

PENNICA But anyway...

FEATHERSTONE Well, I don't know what you're... I don't know when you're going up there again, but if you see him before I see him, you... you tell him he's in, all right.

PENNICA Um hum.

FEATHERSTONE If you're who you say you are...

PENNICA Um hum.

FEATHERSTONE All right, let me put it to you this way to you. If you are who you say you are, then... cause I'm who I say I am. all right?

PENNICA Um hum.

FEATHERSTONE And Capone knows me well enough from the three fucking months we spent together last year at this time, to know that... that I'll do anything for him, that I possibly can.

PENNICA Um hum.

FEATHERSTONE So his butt... he may have to be out of here for a while, but it won't be a really stressful period of time, okay? I mean we'll make sure that we take care of him.

PENNICA Yeah...

FEATHERSTONE Or... or I'll make sure we take care of him when we get him back in

PENNICA Well, if this thing works out that he's hooked me up with, ah... that won't, you know, particularly getting him some money will not be a problem. His... that's his problem, he doesn't have any money and he doesn't really have anybody on the outside to help him, but he's got... he does and he doesn't, he's got, you know, he's got some good contacts, but ah... that's, well, I say he does, but that's yet to be seen. I'm working on that. Ah, but anyway. You want to wait till the twenty-eighth, what you told me on the phone?

FEATHERSTONE What does your calendar say? What... what is... what is the weekend that starts the fourth of July weekend, do you know?

PENNICA The fourth is on ah Monday, I believe.

FEATHERSTONE I don't know.

PENNICA I believe the fourth is on a Monday this year,

FEATHERSTONE All right, the twenty-eighth I believe is the Monday preceding that, all right. The children and I will leave the Friday before the fourth, okay, and go to Virginia Beach to my mother's house. It seemed to me that'd be the best time, all right?

PENNICA All right, because you're gonna be gone how many days.

FEATHERSTONE At least ten.

PENNICA So you'll have plenty of time.

FEATHERSTONE All right, and that way now. I don't have any idea what she did last summer [INAUDIBLE].

FEATHERSTONE I was in the fucking jail cause she lied about everything.

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PENNICA (INAUDIBLE).
FEATHERSTONE Whatever, all right. Have you been over there to Wake Drive?
PENNICA Yeah.
FEATHERSTONE All right, what do you see over there?
PENNICA He lives in a white two-story house with a gravel driveway. Yeah, that's what I was trying... I was gonna just get your feeling on this.
FEATHERSTONE All right.
PENNICA Is it better... I think it's better to do it in his house than hers and I can go back over there and go into that one, but doing it at hers, whose gonna find her, you know. You gonna walk in with the kids and find her, you know?
FEATHERSTONE Oh no.
PENNICA See, shes not...
FEATHERSTONE She's not gonna show up some place for a period of time, right?
PENNICA Right.
FEATHERSTONE And they're gonna want to know where she is, all right?
PENNICA Right, well, same thing with him.
FEATHERSTONE How you gonna do it? How you gonna do it quietly? You just gonna do it
PENNICA Well, I told you before the piece of equipment I needed. Right, I need a gun, but he's an attorney and he lives in a nice house like that, he ain't gonna have a piece of shit laying around, ok?
FEATHERSTONE Oh yeah, it's better basically (INAUDIBLE), you know that.
PENNICA (Low noise) ah. you know a couple of shots to the chest to her, one to the head to him and I can... he can... you're right-handed, you wear your watch on your left side, put the gun in his h
and and I'm out the front door.
FEATHERSTONE Okay, and I don't. I don't know.
PENNICA And I got to have the gun to...
FEATHERSTONE I don't know where it would look better. She may have a gun she doesn't know how to use in the bedroom.
PENNICA On Wake Drive?
FEATHERSTONE There maybe one because... I have to... without quizzing the kids. See, they are scared to fucking death of her.
PENNICA Um hum.
FEATHERSTONE All right and she asked them every Sunday when they come back what I have, you know, any questions I ask them that weekend, all right.
FEATHERSTONE When Lynn and I were in the mountains of Virginia, they came to Lynn and said, Dad always has a lot of money. Mom wants to know where Dad's money comes from. Do you know where Dad's money comes from? Dad's always got a bunch of cash.
PENNICA Um hum.
FEATHERSTONE Well, Lynn said, you know, work, you know he makes pretty good money working girl. Well you know, what that essentially means is that she's... that she stooped and tried to find out h
ow much and where I get money. okay. Now, all the money that I get is perfectly legit, but I mean I don't work for fucking chicken feed.
PENNICA Yeah.
FEATHERSTONE Okay, but you know it's traceable, but it's not traceable to her.
FEATHERSTONE  Um, so, I can't quiz them and have you be able to walk right in there and physically hold them hostage, find that fucking gun.

PENNICA Right, right...

FEATHERSTONE  And use her gun on him.

PENNICA I'm gonna have to get... I got get one, you know. Ah

FEATHERSTONE  You know he's bound to have a fucking gun in there.

PENNICA Well, he might, see now, you know, if I able to find

FEATHERSTONE  But a lot of...a lot of people don't.

PENNICA But if I'm able to find... If I'm able to find one. hell I'll use theirs, all right.

FEATHERSTONE  Ah, I'm not so certain that I... given my, given my brothers. I'm not so certain I don't it look like...want it to look like she killed him and then killed herself.

PENNICA Could it happen the other way?

FEATHERSTONE  I don't really give a shit,

PENNICA What do you think under the situation would be more believable, him doing her or her doing him?

FEATHERSTONE  Well, the other thing is if you can get her... it's reel complicated now, but if you can get her to write note that says I, for my purpose, okay? For my benefit, that says I've lied out everything and I don't want to go on, something to that effect, okay.

FEATHERSTONE  She's never gonna fucking... we've caught her in so many God damn lies, but she... she seems to continue to she's poor little Miss Muffet.

PENNICA Well shit, you know, it's like the old man and old woman, I told you if I needed to get in the safe I'll hold a gun on the old woman's head, the old an will open it, you know, I hold a gun to him head, hell if she still don't do it, but if you know, of she's in love with him, gonna marry him, all that hell shit then ah..

FEATHERSTONE  Hold the fucking gun to his head and just say write... just wait till... write the letter down that says I've lied about every...ah, you know, I've lied about everything and I don't w\ ant to go on with it...

PENNICA Oh, I could do that, but I think it'd be better In his house, don't you?

FEATHERSTONE  Late at night, whether in that house or the other house.

PENNICA Yeah.

FEATHERSTONE  You know, how you...

PENNICA It looks like he's driving a ah... 300ZX, a silver color about a eighty something.

FEATHERSTONE  I don't know. I've never...

PENNICA That's what was in the driveway.

FEATHERSTONE  I've never an... been by there. All right.

FEATHERSTONE  Then the other thing I'd suggest you'd do because, picture wise, you want a picture, okay? Everything I've got is... there's nothing in there that's not fifteen or more years

PENNICA That ain't gonna do any good though.

FEATHERSTONE  That ain't gonna do you any good. And I don't think you're gonna need a picture.

FEATHERSTONE  Show up at the library Friday night at 6.00, Cameron Village Library.

PENNICA Uh huh.

FEATHERSTONE  All right, you got two and three weeks between now, and you know, I've got two visitations between now and then... and that happening anyway.

PENNICA Right.

FEATHERSTONE  All right, cause that'll be the first weekend in July.

PENNICA Right.

FEATHERSTONE  All right, which I'm gonna take for my first week of summer visitation.

PENNICA Right.
FEATHERSTONE  All right. I'm also there every Tuesday night at 5.30 and now every Thursday night at 5.30, all right. She'll drive a white Volvo station wagon.

PENNICA I've seen that parked in the yard at the house.

FEATHERSTONE  Okay. You know take a picture of her. Ahh... I... I could leave you a camera, but I don't have a camera for you to use fucking instamatic.

PENNICA I can get one.

FEATHERSTONE  You need... you need a telephoto lens.

PENNICA I can get one.

FEATHERSTONE  Fucking take a couple of good pictures of her.

PENNICA All right. You wanna get the money before then?

FEATHERSTONE  Yeah, cause I gotta... I got to make sure... you got any... you think about some other way you know that I... that I can... to be able to tell me that I know who you are.

PENNICA All right.

FEATHERSTONE  All right, I want you tell you... I want to tell you one other thing. Capone knows, you understand what... I any body who killed your best friend, right? hope you've never been there but I mean... we're all up to, I hope you've never been to jail, but you understand what a fucking jail house bond is, right? You watch a guy kill your best fucking friend you ain't gonna tell anybody who killed your best friend, right?

PENNICA Right.

FEATHERSTONE  Also, again you know don't know me and what right, that's the way I feel about honor. A man's fucking bond is his word, especially To the fucking people we're talking about. I've done in my life all right...

PENNICA Yeah.

FEATHERSTONE  Or what I've been up to and I've always remained well above the top of the water, but there's some shit that's going on under water where people never surface back again either, all right.

PENNICA Yeah.

FEATHERSTONE  So when you called me the first time some of that surprised me, all right. I've just been biding my time and been waiting for the proper time, all right.

FEATHERSTONE  We don't have to be anxious about anything. We think we can make it work during this period of time, then it works during this period of time, but it isn't something that's gotta be accomplished immediately.

PENNICA Well, I'm gonna have to take this trip and if we can't do it... we can't do it then, then we'll have to wait until I get back.

FEATHERSTONE  All right.

PENNICA Because you're not in...

FEATHERSTONE  We're gonna have another...

PENNICA Not in that big a hurry.

FEATHERSTONE  We're gonna have another summer period of visitation in there and we'll have another a couple of long weekends, all right.

FEATHERSTONE  Somebody will want to know where they are

PENNICA See it's not... well I tell you what I could do if it's not right for them. I could go over there to the old man and old woman's house, that would probably be right anytime, then if we put some... just do it the opposite and we put some time between the two of them.

FEATHERSTONE  It doesn't matter to me. You're gonna get more cashable money... I mean I don't know how much money she's got in that house

PENNICA Yeah.

FEATHERSTONE  That's left in my house. I told you what I think is there, some jewellery.

PENNICA Yeah.

FEATHERSTONE  All right, and again if... as soon as we know that they're... that they've gone south

PENNICA Right.
FEATHERSTONE  All right, the only person that's gonna be allowed in that fucking house is me.
PENNICA Yeah.

FEATHERSTONE  They're gonna say is all the jewellery and everything here, has this place been robbed and I'm gonna say, naw man. Its all here.
PENNICA Well do me a favor.
FEATHERSTONE  What?
PENNICA I got this map. I went to go ahead and look at the old man and old woman's house. See if you can find it in Wake County. You want some proof. I've got some papers I've never shown anybody. Let me get um out of the trunk.

FEATHERSTONE  All right.
UNKNOWN Police, FBI, out of the car.
UNKNOWN Get down and get your hands back.
UNKNOWN You're under arrest.
UNKNOWN On the ground.
UNKNOWN Give me this other hand...

Other-repetition by dialog type

Self-repetition by dialog type

![Graphs showing repetition by dialog type]

Unknown