

Assuming Identities Online: Experimental linguistics applied to the policing of online paedophile activity

Abstract

This paper uses a research project into the online conversations of sex offenders and the children they abuse to further the arguments for the acceptability of experimental work as a research tool for linguists. The research reported here contributes to the growing body of work within linguistics that has found experimental methods to be useful in answering questions about representation and constraints on linguistic expression (Hemforth, 2013). The wider project examines online identity assumption in online paedophile activity and the policing of such activity, and involves dealing with the linguistic analysis of highly sensitive sexual grooming transcripts.

Within the linguistics portion of the project we examine theories of idiolect and identity through analysis of the 'talk' of perpetrators of online sexual abuse, and of the undercover officers that must assume alternative identities in order to investigate such crimes. The essential linguistic question in this paper is methodological and concerns the applicability of experimental work to exploration of online identity and identity disguise. Although we touch on empirical questions, such as the sufficiency of linguistic description that will enable convincing identity disguise, we do not explore the experimental results in detail.

In spite of the preference within a range of discourse analytical paradigms for 'naturally occurring' data we argue that not only does the term prove conceptually problematic, but in certain contexts, and particularly in the applied forensic context described, a rejection of experimentally elicited data would limit the possible types and extent of analyses. Thus, it would restrict the contribution that academic linguistics can make in addressing a serious social problem.

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1. Introduction

Since at least Labov (1966) sociolinguists and discourse analysts concerned with the description of variation in language across different contexts have had a strong focus on naturally occurring language data. Many researchers express a preference for such data (see, for example, Eysenck, 2014; Hepburn and Wiggins, 2007; Johnstone, 2000; Potter, 1997) arguing that they have a privileged status over experimentally elicited data. We shall argue that not only is such a view conceptually problematic but also, in certain contexts, and particularly in the applied forensic context described, a rejection of experimentally elicited data would limit the possible types and extent of analyses and so limit the contribution that academic linguistics can make in addressing a serious social problem. Our focus in this article is on the benefit of experiments as a research methodology to support and strengthen findings from sparsely available naturally occurring language data.

The research project described here is a UK based project called *Assuming Identities Online*¹ (AIO) that addresses the conversations that occur between sex offenders and the children they abuse through online communications. Two of the research questions we have set ourselves are as follows:

- i. What are the linguistic sources of individual and group variation in style and what is the relationship between linguistic style and online identity performance?
- ii. What linguistic analysis is necessary and sufficient to describe an online linguistic persona to the extent it could be successfully assumed by another individual, and with what level of accuracy and confidence can individuals detect the substitution of one interlocutor with another?

Through law enforcement partners on the project we do have access to naturally occurring data in the form of (i) conversations from real, resolved grooming cases (ii) data produced as part of police operations investigating such cases, and (iii) data generated by the training of online undercover police officers. These data sets will be described more fully later but from the beginning it was obvious to us that working with such data is difficult (in many different ways) and also that it is not wholly necessary to work with it to answer our more general research questions. These considerations led us to the conclusion that an experimental approach could be developed, in order to elicit data comparable to the sets described above.

Much of this paper sets out the considerable problems faced by the AIO project. We are dealing with the slippery idea of individuals' identity, and further to this our context involves that identity being expressed primarily textually. As noted by Donath (1999:29), in the online world 'many of the basic cues about personality and social role we are

accustomed to in the physical world are absent'. This primarily textual identity is mediated through the conventions and software of online chat and occurs in a context where identity performance and identity play can be very conscious and consciously deceptive.

The proliferation of the Internet has led to the emergence of a number of innovative communication media which have undoubtedly increased the connectedness of groups and individuals worldwide. An unintended consequence has been that these same media have enabled child sex offenders to have direct and easy access to potential victims for grooming and sexual exploitation. Sex offenders have made use of these channels to target children, and to facilitate networking with other offenders in order to propagate abusive imagery (Quayle and Ribisl, 2013). Thus, the issue of identity and influence within transnational online communities has become a significant social and policing concern. As noted by Barber and Bettez (2014), research that focuses on the process of online exploitation is scarce. Research focussing specifically on the *linguistic* aspects of these processes is thus rather scarcer.

Members of the AIO project team have been working alongside undercover policing units which have been set up to address the issue of online paedophilic activity. One area of undercover online police work in which linguists have been able to offer their expertise is in assisting police officers in the assumption of alternative online identities. Such a strategy might be considered in cases where a child has been identified as having been subject to online sexual abuse or grooming. In such a situation the safety of the child is of the first concern and they will be removed from the situation to a safe environment. Once this has been achieved it can then be possible, under UK law, for a police officer to be authorised to take on the identity of the child to continue the online interaction. The purpose of such an exchange would be to further the investigation with a view to being able to arrest the offender. In a different scenario following the arrest of an online offender, police officers may be authorised to take over the identity of that offender to continue their online interactions to better investigate the offender's networks and pursue further arrests.

In order to understand why we believe experimental work is a valuable approach it is necessary to understand fully, not only our view as to the nature of identity, but also the intricacies of the criminal context and computer mediated contexts. We argue that the intersection of our research questions and these contexts motivate an experimental approach as part of the wider project, and that through eliciting data we can ask questions we could not ask through collecting 'naturally occurring' data alone. It is not our intent in the most part to discuss the findings arising out of the analysis of our data sets but, through a small number of examples, to demonstrate that the data set allows for questions to be asked that could not be addressed in other ways. We will not be providing detailed data analyses we to properly answer the wider research questions set out above, rather our presentation of

examples is necessarily selective, and intended to simply demonstrate the value of experimentally elicited data in this highly applied context.

2. Situated identity performance

The concept of identity has received a great deal of attention from scholars in a number of fields, having become one of the unifying themes of the social sciences during the 1990s (Jenkins, 2004; Rampton, 2010). It has been argued that language is the most flexible and pervasive resource available for identity production, and that language and identity are 'ultimately inseparable' (Joseph, 2004: 13). This is nowhere truer than in the domain of computer mediated discourse (hereafter CMD) (Herring, 2001; 2004), where users do not have access to the full range of semiotic channels that they would have if communicating face to face (Herring, 1999), and where sociolinguistic research has nevertheless been rather slow to get off the ground (Androutsopoulos, 2006).

Brubaker and Cooper (2000) describe the myriad ways in which identity has been conceptualised in the literature, placing these conceptualisations on a continuum ranging from those that see identity as a fixed entity at one end, to those that view it as a fluctuating and emergent process at the other. As Edwards (2009) points out, the latter, poststructuralist viewpoint has emerged as the more prominent in contemporary discourse analytic research. While in early variationist studies, 'languages' and 'groups' were taken as given, and within early anthropological work social identities have been represented as distinct from one another and as internally homogenous (Bucholtz and Hall, 2006), recent thinking has leaned more toward viewing variation in linguistic behaviour as the norm. It has sought to shed light upon the ways in which such concepts as 'a language' and 'a group or community' come into being through the acts of identity which people perform (Le Page & Tabouret-Keller, 1985). Thus, the focus has shifted from the potential correlations between social and linguistic variables onto the exploration of how identities are invoked and enacted through the deployment of linguistic resources (Bauman, 2000). In other words, attention has moved away from isolated linguistic variables onto discursive practices, and from homogeneity to variability (De Fina, 2006).

We take Ochs' (1992) concept of indexicality – the process by which particular practices, including linguistic structures, become indirectly associated with particular social categories as a point of departure. We focus on the processes by which individuals perform their membership of particular identity categories, as well as how this membership can be resisted or played with, either overtly or through implicit processes of implicature, presupposition, stance, footing and/or identity-salient linguistic practices (Bucholtz and Hall, 2005).

We use *performance* in its broadest sense, which is to say that, like Bauman (2000), we consider it to refer to every day interactional moments. From Bauman's perspective, performance is 'situated, interactional, communicatively motivated'; and identity is an emergent construction: 'the situated outcome of a rhetorical and interpretive process in which interactants make situationally motivated selections from socially constituted repertoires...for presentation to others' (2000: 1). Bucholtz and Hall (2006) describe performance as 'a highly deliberate and self-aware social display...[which] occurs...in frequent and fleeting interactional moments throughout daily life' (p.380-381), and go on to maintain that while post-structuralist readings of performance often view it as the result partially of 'reiterations of hegemonic practices', the notion of individual agency remains central to current understandings. Tied to this is the use of stylisation, defined by Bucholtz and Hall as 'the highlighting and exaggeration of ideological associations' (2006: 381), and it will be useful to keep stylisation in mind as the paper moves into discussion of online language use.

A further crucial point for understanding the relationship between language and identity is that while *beliefs* about how particular social groups speak and act are rigid and reductive, the *actual* performative practices in which people engage are in fact highly complex and fluid (Bucholtz and Hall 2006: 382). Thus, while there exist widely held stereotypes about how members of particular 'groups' – for example teenage girls – use language, an examination of the authentic patterns of language use by individuals falling into this category will likely reveal a far more complex process of selection from available resources. We must therefore be alert to the dangers of relying too heavily on ideological assumptions.

Within this interactionist position we wish also to recognise that identity performances are necessarily constrained. This is less explored in the literature, but we recognise that the possibilities of any individual's identity performance are not boundless. Such constraints may occur for different reasons. For example, an individual's identity performance may be constrained by properties of their physical self; instances of brain damage limiting individuals' language capability are well described (e.g. Garman, 1990) and part of the tragedy of such neurological conditions is that the limits imposed by cognitive deficits constrain, in a very real way, the potential identity performances available to the individual. Further to this, at the sociolinguistic level identity performances may be constrained by the languages an individual knows or the varieties of a particular language in which they are fluent. Unless they are exposed to and learn a particular language variety, an individual is not able to perform identities which draw upon that form of language. It may be possible to take this position still further to suggest that certain genres of interaction deliberately or otherwise constrain interactants to perform particular identity roles. For an individual who

has been subjected to a sexual assault, the genre of the courtroom trial constrains their performance; for example, within such a context it may be easier to express identities associated with 'victim' than with 'survivor'. Whilst there is not space in this paper to fully develop this argument it is important at this point to acknowledge that our position is of a 'situated identity' that arises out of interaction. In summary, an individual's performance of identity in the interaction may draw on all the resources that the interaction affords them but also that the resources of identity construction are inevitably constrained by the form of the interaction, constrained by the individual's own sociolinguistic history and constrained by aspects of their physical self.

This view of identity as situated and constrained is at odds with a view implicit in much of the work from within computational forensic linguistics on the sociolinguistic profiling of authors (e.g. Argamon *et al.*, 2007; Juola, 2006). Such work seeks to correlate linguistic categories with social categories such as age, gender, ethnicity and race (see Herring, 2004), and thus takes a simplistic view of identity as being merely a collection of pre-defined social variables. Since our approach is informed more by the linguistic ethnographic concern with how language users orient *themselves* to these categories (Rampton, 2010), and the processes by which they perform their membership, it is evident that there is a gap to be bridged between current theoretical understandings on the one hand, and practical, operational conceptualisations on the other. Situated identity, so conceived, also seems to strongly argue for the use only of naturally occurring data. The argument may run that the linguistic subtleties of identity work are too fragile to survive the crude pressures of any experimental design. At the heart of the AIO project is the study of identities and so this is an issue that needs to be addressed head on.

3. Textual analysis of instant messaging

Social scientists from a number of fields, including linguistics, are taking an interest in online human behaviour, an interest that has undoubtedly been aided by the comparative ease with which online activities can be stored, accessed and analysed, and subject to scrutiny in ways that perhaps spoken communication cannot (Herring, 2004: 338). As Herring points out, however, despite this potential there has been a distinct lack of systematic discussion about how CMC should be organised and analysed, and many attempts to do so have been overgeneralised, implicit and *ad hoc* (Herring, 2007: 1).

The early view of online language as a homogenous variety has since given way to an understanding of CMD as comprising a number of modes which can be classified according to features of the medium as well as social factors (Herring, 2007; Seargeant and Tagg, 2011). Thus, more recent work in the area has focussed on the complexities of sociolinguistic factors observable in CMD, rather than on making broad generalisations

about the nature of 'netspeak' or 'internet English'. Furthermore, as Androutsopoulos (2006) points out, there existed for some time a trend for anecdotal research in the area of CMC (see, for example, Crystal, 2001), rather than for work with a robust empirical grounding. Even those early CMC works that ostensibly sought to address the relationship between online language and aspects of identity sadly did not take advantage of the vast data available (though arguably fewer data were available then than are today), nor address their questions in a rigorous and systematic manner (see, for example, Danet, 1998). Addressing these perceived shortcomings, Herring (2007) proposes a 'faceted' system for the classification of CMC, which is a core component of her (2004) methodological toolkit for CMDA which will be introduced later. Grounded firmly in linguistics, Herring's framework is intended to supplement more 'traditional' social scientific methods such as experiments, ethnographic observation, and so forth. It is this framework, hereafter referred to as CMDA, that provides the point of departure for the methodological approach developed within the current study.

That said, there are a number of issues to be addressed in the attempt to apply Herring's framework in a manner that is consistent with our understanding of identity as outlined in Section 2 above. Describing research on group identity as being concerned with associating particular discourse styles with particular social categories such as age, gender, ethnicity and race, Herring evidently takes a rather more fixed position – that identity comprises membership of pre-defined categories as opposed to being fluid and emergent. Efforts to bring these facets of identity together or to explore the notion of idiolect in CMD that were not limited by their 'mechanistic view of identity management' (Lamerichs and Te Molder, 2003:456) have been rather slow to get off the ground (Androutsopoulos, 2006).

The current project contributes to the body of existing work on identity play in online contexts (e.g. Bechar-Israeli, 1995; Deumert, 2014), which acknowledge the active and negotiated nature of identities. We understand identities to be displayed through a combination of deliberate and unconscious cues, and, in the context of Instant Messaging, to be mediated primarily through language use (Seargeant and Tagg, 2014). Although the use of low-level features such as typography and orthography as resources for identity construction is fairly well explored (see Vaisman, 2011 and Tagg, 2012), the exploitation of pragmatic and interactional resources is comparatively under researched (although see Vasquez, 2014).

The theoretical position of identity as constructed through interaction (Page, 2014) goes largely unrecognised by computational linguists with an interest in identifying the demographic characteristics of online writers (e.g. Argamon *et al.*, 2007; Juola, 2006).

Taking gender as an example, even if we look at Bamman, Eisenstein and Schnoebelen (2014) which provides what is probably the most sophisticated attempt available to explore identify performance using computational clustering and classification techniques, there are underlying methodological difficulties which are difficult to account for. Bamman, Eisenstein and Schnoebelen usefully problematize much of the existing work on establishing computational linguistic markers of gender and note that gender is 'enacted through a diversity of styles and stances' (p. 136). However, they also have to revert to a naïve model of gender identity using names to identify gender categories they then measuring the extent of 'miscategorisation'. The necessary underlying assumptions are revealed through assertions such as "people whose gender is classified incorrectly have social networks that are much less homophilous" (p. 137). A fully interactionist view might struggle not only with the idea of incorrect classification but also with the view that a single gender category be performed by an individual across instances of their language production.

Herring (2000) makes some headway with the issue when she points out that although individuals may not be consciously aware or able to change their online linguistic style, and particular linguistic markers *tend* to correlate with particular genders, nevertheless 'exceptions to the tendencies can readily be found' (p. 2). In spite of this, she nevertheless expounds the view that binary gender is unintentionally 'given off' to other users through participants' interactional style and conscious performance of gender is relatively infrequent. Danet (1998) highlights the performative nature of gender by arguing that the anonymity offered by synchronous online communication encourages experimentation with identities. At any rate, as Donath (1999) sets out, identity deception need not involve categories at all, and the process of impersonation – assuming the identity of another individual, rather than falsely claiming membership of a group – is our focus here. There is a strong rationale for challenging the rigid approaches to identity discussed above, and for viewing the process of identity construction as a performance – though not always a conscious one - in online contexts.

Our approach to analysis is heavily influenced by arguably the most prominent researcher in the field of CMDA. Herring (2004) proposes four domains of language use around which CMDA research can be organised, with the addition of participation patterns as an extra-linguistic domain. The linguistic domains and corresponding analytical approaches are outlined in **Error! Reference source not found.** below.

[INSERT TABLE 1 HERE]

Herring has latterly identified the level of multi-modality (Herring, 2013), but we shall satisfy ourselves for now with a focus on the purely linguistic. She is keen to point out that while these paradigms can be drawn on as part of the CMD researcher's analytical toolkit, the majority of CMDA research is inductive rather than deductive. That is to say, it is generally a pattern or feature of online language use that will provide the point of departure for the research, rather than a particular methodological approach.

At the structural level, the list of linguistic features of Instant Messaging (hereafter IM) set out in Al-Sa'di and Hamdan (2005) does not differ vastly from those identified in AUTHOR and AUTHOR'S (2012) taxonomy of features of tweets, and includes, among other things, word truncation (including initialisms, letter and syllable substitution, vowel deletion, g- dropping, pronunciation stylisation and so forth) and orthographic features such as (lack of) capitalisation, omitted punctuation, and non-verbal stylisation. It should be noted, however, that empirical work in the area has established that these features may not be as widespread within IM as popularly thought (Baron, 2004; Tagliamonte and Denis, 2008). Tagliamonte and Denis (2008) add grammatical features to this list, demonstrating that IM is characterised by a high occurrence of first person pronouns, a lower occurrence of intensifiers than speech, and a lower rate of quotative verbs, and conservative ('less speech-like') patterns of future temporal reference and deontic modality.

As Bauer (2000) explains, there is a distinction to be drawn between the fairly straightforward task of categorising and coding structural features of CMD – as evidenced by MacLeod & Grant's (2012) taxonomy of structural elements of tweets – and the more complex process of tagging semantic and pragmatic functions of online language.

The computational coding of the pragmatic force of an utterance can be more challenging. Exell, Grant, MacLeod & Smith (2014) make some progress in their coding of speech acts real life data from online chats between would-be offenders and undercover investigators in resolved cases of grooming (Searle, 1969). Following Grant and Woodhams (2007) they use an adapted classification system for speech acts, comprising commissives, assertives, directives, expressives, and interrogatives. Such a pragmatic focus may be inherently more difficult to analyse consistently, since coding 'involves an interpretive, subjective component' (Herring, 2004:18) but we would argue that it captures an essential element of identity performance.

Social behaviour, Herring's final linguistic domain of analysis for CMDA, is our primary concern here since we are focussed on the social identities displayed through language online. The authentic collected data we have access to comprises chat logs between offenders and the children they abuse, and is ethically and practically difficult to work with.

We thus took the view that our more general questions of identity performance and deliberate identity disguise do not require analysis of this specific data set. We instead chose to explore whether parallel experimentally elicited data would allow us to develop our understandings of identity and identity disguise. In a final element of the project we will be checking our models back against the authentic data to see if it will generalise to our operational domain. Thus, we are using experimentally elicited empirical evidence to examine linguistic identity work in online contexts. This represents one of the most innovative methodological aspects of the research reported on here.

4. The operational context: assessing the needs of the end user

Online communications pose their own unique set of challenges to investigators of paedophilia and other threats to the safety and security of groups and individuals, and the anonymity offered by the internet has the potential to hamper policing. These challenges have put greater emphasis on forensic linguistic analysis for the tackling of online crime (Hughes et al., 2008).

Investigators are at times required to engage in identity deception as part of a police operation. Within the UK context such operations are heavily regulated and largely carried out by specialised teams. Before adopting a false identity and forming a relationship with an individual online, undercover officers must receive authorisation to do so. They must work within strict laws concerned with entrapment (in the UK context this is expressed as prohibition to act as *agents provocateurⁱⁱ*) and in addition they are forbidden to conduct an illegal interview under the UK Police and Criminal Evidence Act (PACE, 1984). Within the regulatory constraints officers will have a number of operational objectives which will nearly always include gathering information which will lead to the identification of offenders and may also involve other objectives. As part of the AIO project considerable attention is given to the ethical, policy and legal frameworks for this work. The complex tasks facing the officer in assuming either a child's or an offender's identity are cognitively demanding and the whole success of an operation can depend upon how convincing they can be in identity assumption.

The linguistic training offered to undercover officers is just one element of a broader training programme known as Pilgrimⁱⁱⁱ and the linguistic element is delivered over two days. The training culminates with an assessed simulation exercise which evaluates trainees' skills, including their linguistic identity assumption capability. One purpose of the AIO research programme is to reinforce the theoretical and empirical grounding of this training

and to improve it where appropriate. The linguistic training focuses on different levels of language description largely following Herring's (2004) domains (see Table 1). Officers are trained to observe and record structural variation (initialisms; word and syllable substitution; speech stylisation; spelling variation), the pragmatic approaches of interactants (using speech act theory and ideas around indirectness), and different patterns at the level of discourse (topic development; turn-taking; openings and closings). Trainees are also introduced to some necessary basics of language in use, such as accommodation theory and issues around variation and intra-speaker consistency. It should be noted that there is currently no training content geared towards syntactic descriptions, but the authors continue to work towards a user-friendly method of doing so. Trainees are thus taught to analyse an internet chat log such that they can use the analysis to better assume the identity of one participant in the online conversation.

5. Problems and solutions

The current research project faces a number of challenges. We do not wish to sacrifice our view that identities are constructed through linguistic performance in all interactions and that identity work is a commonplace occurrence. Identity assumption of a specific *individual* cannot be achieved through performance of linguistic stereotypes of a particular *group*, or any other simplistic categorisation of a social taxonomy. Effective identity assumption requires the development of a sufficiently subtle linguistic analysis of a specific individual's chat. We must move away from an unbalanced focus on structural features of language production and include meaning, interaction and social features.

In sexually abusive chat logs manipulative and deceptive identity performance is displayed by offenders and in undercover operations it is required of police. However, child sexual abuse is an extreme example and in this sense the data may be viewed as atypical. Nevertheless, the high stakes for both participants in the consistency and credibility of their identity performances allows for a focus exactly on what can and cannot be manipulated in identity performance. Thus, we identify a need for comparative data where we know that individuals are engaging in conscious vs. unconscious identity work and where there is and where deception can be ethically sanctioned.

It is hard to think of a dataset that is more ethically sensitive than conversations between paedophiles and their victims. Before any analytic work on the authentic chat logs is possible the data must be fully anonymised and checked by authorised police officers. Even this 'sanitised' data is necessarily subject to an appropriate data agreement ensuring its secure storage and setting out how it can be used. Further ethical issues arise in terms of providing researchers with appropriate psychological support. While these data are important for the project there is also a need to be able to work more openly with less toxic

data. To an extent, data from the Pilgrim training simulation exercise described above fulfil these criteria. However, these can also be disturbing to read, and there are questions that cannot be asked of even this simulation exercise data, since opportunities for manipulating the degree of preparation are limited. Methodologically we made the decision to explore these issues with an experimental design.

As has already been noted some discourse analytic researchers prefer to avoid the 'artificiality' of traditional social scientific methods of data collection, such as experiments, privileging instead 'naturally-occurring' data, (see, for example, Eysenck, 2014; Hepburn and Wiggins, 2007; Johnstone, 2000; Potter, 1997). In contrast, Speer (2002) usefully problematises the distinction, arguing that it should be made on the basis of what the researcher does with the data, rather than on the type of data itself and the method(s) used to collect it. One commonly cited 'problem' with collecting linguistic data is that of the 'observer's paradox'. First proposed in linguistics by Labov (1972), this methodological notion refers to the idea that participants' language is inhibited by the presence of the linguistic fieldworker or their recording equipment – that is, that the very phenomenon under observation is tainted by the observation process itself.

As Speer (2002) stresses, the necessity of recording data and the ethical requirement of 'informed consent' makes it difficult to conceive of any type of non-publicly available data completely untouched by the researcher (with the exceptions of data collected for purposes other than research, as is commonly drawn on in forensic linguistics, and data collected retrospectively). Speer and Hutchby (2003) suggest that the issue of the 'observer's paradox' be turned on its head by focussing on participants' orientation to their knowledge that their language is being recorded, and the means by which this orientation plays a part in the ongoing construction of situated interactions (2003: 317).

Gordon (2012) notes that the term 'observer' is inadequate for describing the role of a recording device, and that in fact there is much to be gained from viewing it as a participant in its own right – one that is oriented to by the human participants, and plays a key part in linguistic identity construction. She maintains this re-examination of 'naturalness', citing a number of studies in which participants' orientation to the recording of their language has proven central to the findings, such as when the recorder has elicited 'performance speech', been treated as a ratified participant (i.e. with the researcher as audience), and allowed for a focus on participants' style shifting in response to particular audience types (2012: 302).

Thus, we would argue that it does not necessarily threaten the usefulness of the data if we adopt a methodology where participants are fully aware that their linguistic performance

is likely to be monitored – and in fact, this may lead to the elicitation of richer texts as participants deliberately stage their performances for the researcher, as well as for each other (Gordon, 2012). Indeed, with specific reference to the intended operational context, undercover officers might assume that their targets are suspicious and therefore attending closely to their own identity performance and to that of their interlocutor, meaning that rather than posing a threat to authenticity, an awareness of being observed in fact makes the experimental data *more* comparable to what might be expected in the field.

6. The experimental design

We designed our experiments to address different sets of research questions related to our main project questions.

- First, we wished to explore whether training in descriptive linguistics was useful in online identity assumption. We thus recruited participants who had and who had not received training in linguistics.
- Second we wished to explore how much preparation was necessary and sufficient for successful identity assumption, so we designed a baseline condition with no preparation and then two further conditions with increased preparation time.
- Finally, we wanted to analyse the points of failure of identity disguise through the use of judges such that we could interrogate the reasons for their suspicions.

Undergraduate students of English Language (n= 12), Postgraduate students of Forensic Linguistics (n= 12) and Pilgrim trainees (n=12) were recruited to participate in the study. The undergraduate group were at the beginning of their programme and so considered to have not received linguistic training. The postgraduate students all have such training; typically a first degree in linguistics or with a significant linguistic component. The Pilgrim trainees, comprising undercover police officers training for online work, had no previous experience of descriptive linguistic analysis. Demographic factors such as age and gender were not controlled. While we acknowledge that such factors have a bearing on linguistic performance, we are also of the view that more abstract, unmeasurable factors such as life experience also have an effect. Since we cannot control the latter, and since our interest here is purely in the importance of descriptive linguistic training for effectiveness of identity disguise and detection, we do not consider other factors here. Within these three cohorts, participants were organised into groups of three. Within each group, participants took part in three fifteen-minute online conversations using Yahoo! Messenger.

In the online conversations participants acted in one of three roles, before switching roles and repeating the process two more times per session. The three roles were as follows:

Judge: Judges were seated alone at a PC and asked to engage in online chat with their allocated *interlocutor* using Instant Messaging. They were provided with a list of topics in the event that conversation ran dry, but were told not to feel limited by this. Judges were told in advance that at some point during the chat their *interlocutor* was going to be replaced by an *impersonator*. Judges were then asked to complete a *Judge's Response Form*, indicating where they believed the switch occurred, how confident they were in this, and the criteria on which they based their decision.

Interlocutor: *Interlocutors* were seated with their allocated *impersonator*, out of sight of their *judge*, and asked to engage with their *judge* over Instant Messaging. They were not asked to play any role but simply to engage in conversation. They were instructed that at some point during the chat they should hand over control of the keyboard to the *impersonator* with whom they had been paired. At this point, they were asked to complete the *Interlocutor Switch Log Sheet* with information about when the switch took place, to enable the researcher to ascertain judges' accuracy.

Impersonator: The *impersonator's* job was to take over from their allocated *interlocutor* at some point during the online chat. Depending on the condition (see below), *impersonators* had either (i) no knowledge of the *interlocutor's* online style; (ii) some knowledge based on watching them type; or (iii) extensive knowledge based on reading through their historical chats. *Impersonators* were instructed to try and provide as convincing an impression of their *interlocutor* as they could in the circumstances, and were told that those who succeeded in fooling their *judges* would be entered into a prize draw. It is true to say that there may have been minor differences in the length of exposure *impersonators* had to their target style in the second condition, but given that pairs were advised not to switch in the first or final five minutes, we believe the effect of this to be negligible.

Communication via Yahoo! Messenger – the particular IM client selected for the current research – is written yet it encourages synchronous interaction, i.e. it tends to be transmitted, received and responded to within a similar time frame as spoken interaction. It has thus been described as 'speech like' (Al-Sa'di and Hamdan, 2005: 410), although others prefer to conceptualise IM as a hybrid genre comprised of features of both written and spoken communication (e.g. Baron, 2004); Tagliamonte and Denis 2008). As Darics (2014) explains, IM combines elements of both modes in that it is 'spontaneous, often unedited, responsive and informal' yet also permanent, searchable and, when used without a webcam, lacks the range of non-verbal cues of face to face interaction (p. 339). IM tends to be used for one-to-one conversations, and instant or near-instant reply is expected (Tagliamonte and Denis, 2008:5). The Yahoo! Chat service is accessible both through Yahoo! Messenger

software which is freely downloadable to the user's PC, and via Yahoo! Mail online. Participants in the current study used the online version. A screenshot of Messenger is shown in

[INSERT FIGURE 1 HERE]

The message currently under construction appears in the narrow box at the bottom, and is visible only to the participant constructing it until they send it by pressing 'Return'. Prior messages appear in the larger box above, and are visible to both participants. Participants can increase or decrease the amount of prior conversation that appears on their screen by resizing the chat window.

Participants attended for a total of three one-hour sessions, with each session taking place under a different condition. The conditions were:

1. 'No Preparation': *Impersonators* sat with their backs to the *interlocutor* and the PC monitor until asked to take over.
2. 'Over-the-shoulder': *Impersonators* observed the *interlocutor* in online conversation with the *judge* in real-time prior to taking over.
3. 'Homework': *Impersonators* were provided with transcripts of the *interlocutors'* historical chat logs (collected during the first two conditions), and had around a week to prepare as they saw fit. *Impersonators* were permitted to have the transcript and any accompanying notes in front of them during this condition, and were asked to submit these to the researcher at the end of the session. They were not trained in any particular method for analysis in this task.

The experiments thus generated the following data:

1. 45 minutes of online chat per triad on each occasion with each participant taking part in three chats per session (approximately 540 minutes of chat in total).
2. Three Judge Response Forms per participant
3. Homework notes from each participant

Thus, we have a rich and varied data set with which to explore the relationship between language and the construction of online identities.

7. Preliminary findings from the experimental data

As discussed above it is not the purpose of this article to provide a detailed analysis of the experimental data we have collected but rather to establish whether the data can be used to answer our research questions.

The first task in arguing for the validity of the experimental data is to compare it to the other data sets. Doing so allows us to observe that, despite the student participants being distant from the criminal context of online grooming, there are few differences in the way that identity is expressed, and impersonation is detected. These initial observations will need to be reinforced (or contradicted) by the detailed analysis now being undertaken, but the initial observations are necessary to demonstrate *prima facie* the experimental approach is sufficient valid to proceed to the fuller analysis that will address the fundamental questions of the project.

The extended project has four data sets comprising i) the genuine grooming chat logs, ii) the operational chat logs involving online undercover police interacting with investigative targets, iii) the simulation chat logs from trainee undercover and iv) the experimental data. Within these data sets we can observe that there are different expressions of identity at all the four levels of analysis that Herring (2004) discusses. There is variation at the pragmatic and interactional levels, as well as at the structural level. This can be observed in differences in choices and placement of speech acts, for example, and in choices not only of topic but manner of topic introduction – for example choice of discourse marker – and topic decline, for example indirectness or avoidance.

Individuals attempting impersonation also manipulate similar areas of language across the data sets. Comparing the training data and the experimental data, we can see that untrained individuals attempting identity disguise tend to do so by focusing rather simplistically on the structural level, mimicking spelling, capitalisation, abbreviations and punctuation patterns. This is exemplified in

[INSERT FIGURE 2 HERE]

below, which shows an undergraduate participant focussing on capitalisation, punctuation, and non-verbal stylisation in preparation for the disguise task in the 'Homework' condition.

[INSERT FIGURE 2 HERE]

There is also the suggestion that attempts at identity assumption across datasets by untrained individuals appear to be deficient in that they tend to ignore those aspects of identity expressed through higher level linguistic choices.

In contrast, for individuals trained in linguistic analytic skills (such as our postgraduate group), the focus tends to be more sophisticated, and preparation for identity disguise includes low level features but also observations on pragmatic force, topic management, and other interactional behaviour. Some examples of both appear in Figure 3 below.

[INSERT FIGURE 3 HERE]

For undercover police officer trainees (without a postgraduate degree in descriptive linguistics) it could further be seen, that prior to linguistic training, individual's pragmatic patterns of use, and the observable patterns in the target identity's turn taking and topic control were largely ignored. After training, this same group were observed to use all the identified areas of linguistic analysis. This too matches the patterns identified in the experimental data.

This primary focus on structural features is also evident in the observations of those individuals attending to the possibility of identity disguise. For our "judges" in the experimental model the first points of suspicion are raised through failure of identity performance at the structural level. If an assumed identity is not consistent with the target identity at this level it is easy to detect. But our preliminary findings also suggest that this is not enough. Judges also notice failures of identity assumption which can be described through higher levels of linguistic analysis, notably at the level of interaction – 69% of the judgements in the Undergraduate group mention timing or message length as having led them to their decision of when a switch occurred (for more on individual differences in rhythm and timing in IM, see de Siqueira and Herring, 2009).

The comments from Judge 12 that appear in Figure 4 below demonstrates that observations of language use at the pragmatic level feature in this trained individual's decision about where a switch has occurred.

[INSERT FIGURE 4 HERE]

For roleplaying trainers in the simulation exercises, interactional observations are also important. Figure 5 below is an extract of a trainer's feedback following on from the Pilgrim simulation exercise. Observations that are most obviously related to the trainees' interactional behaviour – topic initiation, topic avoidance, and so forth - are marked in boxes.

[INSERT FIGURE 5 HERE]

Preliminary observations such as those discussed give us sufficient confidence that we will be able to use our experimental data to answer our research questions. There are patterns of similarity evident across the datasets in the dimensions by which individuals vary in their identity performance at the different levels of analysis. These patterns of similarity give us grounds to explore further in the experimental data the degree by which these dimensions of variation can be effectively manipulated to achieve identity disguise and also the degree of importance they hold for identity detection. We can and will make our analyses of this experimental data available to the critique of peer review and publication. Once our analysis of the experimental data is complete it will be necessary again to check and compare these fuller analyses against the authentic data to establish the validity of the application of our models in the operational domain. Although we must continue to be aware of the strengths and limitations of the data set we have a confidence in moving forward with the project that the elicited data has an important role in answering our research questions.

8. Conclusions and Implications

This article presents just one project in which there are multiple justifications for the use of experimental methods and describes the thinking that supports this as a research decision. The situated approach to identity as outlined above might be seen to preclude the use of elicited or 'contrived' data in tackling our research questions, but the use of such data will allow for analyses to assist with the complex challenges thrown up by the project. Our

research design demonstrates that superficial incongruity between one particular theoretical approach and the experimental method need not present an obstacle to conducting meaningful research.

In arguing for the role of experimental work in linguistic research there is a danger in promoting a fight between straw men. Just as there can be no serious argument for the proposition that experiments are never useful for linguists so to it would be absurd to suggest that all linguistic research questions would be better answered with some experimental data. However there does seem to be a view that the more theoretically interesting questions about individual and sociolinguistic variation require naturally occurring data and are less amenable to experimental methods. It has been our purpose to provide a counter-example to that view.

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Tables and Figures

Table 1: Four domains of CMD (Herring, 2004: 18)

	Phenomena	Issues	Methods
Structure	typography, orthography, morphology, syntax, discourse schemata	Genre characteristics, orality, efficiency, expressivity, complexity	Structural/Descriptive Linguistics, Text Analysis
Meaning	Meaning of words, utterances (speech acts), macrosegments	What the speaker intends, what is accomplished through language	Semantics, Pragmatics
Interaction	Turns, sequences, exchanges, threads	Interactivity, timing, coherence, interaction as co-constructed, topic development	Conversation Analysis, Ethnomethodology
Social behaviour	Linguistic expressions of status, conflict, negotiation, face-management, play; discourse styles, etc.	Social dynamics, power, influence, identity	Interactional Sociolinguistics, Critical Discourse Analysis

Figure 1: Yahoo! Messenger



Figure 2: Undergraduate Homework Notes

judge_participant_24: Haha yes I did, I had to give myself a break from the work

judge_participant_24: Did you do anything during reading week?

interlocuter_participant_22_23: Hmm a little bit not a great deal of reading as I had some hospital appointments

judge_participant_24: That's a shame hope you feel better

interlocuter_participant_22_23: It's ok. Regular check ups

judge_participant_24: So have you anything planned for Christmas?

Figure 3: Postgraduate Homework Notes

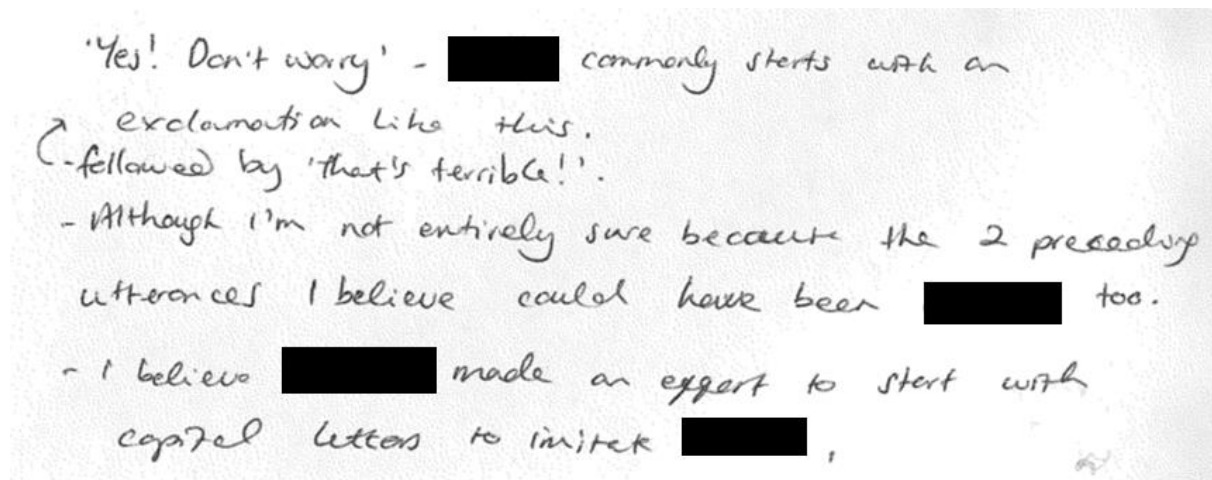
2:33:32 PM
judge_participant_8: same I like loads of different things, but ^{mainly} probably mostly SciFi and Thrillers ^{2 adverts}

2:36:03 PM
judge_participant_8: Oh yes I ^{dummy activity} do remember it was Box Trolls

- beginning a sentence with a capital letter.
- alot use of exclamation marks
- haha , lol (sometimes) , oh
- asks a lot of questions especially wh questions
- short clauses
- use of abbreviated versions eg. I'm, I've, I'd
- starts conv. (most times)

5

Figure 4: Judge 12's Criteria



'Yes! Don't worry' - [redacted] commonly starts with an exclamation like this.
- followed by 'that's terrible!'.
- Although I'm not entirely sure because the 2 preceding utterances I believe could have been [redacted] too.
- I believe [redacted] made an effort to start with capital letters to imitate [redacted],

Figure 5: Trainers comments on UC trainee's interactions

From a pure policing operational point of view these are my observations.

Student 1

Got their real age in during the early stages of the conversation.

Deflected the video calls and the text/telephone calls well.

Some sex talk, probably needs to be a bit more risky.

Student 2

Moved the conversation on quickly to where i was traveling from.

Established a place to meet and confirmed the time.

Established exactly what I would be wearing.

Did some good sex talk and spoke about what we could do together.

Liked the idea of the family party as an excuse not to answer the phone or to cam but also the same excuse is a good cover for sneaking out the house.

Got me to confirm that she was 14 years old.

Got a name out of me.

ii The definition of *agent provocateur* is set out in *Under Surveillance*, a JUSTICE Report (1988)

iii The Pilgrim course is described in outline in the HMIC 2014 report *An inspection of undercover policing in England and Wales* para 11.31-11.35