Believing is seeing: awareness and alignment in the acquisition and communication of social meaning

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Abstract

When speakers engage in the complex phenomenon of speech, they use language to convey and understand social information about identities, stances, moods and goals through the use of linguistic forms. While it is true that social evaluation studies have demonstrated that individuals show awareness of the socially-indexed meaning of linguistic forms, many expected associations are not always, if at all, identifiable by listeners. Such asymmetry raises a significant question in sociolinguistic research: if individuals cannot reliably show an awareness of social meaning, how can it be used as a resource to construct identities, stances and personas?

Building on the growing body of work which examines individuals' agency and awareness of socially-indexed meaning, this study's objective was to investigate the role of individuals' beliefs and their alignment to linguistic forms in the awareness of socially-indexed meaning. The specific aim of the current study was to examine the apparent mismatches between expected socially-indexed meanings born of linguistic variables which are socially stratified and individuals' actual sociolinguistic awareness. An experimental series was designed which employed social evaluation judgements combined with corpus analyses and self-report tasks to investigate the role of the individual in the acquisition and communication of social meaning. The research questions targeted the situational context (no-context vs a workplace), the variant's social salience (stereotypes, markers and indicators), the alignment of the individual to a linguistic form (a user of the form vs a non-user), and the method by which the association between the form and social category were acquired (implicitly vs explicitly). Two languages were chosen for their suitability and validity towards the current project's research questions and aims; namely, Japanese and Australian English. Within the languages, sociolinguistically relevant variables and categories were chosen to provide a

rigorous examination of individuals' perceptual awareness of socially-indexed meaning, investigate how associations are learned by individuals, and examine the role of individual alignment to a linguistic variable and its expected social meaning.

Overall, the results of the experimental series suggested that the explicit beliefs and the alignment of the individual to a linguistic form mediates their linguistic experience and thus shapes their awareness of the form's socially indexed meaning. While the situational context of the linguistic form did not impact individuals' judgements considerably in the current study, the social salience of the form was shown to play a role as a factor which mediates individuals' awareness of the form's socially-indexed meaning. In the case of individual alignment, speakers who do not identify as users of a particular variant appear to be more sensitive to the social meaning of the variant than those who identify as users. Finally, on the notion of acquisition, individuals showed awareness of indexical associations that did not reflect the distribution of the variant in the speech community, suggesting that a mechanism may exist by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms.

Ultimately, the findings demonstrate that while social meaning is nuanced and flexible, the attitudes of individuals and speech communities lie at the heart of the shaping and communication of social information. By examining the apparent mismatches that exists between expected socially-indexed meanings born of linguistic variables which are socially stratified and individuals' actual sociolinguistic awareness, we can investigate the ways individuals judge and construct attitudes about linguistic forms and their socially-indexed meanings. And, by extension, we can come to better understand speaker-listener awareness and control of sociolinguistic variation.

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Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

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Chapter 1: Introduction

Language is inherently social. When we engage in conversation, we not only communicate semantic, truth-conditional meaning, but also social information about our identities, stances, moods and goals through the linguistic forms we use. Our exposure to languages and speech communities serves as the building blocks that shape the foundation of our tacit understanding of how language relates to social knowledge. It is from this knowledge that we construct the attitudes by which we evaluate linguistic forms and, by extension, the speakers of these forms. This dissertation explores the role of explicit beliefs and individual alignment in the shaping of how individuals judge and construct attitudes about linguistic forms and their socially-indexed meanings.

Linguistic forms have been shown to correlate with the social categories which characterise a speaker. This correlation between forms and social categories in practice is suggested to reflect the recruitment of the forms for the purpose of communicating of social meaning (Eckert, 2008; Eckert & Labov, 2017; Podesva et al., 2015). For example, in the first quantitative study of a sound change, Labov (1963) showed that speakers recruited linguistic forms to express local-membership to an island-based community and surrounding ideology. As such, the association between linguistic forms and social categories has been an ongoing and fundamental point of interest in sociolinguistic research. The analytical practice referred to as third wave research (Eckert, 2005) has taken a focus on social meaning with reference to the motivations for speakers to use one linguistic form over another (Podesva et al., 2015). Third wave researchers claim that linguistic forms are available for speakers to use as a resource to construct identities, stances and personas. Usage-based models of language learning (Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002) and the process of indexicalisation (Eckert, 2008; Silverstein, 1976, 2003) offer

accounts to describe how correlations between linguistic forms and social categories can be aggregated in memory for the production and perception of social meaning.

First wave (W. Labov, 1966c; Trudgill, 1974; Wolfram, 1969) and second wave (Eckert, 2000; L. Milroy, 1980; Rickford, 1986) sociolinguistic studies have provided evidence of usage-based models and the process of indexicalisation in practice, demonstrating the social stratification of linguistic forms in speech production, while regional dialect labelling experiments (Clopper & Pisoni, 2004; Fuchs, 2015; Kirtley, 2011) and social evaluation studies (Buchstaller, 2006; Campbell-Kibler, 2006a, 2007, 2008; Staum Casasanto, 2010) have provided evidence to suggest that speakers have awareness of social meaning conveyed by the linguistic form. These production- and perception-based studies are both required as two sides of a coin needed to satisfy the necessary criteria that accounts for the ability of individuals to recruit linguistic forms to communicate social meaning. The first criterion being that individuals must show awareness of socially indexed meaning to suggest social meaning is communicable; and the second being that individuals must show agency over the forms to demonstrate the forms can be used for the purpose of conveying social meaning.

While it is true that social evaluation studies have demonstrated that individuals show awareness of the socially indexed meaning of linguistic forms, numerous studies, including those outlined above, have also found apparent mismatches between the correlation of forms and categories in production and those found in the perception-based studies. The mismatch occurs when listeners are unable to identify the socially-indexed meaning of categories which correlate with the linguistic form. The context of the linguistic form has been discussed as one potential explanation for the apparent mismatches (Campbell-Kibler, 2008; Pharao et al., 2014; Smyth et al., 2003). Here, context in the literature refers to the individuals' attitudes towards the speaker (i.e., positive and/or negative evaluations of the speaker's traits). The situational context, contrary to speaker context, referring to changes in the setting and dimension of the

interaction, has also been explored, but to a far lesser extent (Pharao et al., 2014; Sherwood, 2015; Smyth et al., 2003). In addition, as individuals' a priori beliefs are often connected to stereotypes, normative attitudes have also been explored as a potential explanation for the apparent mismatches (Levon, 2014). Listeners who endorse certain stereotypes have been shown to use related linguistic cues as salient markers to infer social information about the speaker, and this has been suggested to be a factor which mediates listeners' awareness of socially-indexed meaning. However, while an individual's alignment to stereotypes has been explored, their alignment to the linguistic form is yet to be examined. A third and final possible explanation for the apparent mismatches lies with the social salience of the variable. Research has suggested that, in order for a listener to show awareness of socially indexed meaning, the linguistic form must have a level of overtness in the speech community (Preston, 2010, 2011, 2015). Without this social salience, it has been claimed that listeners will be potentially unable to recognise the form and its potentially socially-indexed meaning(s).

Ultimately, while researchers have explored the asymmetry between linguistic forms and social categories, the phenomenon continues to largely remain a mystery in sociolinguistic research and thus raises a significant question: if individuals cannot reliably show an awareness of social meaning, how can it be used as a resource to construct identities, stances and personas? This project investigates the question by providing a thorough empirical examination of the roles of individuals' beliefs and their alignment to linguistic forms in the awareness of socially-indexed meaning. Specifically, the following research questions born of this gap in our understanding of social meaning are examined: (1) does knowledge of the situational context activate or mediate associations between linguistic forms and social categories in the awareness of social meaning; (2) does the level of social salience of a linguistic form impact individuals' awareness of the form's associated social meaning; (3) does the individual's alignment to a form impact their evaluations of social meaning; and (4) are current accounts of sociolinguistic

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learning models sufficient in accounting for how associations are learned and produced by individuals? The scope of the present project is to examine these questions within a series of corpus analyses and perception experiments, including semantic differential judgements and forced choice self-report tasks which are compared with the independent variables of the situational context (no-context vs a workplace), the variant's social salience (stereotypes, markers and indicators), the alignment of the individual to a linguistic form (a user of the form vs a non-user), and the method by which the association between the form and social category is acquired (implicitly vs explicitly). The results of the experimental series provide evidence to suggest that the explicit beliefs and the alignment of the individual to a linguistic form mediate their linguistic experience and thus shape their awareness of a form's socially indexed meaning. While the situational context of the linguistic form did not impact individuals' judgements considerably in the current study, the social salience of the form was shown to play a role in individuals' awareness of the form's socially-indexed meaning. The findings therefore encourage further investigation into individuals' explicit beliefs and alignment to linguistic forms, and ultimately contribute to the broad and valuable body of research which examines individuals' awareness and control of sociolinguistic forms.

The dissertation is structured as follows. This chapter presents an in-depth discussion of socially-indexed meaning, focusing specifically on the apparent mismatches present between the social stratification of linguistic forms and social categories which pertain to the speaker found in both speech production and individuals' awareness of the association as socially-indexed meaning. The theoretical accounts for how associations between forms and social categories are learned and recruited, the previously offered explanations for these mismatches, and the current models of learning are also discussed in this chapter. Chapter 1 concludes with an overview of the research questions and aims, and the experimental design of the present project. Chapters 2 to 4 contain the experimental series of the present project as chapters

presented as standalone research papers. Thus, in addition to the general overview of the previous research on socially-indexed meaning and the introduction of the present research project presented in Chapter 1, each experimental chapter contains a focused literature review, a detailed description of the experimental methodology, and specific research aims and predictions. In Chapter 2, the possible influence of the situational context on indexical associations, in context and no-context conditions, between Japanese linguistic variables that have shown social stratification with the sex of the speaker and the social category of gender is investigated in two online semantic differential perception tasks. In Chapter 3, the role of Australian English individuals' alignment to a linguistic form in the awareness of socially-indexed gender and age on the highly stigmatised discourse marker *yeah-no* is investigated using a combination of online semantic differential perception tasks and self-reporting tasks. Then, in Chapter 4, the investigation of a possible indexical association is again examined, with specific enquiry into comparing the method by which the association is learned, either implicitly or explicitly, through comparing the results of a corpus analysis with an online semantic differential perception task. The experimental chapters are ordered so that each may serve as a steppingstone to examine the overarching aim of the current research project, which is to investigate the role of explicit beliefs and individual alignment in shaping our awareness of social meaning from linguistic forms. Chapter 5 provides a general discussion for the dissertation by summarising the main findings across the research project, outlining its theoretical and practical implications, and providing suggestions for further investigation. Appendix A contains the participant contact messages, information sheets, and consent forms for both English and Japanese participants. Full stimulus sets created for the experiments reported in the dissertation are presented in Appendices B-G. Appendix H presents a preliminary report which compares Japanese individuals' responses across two procedural designs: scalar and binary forced choice.

Finally, copies of the oral presentation abstracts arising from this research project are provided in Appendices I-K.

1.1. Variation, social stratification, and social meaning

This section outlines the key concepts used in this dissertation, the social stratification of linguistic variation and socially-indexed meaning, as well as the theoretical accounts for how social meaning is created and learned by individuals. The requirements for the communication of social meaning are then discussed to demonstrate the need for accounting for awareness and volition in the examination of socially-index meaning.

Sociolinguistic research is concerned with understanding the relationship between language and society. The variation of language across different contexts, both those pertaining to the individual and their situational context, has and continues to be investigated with the goal of understanding the social functions of language and the ways it is used to communicate social meaning. Prior research into the broad distribution of language forms across urban populations, referred to as first wave research (Eckert, 2005), reliably demonstrates that language forms are socially stratified across large urban populations, including North America (W. Labov, 1966c), Great Britain (Macaulay, 1977; Trudgill, 1974; Wolfram, 1969), Panama (Cedergren, 1974) and Iran (Modaressi, 1978). In the domain of sociolinguistic research, language forms which pattern with social categories, practices, and beliefs, such as those listed above, are referred to as sociolinguistic variables (Campbell-Kibler, 2011; W. Labov, 1966b; Wolfram, 1991). Labov's (1966c) study of the realisation of the English variable (ING)[1], as in *walkin* [n] vs. *walking* [ŋ], is a seminal example of a first wave study of a sociolinguistic variable. The vernacular form of the variable, the alveolar nasal [n], showed social stratification

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[1] Parentheses are used to denote sociolinguistic variables, slashes are used to refer to phonemes, and square brackets are used to mark phonetic pronunciations (Bell, 2013, p. 165). When discussing previous studies, however, the original notation is retained.

according to the speaker's socioeconomic status and the style of speech. Specifically, the alveolar nasal was more frequent in the speech of lower-class speakers and appeared more frequently in casual speech.

The distribution of sociolinguistic variables has also been observed across smaller communities of practice. Referred to as second wave research (Eckert, 2005), ethnographic studies contrast to first wave research by observing smaller speech communities across longer periods of time. Drager's (2006) ethnographic study serves a classic example of a second wave study. The phonetic differences for the word *like,* among its different grammatical categories, were examined across girls at a high school in New Zealand. The results showed a significant interaction between *like* realisations and where the speaker ate their lunch. Girls who ate lunch in the common room were significantly more likely to have monophthongisation in the word *like*, especially for quotative *like* cases, than girls who did not eat their lunch in the common room. The key difference between first and second wave research, in addition to the length of time spent gathering the data, lies with the social category in question. While first wave research focused on large, broad categories, such as geography, ethnicity and socioeconomic status, second wave studies take a more fine grained approach, examining social categories which are locally salient to a specific community, such as adolescents who frequent local parks in Reading, England (Cheshire, 1982), a Michigan high school in Detroit (Eckert, 1989a), and companies in Beijing (Zhang, 2005). Together, first and second wave research studies demonstrate how speech communities of varying sizes show systematic stratification of linguistic variables (i.e., distinctions in linguistic forms) and social categories relative to the speaker (i.e., distinctions pertaining to speaker demographics, e.g., socioeconomic class, gender, ethnicity, age; and their membership to locally defined groups, occupation, way of life, and social identities).

Correlations between linguistic variables and social categories have also been observed within the speech of individuals (Bell, 1984; Coupland, 1984; Hay et al., 1999; Rickford & McNair-Knox, 1994). While the distribution across speakers in both the large scale first wave

studies and the smaller scale ethnographic studies were tied to distinctions pertaining to speaker demographics and group membership, the social stratification within speakers is often contingent upon changes in the situational or communicative context, including, the topic, setting and interlocutor. Bell's (1984, 1991, 2001) research offers a key example of individual variation, demonstrating how speakers' language choices, especially style choices, are socially stratified to their interlocutor. He observed style-shifts in the use of intervocalic (t) voicing by newsreaders on two New Zealand radio stations; YA and ZB. The YA station listeners were characterised as older listeners with high levels of education and occupation levels, whereas the ZB station listeners were ranked as middle for occupation and age. While the same newsreaders were heard on both radio networks, their patterns of intervocalic /t/ voicing changed between the two stations. Intervocalic (t) voicing was consistently higher on the local community station, ZB, compared to that of the national radio station, YA. Thus, intervocalic /t/ voicing correlated with the situational context category of interlocutor.

The value of sociolinguistic studies which examine patterns across speakers, both large scale first wave studies and smaller scale second wave ethnographic studies, and those which examine patterns that occur within individual speakers, is largely contingent upon the way the findings of the studies interact. Here, the primary focus of understanding sociolinguistic variation converges upon not only the empirical evidence pertaining to social stratification, but the motivation behind individuals' choices to use one linguistic variable over another. The analytical practice referred to as third wave research (Eckert, 2005), has explored this focus of value by investigating social meaning as a force which motivates speakers to use certain linguistic variants over others (Agha, 2003; Campbell-Kibler, 2007, 2008, 2009, 2011; Johnstone & Kiesling, 2008; Levon, 2011; Mendoza-Denton, 2011; Emma Moore, 2004; Emma Moore & Podesva, 2009; Podesva, 2007, 2011a, 2011b; Podesva et al., 2015; Zhang, 2005, 2007, 2008). Podesva et al. (2015) summarised the transition between first and second wave research practices succinctly: "third wave studies shift their focus from linguistic change to the social meanings that motivate

speakers to use one linguistic variant over another." Where first and second wave studies provide empirical evidence to demonstrate systematic social stratification, third wave research offers an account for the phenomenon by suggesting that the distribution of sociolinguistic variables offers a glimpse of individuals' recruitment of the variable for the purpose of communicating social meaning (Eckert, 2008; Eckert & Labov, 2017; Podesva et al., 2015).

Under a third wave lens, sociolinguistic variables are conceptualised as *sociolinguistic signs,* whereby the variable takes on correlating social meanings through the context of its use. The theory of how sociolinguistic signs are formed is an extension of de Saussure's (1916) dyadic model which posits that a linguistic sign is a mapping between a signifier (a linguistic form) and a signified (its associated meaning). As with all instances of meaning, signs are dependent upon contextual factors, including the speaker and their situational context, and are therefore by nature fluid and flexible in their interpretations (Eckert, 2008; Silverstein, 2003). However, we can form expectations of a linguistic variable's socially indexed meaning from the social stratification of the form within a speech community. For example, the released variant of word-final /t/ occurs in high rates among Orthodox Jewish men (Benor, 2001, 2004). Benor concluded that stop releases not only indexed learnedness, but that in the examined cultural context, learnedness indirectly indexed masculinity. Therefore, in order to sound like a learned man, the third wave expectation is that Orthodox Jewish boys would release their word final /t/s. The three waves of analytical practice in the domain of sociolinguistics therefore provide evidence to not only demonstrate that social stratification exists between linguistic variables and social categories, but together they offer insight into the motivation behind speakers' choice to use certain linguistic variants over another. That is, the distribution exists due to individuals' recruitment of the variables for the purpose of conveying social information.

The ubiquitous nature of the association between linguistic variables and social categories, both across and within speakers, suggests that individuals learn patterns of

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sociolinguistic variation from exposure to the linguistic forms in their environment. The process of indexicalisation offers an account for the acquisition of sociolinguistic knowledge. Indexicalisation is an extension upon the dyadic model proposed by de Saussure (1916) and has been directly explored in relation to sociolinguistic variation. In this process, indexicalisation occurs when meaning is indexed through the correlation between a signifier and a signified in space and time (Eckert, 2008; Silverstein, 1976, 2003). A sociolinguistic sign is thus a mapping between a linguistic form and its associated meaning. Linguistic variables are capable of indexing multiple meanings, leading to what Eckert (2008) has described as "a field of potential meanings — an *indexical field*, or constellation of ideologically related meanings, any one of which can be activated in the situated use of the variable." The activation of any given meaning is contingent upon contextual factors which influence the interpretation of the sign's meaning in practice (Eckert, 2008; Silverstein, 2003). This fluid and flexible nature of sociolinguistic signs is a key feature which makes them a robust social resource (Eckert, 2016). Using the (ING) example above, exposure to patterns of the perceived vernacular variant [n] would create a mental representation of [n] and its associated social categories. In Labov's (1966c) study, the associated meanings included lower-class and casual speech style. A speaker who has been exposed to this pattern could then theoretically index the meanings onto the variable and use the formed sign as a stylistic device to create a particular social persona in their own speech. While robust in its theory, the process of indexicalisation is a largely untested model of language learning, that relies heavily on its concept over tangible results. Indexicalisation is, however, in line with usage-based approaches of language learning which can provide a demonstratable explanation for how social meaning is learned and created.

Usage-based approaches offer an account for how the association between linguistic variables and social categories are established from a cognitive psychology perspective. Originating in psychology (Brooks, 1978; Hintzman & Ludlam, 1980; Schacter et al., 1978),

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exemplar models are one such usage-based approach which assumes that individual speech utterances are aggregated in the mind as episodic memories, also known as exemplar representations (Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002). For example, if a listener encounters a speaker say *walkin* [wɔːkin], the memory of the utterance would be stored as its own exemplar representation that is distinct from representations that encode other occasions when the listener heard the word *walkin*, even when those utterances were produced by the same speaker. Over time, as the listener is exposed to more representations of the alveolar nasal [n] by the same and other speakers, the form and its associated linguistic and non-linguistic information would create exemplar clouds. These clusters of exemplars have been shown to exist at word level (Johnson, 2005; Wedel, 2006), and, simultaneously, at segmental and lexical levels (Pierrehumbert, 2001). Thus, using the above example, exemplars of the alveolar nasal [n] would be stored in exemplar clouds which contain information about the speaker and the situational context. The aggregation between linguistic forms and correlated social meanings therefore creates a mapping of relevant social categories pertaining to the speaker to each exemplar. The theory has been explored within a sociolinguistic framework (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999). Individual exemplars may be indexed to any number of social categories related to the background of the speaker or even the situational context, such as formality or politeness, and once an exemplar representation is stored in an individual's memory, it can be activated during both the production and perception of speech (Hay, Nolan, et al., 2006; Johnson, 1997; Lozito & Mulligan, 2010; Pierrehumbert, 2001). Therefore, usage-based approaches of language learning not only offer an empirical explanation for how individuals learn the association between linguistic forms and social categories but also how these learned associations are produced by individuals in their own speech.

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Crucially, an individual's ability to learn and produce linguistic variables for the purpose of conveying social meaning is contingent upon their perception and awareness of the form and its associated meanings. Before addressing this key component of sociolinguistic learning, it is important to define the terms for the purpose of this dissertation. In previous literature, *awareness* has been used to refer to an individual's attention towards a social category (e.g., gender) or a linguistic variant (e.g., [ING]) (Drager & Kirtley, 2016). In this dissertation, awareness is used specifically to refer to the consciousness of the individual. Awareness is formed from individuals' ability to notice and differentiate between forms, categories and relationships. The term *perception*, on the other hand, is used to refer to the cognitive processes that are automatic and do not require any combination of effort or attention on the individual's part. The necessity of this distinction is born of the need to distinguish between individuals' unconscious learning of sociolinguistic signs (i.e., implicit perception) and individuals' knowledge (i.e., overt awareness) of the sociolinguistic form in their own repertoires for the purpose of identifying and conveying social meaning.

In the process of learning, both within an indexicalisation- and usage-based account of learning, associations between linguistic forms and social categories can be acquired automatically. Listeners perceive linguistic and non-linguistic information which is aggregated and stored in the speaker's mind. The use of these exemplars can be automatic, whereby the speaker simply chooses a form at random or uses a previously established speech pattern. Automatic, or habitual, use fits with the distributions found in first and second wave research. That is, the speakers' demographic backgrounds are captured through the social stratification of variables across large- and small-scale speech communities. If speakers' patterns of linguistic forms are solely automatic, we would expect largely consistent patterns across speech communities with little variation. However, social stratification, as discussed above, is rarely fixed and elegant. Individual variation is one such example of speech which s consciously

modified by the speaker. While it is possible that adjustments of speech styles can be performed somewhat automatically, the ability of the individual to manipulate their own speech to suit changing topics, settings and interlocutors suggests that degrees of volitional control exist in the conveyance of social meaning. With this speaker agency, a level of awareness is expected. That is, in order for an individual to convey social meaning through the recruitment of associated variables, the interlocutor must share the socially-indexed knowledge of the speaker. If individuals are unaware of the socially-indexed meaning, they could still produce the form as a result of imitative social conditioning, but the intended social information would be unstable. For example, quotative *like* in English has been shown to correlate with the social categories of gender, age and socioeconomic status (Dailey-O'Cain, 2000). If these categories have been indexed onto the variable in addition to its quotative meaning, it would imply that listeners are aware of this additional meaning and would therefore be able to recruit *like* for the purpose of conveying social meaning.

To conclude the current section's discussion of the social stratification of linguistic variation and the theoretical accounts for how social meaning is created and learned by individuals, it can be seen that two important factors are necessary to account for the acquisition and conveyance of social meaning. Firstly, individuals must have awareness of the socially-indexed meaning(s) of a linguistic variable. The meaning must be shared across individuals of a given speech community, large or small, and the listeners must be able to evaluate the intended meaning from the sociolinguistic variable or the social meaning would be lost. Secondly, individuals must be capable of demonstrating agency over the use of sociolinguistic variables. Agency would suggest that individuals can in fact recruit sociolinguistic variables for the purpose of conveying meaning, and that their production is not unconscious and limited to the demographic background of the speaker. The following section (Section 1.2) examines the first factor, sociolinguistic awareness, by reviewing previous studies which have examined

listeners' attitudes and awareness of socially-indexed meaning. Section 1.3 investigates the second factor, individuals' linguistic agency, by reviewing findings pertaining to volition and acquisition methods.

1.2. Sociolinguistic awareness

The current section presents a review of the studies which have examined listener awareness in sociolinguistic research. The evidence supporting individuals' awareness of socially-indexed meaning is discussed, with particular interest drawn to the apparent mismatches that occur when individuals' do not show awareness of patterns observable in corpora. The suggested explanations in the literature for the mismatches are presented, as well as potential factors which are explored within the scope of this dissertation.

Encountering speakers whose linguistic inventory differs to that of our own is a fairly common experience. When we travel between countries, these distinctions can be as broad and complex as whole language systems; but within countries, the distinctions may be smaller but no less profound, such as syntactic variations, morphological variations and lexical variations; and, as discussed above, studies have demonstrated that variations exist within distinctions smaller than individual phonemes (i.e., aspiration and flapping) and in locations as subtle as where speakers eat their lunch. While sociolinguistic research has largely focused on examining patterns of speech production, studies examining individuals' awareness of socially indexed meaning are on the rise. This growing body of work provides crucial insight into the association between linguistic variables and social categories. Specifically, it investigates how speakers learn and communicate social meaning that exists in addition to a form's semantic or truth conditional meaning.

Regional dialect labelling is one such method of research that has examined individuals' awareness of socially relevant linguistic variation. Targeting distinctions that exist across

boarders and dialects, researchers have demonstrated that individuals show awareness of associations between speech and stratified geographic categories (Baker et al., 2009; Clopper & Pisoni, 2004; Cramer, 2010; Fuchs, 2015; Kirtley, 2011; Purnell et al., 1999; Suárez-Budenbender, 2009). Clopper and Pisoni (2004) examined Indiana college students' ability to accurately categorise six North American regional dialects. Listeners were presented with sentences that contained previously identified phonetic features that were used to distinguish different dialects. The results showed that while the listeners' general identification accuracy was low, their responses were statistically above chance and they were able to categorise the talkers into three broad dialect clusters (New England, South, and North/West). Interestingly, the linguistic experience of the listener played a vital role in their categorisation accuracy. Those who had lived in at least three different states were more accurate than those who had only lived in Indiana. Speakers who had lived in a given region also categorised speakers from that region more accurately than speakers who had not lived there. This additional finding suggests that listener experience is a crucial factor in correctly identifying a speaker's region based on linguistic variables, and consequently, the finding is in congruence with the expectations of exemplar-based models.

Social evaluation studies have also illustrated that altering linguistic cues in a speaker's voice can affect judgements pertaining to the voice in question. The classic methodology for such language attitude queries is the matched-guise design (Lambert et al., 1960). Listeners are typically exposed to a single speaker's voice in different "guises" where the speaker varies different linguistic cues. Upon presentation, the listener rates the guises along semantic differential scales of attributes. Results employing this technique have shown that altering a single phoneme is enough to dramatically change listener evaluations of the speaker (Campbell-Kibler, 2007). The attributes by which the listeners make their evaluations are also robust, ranging across multiple dimensions including race and ethnicity (Purnell et al., 1999;

Tucker & Lambert, 1969), sexual orientation (Levon, 2007; Munson & Babel, 2007) and both static and dynamic attributes (Giles, 1970; Podesva et al., 2015). Campbell-Kibler's research (2007, 2008, 2011) utilised a modified matched-guise design to examine the effects of the sociolinguistic variable (ING) (e.g., *walkin'* vs. *walking*) on listeners' attitudes about speakers. The results showed that listeners' evaluations of the speaker varied according to the realisation of the final nasals in (ING). Guises which employed the use of the alveolar nasal [n] were judged as more casual and less educated/intelligent, while guises who used the velar nasal [ŋ] were judged as sounding more formal and more educated/intelligent. Crucially, however, the results differed from previous studies which examined the social stratification of (ING). Studies had found that in addition to the associated social categories identified in Campbell-Kibler's research, the social categories of gender, socioeconomic status, dialect, age and race were also shown to correlate with (ING) (Fischer, 1958; Labov, 1966; Shopen, 1978; Shuy, Wolfram, & Riley, 1968; Trudgill, 1974). These showed no effect in Campbell-Kibler's perceptual study. Listeners were aware of some factors that condition (ING) usage but not others. The asymmetry between the systematic stratification of linguistic variables and listener awareness of socially indexed information has also been identified for other linguistic variables including *t/d* deletion in English (Baugh, 1979; Campbell-Kibler, 2006a; G. R. Guy & Boyd, 1990; W. Labov, 1972c; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969); quotative and focuser *like* (Buchstaller, 2006; Dailey-O'Cain, 2000), fundamental frequency (Kirtley, 2011; Linville, 1998; Smyth et al., 2003), and /ay/ monopthongisation (Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008). Across studies, listeners show that they are often unaware of the social categories which characterise speakers through the linguistic variants they use.

The apparent mismatch between the social stratification of speakers' production of linguistic variables and listeners' awareness of the socially-indexed meaning presents a significant gap in our understanding of how social meaning is acquired and used by individuals.

Specifically, in order for a sociolinguistic variable to be deployed as a resource for the purpose of identity, personae or stance construction, the socially-indexed meaning of the variable must be shared knowledge across listeners in the given speech community. If listeners are not aware of the indexed meaning, speakers could still produce the form as a result of imitative social conditioning, but the intended social information would be unstable and thus unreliable for the purpose of communicating social information. Both the process of indexicalisation and usage-based approaches of language learning predict that the associations between linguistic forms and correlating social categories would be acquired implicitly through exposure to the associated pair in space and time. We would thus expect that individuals have indeed acquired said associations between variables and categories, however, in the case of the apparent mismatches, including those listed above, other factors must be involved which are mediating individuals' awareness of the socially-indexed meaning of linguistic variables.

The context of the linguistic form has been discussed as one potential explanation for the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variables (Campbell-Kibler, 2008; Pharao et al., 2014; Smyth et al., 2003). Context in the literature here refers to the individuals' attitudes towards the speaker (i.e., positive and/or negative evaluations of the speaker's traits). Exemplar-based models with social indexing predict that listener perceptions of linguistic variables will be biased as a result of contextual factors (Drager & Kirtley, 2016). In the example above, Campbell-Kibler (2008) found in her study of (ING) that the socially indexed meaning of informality of the (ING) variable was interpreted differently across listeners depending on whether the listeners' evaluations of the speakers were positive or negative. Elizabeth, a speaker from California, was judged by listeners as a 'dynamic' and 'energetic' person, irrespective of her realisation of (ING). Listeners who were inclined to dislike Elizabeth interpreted her production of alveolar nasal [n] as condescending, while those who were

inclined to like Elizabeth interpreted [n] as compassionate. The social meaning of the alveolar variable of (ING) was therefore found to be contextually dependent upon the existing beliefs and attitudes pertaining to Elizabeth.

Listener perceptions of speech have also been shown to vary according to the social information provided about a speaker (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). In Hay and Drager (2010), New Zealand English speakers were exposed to either stuffed toys associated with Australia (kangaroos and koalas) or toys associated with New Zealand (stuffed kiwis) during a vowel perception task. Participants shifted their perception of vowels according to which set of toys they were exposed to, i.e., participants responded with more Australian-like vowels when they were in the Australian "kangaroo" condition. Thus, the a priori beliefs of the listener, that is, the stereotypes the listener had formed pertaining to their attitudes towards other individuals, played a significant role in listener evaluations of socially indexed meaning.

Questions do however remain regarding the notion of context. While studies have explored context with regards to individuals' attitudes towards speakers, the situational context remains underexplored with regard to individuals' awareness. Situational context, contrary to speaker context, refers to changes in the setting and dimension of the interaction (i.e., the location of the utterance, the social distance between the interlocutors and the formality of the setting). If listeners' attitudes towards speakers mediate evaluations of social meaning, it stands to reason that changes pertaining to the situational context would also influence judgements. Although work in this area is limited, Sherwood (2015) found that Japanese individuals' judgements of sentences containing the potential verb suffix allomorphs varied according to the social status of the interlocutor. Sentences which included the perceived vernacular variant, known as *ra*-deletion, were judged as more likely to be said by a speaker who was a friend of the interlocutor rather than a superior to the interlocutor. The results suggested that individuals

were aware of the socially-indexed meaning of potential verb suffix allomorphs, and that the situational context of the utterance influenced individuals' judgements. Given the findings of Sherwood (2015), and the findings pertaining to listeners' attitudes towards speakers, it is plausible that that situational context can offer an explanation for the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variables in production. Exploration of this possibility thus forms one of the research questions in the current project and is investigated in Chapter 2 through an empirical case study of Japanese linguistic variables that have shown social stratification.

As individuals' a priori beliefs are often connected to stereotypes, normative attitudes have also been explored as a potential explanation for the apparent mismatches. Levon (2014) examined the extent to which stereotyped attitudes and beliefs about groups of speakers influenced listeners' evaluative judgements. Using a modified matched-guise paradigm, Levon examined listener reactions to intersecting categories of sexuality, gender and social class. The social categories were analysed in accordance with three linguistic variables which had previously shown social stratification with the categories of interest. Specifically, sibilance, mean pitch, and TH-fronting. While 'competence' and 'likeability' were consistently signalled across the listener population by pitch and TH-fronting respectively, the indexical relationship between pitch/sibilance and perceived gender/sexuality was shown to be mediated by individual listener attitudes. Listeners who endorsed normative stereotypes of masculinity and male gender roles used pitch and sibilance as salient cues which signalled 'nonmasculinity' and 'gayness'. On the other hand, listeners who did not identify with these stereotypes showed no effect for pitch and sibilance.

It is important to note, however, that the attitudinal and cognitive factors explored in Levon (2014) were in reference to listener endorsement of normative stereotypes pertaining to male gender roles. Endorsement was measured with the Male Role Attitudes Survey (MRAS)

(Pleck et al., 1993), a standard psychological instrument which collects the extent of listener agreements with normative statements that correspond to male gender norms. While the method proved to be a robust measure to uncover the attitudes of the listeners, it was not without limitation. As noted by the author, it is possible that the MRAS elicited a response bias which captured listener willingness to label a speaker according to male gender norms rather than capturing attitudes to masculine stereotypes. This effect, coined the social desirability bias, is a form of response bias whereby respondents show a tendency to answer questions in a manner that will be viewed favourably by others. Edwards (1953) demonstrated this effect by examining the relationship between the probability of endorsement of personality trait items and the social desirability of the item. The probability of endorsement of an item was clearly shown to increase with the judged desirability of the item. Similar effects have also been found in the domain of linguistics. Labov (1966c) found that New York speakers showed a tendency to report higher usage of standardised forms than their actual usage. The opposite effect was found by Trudgill (1972), who found a tendency amongst Norwich men to report higher usage of non-standardised forms than their actual usage. The incongruity between speakers' perceived and actual usage is measured in relation to linguistic insecurity (W. Labov, 1966c, 1981). Labov claimed that linguistic insecurity leads to hypercorrection in speakers towards perceived correct forms. This is contrary to Trudgill's result and thus appears that speakers who have a high degree of linguistic insecurity hypercorrect towards what is deemed socially desirable, whether they be perceived correct or incorrect by the speech community.

Considering the findings on stereotypes and the effect of social desirability on individuals' self-reports of their speech, it appears both aspects contribute to the attitudinal and cognitive factors behind individuals' awareness of socially-indexed meaning. Further examination which builds on Levon's earlier work is one such avenue to explore the apparent mismatch, as is the investigation into the relationship between speakers' self-reported use of linguistic variables

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and the social stratification of variables in a speech community. However, despite the encouraging findings pertaining to the linguistic insecurity of individuals and their social desirability bias, self-reports are a highly stigmatised tool in linguistic research. Researchers often cite the risks of using self-reports as they do not reflect natural language in use, as demonstrated by the studies above (W. Labov, 1966c; Trudgill, 1972). Nevertheless, when examining an individual's awareness of socially indexed meaning, self-reports offer a unique insight into how individuals align themselves to normative stereotypes. If an individual shows high degree of linguistic insecurity to a variable, they may be more sensitive to the variable's socially indexed meaning, compared to individuals who have low degree of linguistic insecurity. That is, they may be more likely to show awareness of a variable's socially-indexed meaning due to their sensitivity to the variable in the speech community. Such an effect would build upon research which suggests the association between linguistic variables and social categories can be overridden by both attitudinal and cognitive factors. Furthermore, individual alignment may offer an account for cases where listeners show no awareness of expected socially-indexed meanings, whether they are, or are not, activated by the speech context. This line of enquiry therefore forms one of the research questions for the current study and is explored in Chapter 3 through a case study on the role of Australian English individuals' alignment to a linguistic variable in the awareness of socially-indexed gender and age.

In addition to context and listener stereotypes, two other accounts have been discussed in the literature which offer contributions towards understanding the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variables. Firstly, the "sociolinguistic monitor" is a cognitive mechanism that has been proposed to be responsible for sociolinguistic perception (W. Labov, 1993; W. Labov et al., 2006; W. Labov, 2008; W. Labov et al., 2011). The monitor has been claimed to track, store and process socially salient quantitative linguistic distributions. Labov and colleagues

have argued that the sociolinguistic monitor is able to accommodate sociolinguistic information across large temporal windows, that it is highly sensitive, and that this sensitivity is nonlinear in nature. Meyerhoff and Walker (2013) conducted a study of existentials building upon research into the sociolinguistic monitor to explore the extent to which different speakers and different groups of speakers on Bequia treat the verbal form in existentials as a productive syntactic process (i.e. agreement) or as fixed lexical variants. The authors predicted from the hypotheses of the sociolinguistic monitor and their own previous analyses (Meyerhoff & Walker, 2007), that they would find changes in the frequency with which the urban group speakers used the local variants if the forms were primarily used grammatically, but if the existentials were expressed lexically, they predicted they would find differences in the frequency of a form and the constraints relating to its use. Differences were observed in the frequency of the type of existential preferred in different villages and by the urban speakers. Additionally, the agreement of the main verb in terms of number and postposed plural subject was also found to be significant. The findings were thus in line with the predictions of the sociolinguistic monitor. However, limitations still exist in the strength of the monitor itself. As noted by Meyerhoff and Walker (2013), the monitor makes no specific predictions about individuals or language change over time. Furthermore, the theory behind the cognitive mechanism has fallen under scrutiny for not providing detailed account of the monitor itself and how it differs from other, more general monitoring capabilities that could be called upon by listeners and, additionally, how the variants are identified by the monitor itself (Docherty & Foulkes, 2014).

Secondly, the theory of language regard (Preston, 2010, 2011, 2015) proposes a processual model which accounts for how listeners move from encountering a linguistic variant to producing a reaction to that variant in four steps; namely, *noticing, classifying, imbuing* and *reacting*. Crucially, the first two steps in Preston's model are dynamic in nature and contingent

upon the salience of the variable. It is important to note that the notion of salience is a point of contention in sociolinguistics. For the purpose of this dissertation, salience is defined as the relative ease with which a linguistic form is perceived by a listener (Levon & Fox, 2014). This relates to the phonetic discreteness of the variable (Kerswill, 1985; Preston, 1996), its semantic transparency (Mufwene, 1991; Silverstein, 1981), its prosodic and pragmatic importance (Cheshire, 1996; Yaeger-Dror, 1993), and its distinctiveness in relation to a listener's native variety (Sibata, 2013). In the sociolinguistic literature, the ease with which a form is perceived by a listener has been discussed in terms of social salience. Labov (1972b) proposed a model of social salience which delineates three variable types, demarcated by speakers' awareness of their existence. The first level are *indicators*, which show zero degree of social awareness and are therefore difficult to detect for both linguists and native speakers. *Markers* are usually socially stigmatised forms characterised by sharp social stratification across groups and styles. The highest level of social awareness for variables is the *stereotype* category. Stereotyped forms display both social and stylistic stratification and are subject to explicit meta-commentary due to their overt level of social awareness in the speech community.

The salience of a variable in the speech community is therefore crucial to the success of a listener's awareness of the form. That is, in a language regard sense, if the variable is non-salient, at indicator level, it will likely not be learned through the noticing and classification by the listener. The language regard model therefore struggles to account for variables that begin as indicators, below the level of social awareness and, over time, develop into salient linguistic forms that are sociolinguistically relevant, such as markers or stereotypes. An example of this situation was documented for /aw/-monophthongisation which characterises "Pittsburghese" (Johnstone et al., 2006). The monophthongisation of /aw/ was originally, in 1910, not noticed at all, but over time it was used by speakers and heard primarily as a correlator to socioeconomic class. The variable was then linked to place and finally was "enregistered" as

part of the "Pittsburghese" dialect. Thus, despite the variable's origin as an indicator, it must have been acquired by speaker-listeners in order to be developed into a sociolinguistic marker and then, potentially a stereotype. Given the pervasive spectrum of evidence across a broad range of linguistic domains (Foulkes, 2010), usage-based accounts of language learning, including exemplar-based models, offer a more robust account for individuals' ability to produce socially correlating linguistic variables and perceive the social categories which have been shown to be indexed upon the variable. The concept of salience, however, is of significant importance with regard to individuals' awareness of socially-indexed meaning. As discussed above, variables which have higher salience in a speech community may draw greater attention the form's socially-indexed meaning(s). It is thus important to explore this possibility with regard to the apparent mismatches in the literature. Chapters 2 and 3 thus examine the role of a variable's social salience in individuals' awareness of socially-indexed meaning.

In summary, given that both regional dialect labelling studies and social evaluation studies have shown that individuals' do indeed show some awareness of socially indexed meaning, we can find evidence to support the existence of the first criterion relating to the acquisition and production of sociolinguistic variables for the purpose of conveying social meaning. Individuals are indeed capable of evaluating socially-indexed meaning from exposure to linguistic variables and they use these meanings to make socially relevant judgements about the speaker and speech context. However, the apparent mismatches between the social stratification of linguistic variables across speech communities and individuals' awareness of the variables' expected social meaning(s) does present a significant gap in the research. Specifically, if individuals cannot reliably show an awareness of socially-indexed meaning(s), how can speakers deploy sociolinguistic variables successfully as a resource to construct identities, stances and personas? Researchers have offered accounts for the apparent mismatches, including the role of context pertaining to the speaker, the role of stereotypes and

normative beliefs, and the role of the variable's social salience. Additional factors were also raised in the review of the previous literature as each account has only been touched on to some capacity and further exploration of each presents an excellent opportunity to better understand the attitudinal and cognitive factors behind individuals' awareness of socially-indexed meaning. Section 1.3 of the Introduction will review the second important factor necessary to account for the acquisition and conveyance of social meaning, namely, individuals' linguistic agency, by discussing findings relating to volition and acquisition methods.

1.3. Agency and learning

This section presents a discussion of speaker agency and reviews findings concerning volition and acquisition methods with particular emphasis on the strengths and weaknesses of a purely implicit model of language acquisition. The importance of considering explicit learning as a factor of sociolinguistic acquisition and conveyance is also discussed in light of the literature review presented in Sections 1.1 and 1.2.

Almost all instances of communication are dependent upon social circumstances. The vast majority of language utterances exist between two or more interlocutors, and these interactions are strongly influenced by the situational context: the participants, the setting, the topic, and the function of the speech exchange. Linguistic varieties refer to sets of linguistic forms that are bound by contextual constraints. Research has shown that societal structures of practice and power (Bourdieu, 1992; Eckert & Wenger, 2005; Urban, 1996), along with political and cultural forces (Irvine & Gal, 2000; Silverstein, 1979; Woolard, 1998), are often at the heart of motivating speakers to choose one variety over another. Labov's (1972b) Martha's Vineyard study offers a classic example of speakers using sociolinguistic forms to position themselves within a speech community. Local fishermen showed a higher tendency to use the centralised diphthongs [ɐɪ] and [ɐu] compared to mainland speakers [aɪ] and [au]. Labov

argued that the observed stratification of forms between locals and mainlanders was due to the tension local residents felt over mainland tourists threatening the local fishing economy of the island. The locals resisted associating themselves with the prestige and economic status of the mainlanders through the use of the linguistic forms linked with the local variety. The choice to resist was thus a demonstration of the effect of the situational context on speech and, in addition, an example case of speaker agency in action.

The resistance and conformity to societal norms through the use of styles, clusters of sociolinguistic signs, suggests that speakers possess volitional control over their linguistic repertoires. The ability to choose whether to position one's self away from a speech community, such as the case of local fishermen in Martha's Vineyard (W. Labov, 1972b), or to draw one's self closer to a speech community, as with the earlier example of radio announcers in New Zealand (Bell, 1984), provides evidence that, to at least some extent, speakers can select from their available variables, styles, and varieties in order to construct a desired identity, stance or persona. Speaker agency has been explored primarily as a style-shifting phenomenon, focusing on clusters of sociolinguistic signs (Eckert & Rickford, 2001; Johnstone, 2005; Rickford & McNair-Knox, 1994). While some studies have noted that listeners can be sensitive to artificial instances of style-shifting (Schilling-Estes, 1998), the consensus among linguists is that individuals' active command over sociolinguistic features is proof of speaker agency and control over sociolinguistic variation (Babel, 2016). Taken with individuals' awareness of socially-indexed meaning, this consensus on speaker agency fits with the third wave notion that sociolinguistic variables can be deployed as a resource for conveying social meaning.

From the literature reviewed in Section 1.2 on sociolinguistic awareness and the discussion of speaker agency in the current section, the two important factors necessary to account for the acquisition and conveyance of social meaning have been established. That is, individuals show the agency to manipulate their own speech to suit socially relevant contexts, and listeners have shown awareness of the socially-indexed meaning of linguistic variables. However, the

question still remains as to why we find apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variants. A possible explanation, in addition to context and stereotypes as reviewed in the previous section, is that of explicit learning mediating implicit learning. Indexicalisation- and usage-based accounts of learning are implicit acquisition models where associations between linguistic forms and social categories are acquired automatically. Conversely, explicit learning is a conscious operation where associations and patterns are learnt intentionally. Take for example the processes of stereotype formation. Argued to serve as resource-preserving devices to tackle the overwhelming nature of reality (Macrae et al., 1994), stereotypes can be formed implicitly, through individual inference, or explicitly, as part of society's collective knowledge (Stangor & Schaller, 2000; White & White, 2006). Formation via inference largely aligns with usage-based models of learning, including exemplar models. Socialisation, on the other hand, takes a more overt approach where the stereotypes are formed explicitly, even if subtly, on the members of the community. Given individuals' ability to choose the sociolinguistic variables they wish to deploy, it is worth considering the agency of the individual in the establishment of socially indexed meaning and, by extension, as an account for the apparent mismatches found between individuals' awareness and production.

Before considering the possibility of explicitly learned associations mediating associations learned implicitly, it is important to define and review the relevant key concepts. Implicit learning pertains to the acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations (N. C. Ellis, 1994). The process is an unconscious and automatic abstraction of the linguistic form and its associated concepts from experience of instances. Experimental psychological work on implicit learning has demonstrated that learners automatically acquire knowledge of the underlying patterns of sequential dependencies through

repeated experiences of sequential behaviour (Reber, 1976, 1993; Reber et al., 1980). Constructionist accounts of child language acquisition (Tomasello, 1998, 2003) have also found that language acquisition was essentially sequence learning and that learners' long-term knowledge of lexical sequences in formulaic phrases served as the database for the acquisition of language grammar (N. C. Ellis, 2014). Implicit learning is therefore largely similar to usage-based approaches to language learning, including exemplar-based models, and by extension, the process of indexicalisation. It thus shares the predicament of asymmetry found in the social stratification of linguistic variables and individuals' awareness of socially-indexed meaning. In second language acquisition literature, implicit learning has also been shown to have limitations. Naturalistic second language acquisition is often far less successful than first language acquisition. Years of exposure to linguistic forms can often fail to be learned by individuals, particularly those forms considered to be low in salience (N. C. Ellis & Sagarra, 2010). Low frequency and low salience forms are often difficult for second language learners to perceive, analyse, and acquire, especially in rich discourse environments where there are other more salient forms which make the low frequency forms redundant. Furthermore, implicit learning also suffers from the fact that knowledge of sound patterns have both a lack of sensitivity to some conditional relationships attested in corpora (Becker et al., 2011) and hallucinations, whereby listeners perceive forms that are likely even in the absence of phonetic evidence (Davidson & Shaw, 2012; Dupoux et al., 1999; Wilson, 2016).

Explicit learning, on the other hand, is a conscious operation where the individual is made aware of the form which is lacking in salience. The listener's knowledge is attained explicitly, through overt instruction, or when the learner searches for information pertaining to an inconsistency and then builds and tests hypotheses relating to that previously non-salient form. In cases where a linguistic form lacks perceptual salience and goes unnoticed by learners (Schmidt, 1990, 2001), explicit learning provides the additional attention necessary for the

relation to be learned. In the case of sociolinguistic variables, a form lacking in salience, at indicator level, could be elevated to either marker or stereotype level through explicit learning. That is, if a linguistic form needs to be above the level of indicator in order for it to be noticed and classified for the purpose of imbuing and reacting, it may well be that the variable needs to be overtly addressed in order for individuals to use the variable and its associated social categories for the conveyance of social meaning and potential identity construction.

Work on social idealisation (Sumner et al., 2014) offers support to suggest that attentional differences lead to weighting in the encoding of exemplars. Sumner et al. (2014) examined realisations of released word-final /t/ and found that although the socially idealised form was infrequent, it was as equally accessible as the more frequent, but not idealised form, glottalised /t/. The findings are thus largely in line with the work on social desirability. That is, speakers' tendency to report their socially desired speech patterns as opposed to their actual speech patterns. Together social idealisation and socially desired responses suggests that attentional weighting plays a role in both the acquisition and conveyance of social meaning through linguistic variables. If the salience and desirability of a sociolinguistic variable and its indexed meaning are more relevant than an association that is formed passively through exposure, it could suggest that explicitly learnt associations are capable of overriding implicitly learnt associations between forms and meanings. Such a finding would offer a contribution to understanding the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of variables. This dissertation thus includes this final line of enquiry within the scope of the current project in order to explore the current accounts of sociolinguistic learning and their relationship with the apparent mismatches. Chapter 4 presents a study examining the method by which the association between variant and social category is acquired (implicitly vs explicitly) by examining a variable and social category that have strong perceptual salience in a speech community.

In sum, despite finding the two important factors necessary to account for the acquisition and conveyance of social meaning to be established, the apparent mismatch between individuals' awareness of a linguistic variable's socially-indexed meaning and the stratification of the form in a speech community remains largely unexplained. Thus, the gap in our understanding of social meaning calls for further investigation. The current project was motivated by the prior research presented in the previous sections examining the cognitive and attitudinal mechanisms which underlie the acquisition and conveyance of social meaning. In Section 1.4, the present project is presented in detail with an overview of the research questions and aims, and the experimental design of the present project.

1.4. The present project

While a number of studies have examined the relationship between linguistic variables and social categories, with a key interest in understanding the formation and conveyance of social meaning, the above literature review demarcates a need for further investigation to shed light on what appears to be a mismatch between associations produced in speech and those that are identifiable by individuals. The following research questions are born of this gap in our understanding of social meaning and have been used to guide the direction of the current research project.

(1) Does knowledge of the situational context activate or mediate associations between linguistic variables and social categories in the awareness of social meaning?

(2) Does the level of social salience of a linguistic variable impact individuals' awareness of the form's associated social meaning?

(3) Does the individual's alignment to a variable impact their evaluations of social meaning?

(4) Are current accounts of sociolinguistic learning models sufficient in accounting

for how associations are learned and produced by individuals?

With these questions in mind, the specific aims of the current project are introduced in Section 1.4.1. Then, in Section 1.4.2, a description and justification of the chosen linguistic variables for each case study and relative methodologies are provided.

1.4.1. Research aims

This project offers a timely and necessary contribution to sociolinguistic research pertaining to the understanding of social meaning by providing a thorough empirical examination of the role of individuals' beliefs and alignment to linguistic variables in the perception of socially-indexed meaning. Social evaluation judgements of variables that have been previously shown to be socially stratified are investigated within complementary experimental paradigms which test individuals' awareness of potential socially-indexed meaning. Judgements are evaluated with reference to the situational context of the utterance, the social salience of the variable, the individuals' alignment to the variable, and the acquisition of the association between the variable and associated social category.

The current study focuses on a series of perception experiments, including semantic differential judgements and forced choice self-report tasks, which are compared with the independent variables of the situational context (no-context vs a workplace), the variant's social salience (stereotypes, markers and indicators), the alignment of the individual to the form (a user of the variant vs a non-user), and the method by which the association between the linguistic variable and social category is acquired (implicitly vs explicitly). In order to probe the role of beliefs and individual alignment in the awareness of socially-indexed meaning, two languages formed the basis for the following investigations: Japanese and Australian English. The groups were chosen for their suitability in regard to the research aims and methodological

design. Furthermore, while it is well known that linguistic variables are capable of indexing multiple social categories, which are in essence complex, dynamic and contextually dependent, it is this very nature which led to the constraint of restricting the variables of the present project to a handful of variables within the groups. The aim of this project is to examine the role of individuals' beliefs and alignment, and thus, the study focuses on one and two, respectively, potentially indexed meanings of the selected Japanese and Australian English variables.

Ultimately, this project seeks to contribute to the broad and valuable body of research which examines individuals' awareness and control of sociolinguistic variants. The findings born of this study are expected to further our growing understanding of how social meaning is learned and conveyed by individuals, with specific reference to exploring the complex and circular nature of the attitudinal and cognitive factors that shape individuals' identities and sociolinguistic choices.

1.4.2. Methodology

This section discusses the methods of the current research project. Specifically, it explains the choice of languages for examining each research question, the target linguistic variables of the languages, the chosen social categories, and the experimental procedures.

1.4.2.1. Languages and social categories

The reason for selecting two languages as case studies to investigate the project's research questions is threefold. Firstly, the nature of social meaning, akin to sematic meaning, is that the signified is an object or concept that is relevant and potentially dependent upon the speech community where the meaning exists. A simple example using semantic meaning can be found in the borrowing from one language into another. The word *kangaroo* was borrowed from Guugu Yimithirr, a Pama-Nyungan Australian language, into Australian English and subsequently other dialects of English which previously did not have a word to represent the meaning of the marsupial (Haviland, 1974). A similar argument can be made for social meaning. While a number of social categories are shared across languages, such as age, gender, race and ethnicity, certain categories are relevant only to specific communities. Such is the case of the adolescent groups "jocks" and "burn-outs" in a Michigan high school in Detroit (Eckert, 1989), and the manager types in state-owned "state-employed" and foreign-owned "yuppie" companies in Beijing (Zhang, 2005). It is therefore important to select social categories which exist in a speech community and not those which may be have existed in other speech communities but show no significance to the community in question.

In addition to social categories, which exist in specific speech communities, certain categories may be more relevant or salient in a given speech community. A case in point is the social category of formality. In Australian cultures, the concept of a senior or superior can show significant movement, especially when the context of the speech utterance is manipulated. It is no stretch to imagine a speaker in a workplace environment using formal registers with a superior, however, if the same two people were conversing in a setting of lower prestige, such as a cafe or a pub, the social distance between the two speakers may become more fluid, and consequently, the speech register may become less formal. In Japanese culture, on the other hand, the concept of a superior is relatively consistent across speech contexts. Japanese society

is structured vertically through a ranking process (Nakane, 1970), where an individual's rank within the society is based on a number of social qualifications, including, relative age, year of entry into a company, formal date of appointment, and recognised awards. From this ranking process, three clear categories exist in this vertical structure: *senpai* (seniors), *kouhai* (juniors) and *doryo* (one's colleagues). In addition to the *senpai-kouhai* system, the Japanese language has two distinct grammatically expressed clause final forms marked by the presence or absence of addressee honorifics, namely, the polite form, *-masu*, and the plain form, *-ru* (Mizutani & Mizutani, 1987; Niyekawa, 1991; Shin, 2004). The plain and polite forms are the only options to end a clause with a predicate, and thus, the speaker must choose how they wish to mark their relationship with their interlocutor grammatically. Due to the overt social ranking of individuals hierarchically and the constraints of the grammatical system, it is no surprise that speakers are more sensitive to the social category of formality in Japanese society than Australian society and, as a result, speakers frequently use polite language with superiors and plain language with juniors and colleagues.

The difference by which Australian and Japanese speech communities regard certain social categories thus presents a robust opportunity to examine the current project's research questions. As research question 1 seeks to investigate whether knowledge of the situational context activates or mediates associations between linguistic variables and social categories, the above review of the rigidity of register choices in Japanese workplaces lends itself as an ideal language to serve as a case study to explore this question. Specifically, since linguistic choices are more fixed within a workplace context, we are able to compare sociolinguistic judgements across the rigid context of the workplace and the fluid nature of leaving the speech context open-ended; a design which is inherently possible in Japanese society, but less so, if at all, in English speech communities. Furthermore, as Pike (1967) and others (Helfrich, 1999; Orey & Rosa, 2015; Rosa & Orey, 2012) have discussed, it is important to consider both etic

approaches, cross-culture accounts, and emic approaches, within-culture accounts, when studying languages and cultures. Anthropologists argue that a combination of both approaches are necessary to gain a complete view of language and culture, a view which can target socially meaningful behaviour within a speech community and one which can extrapolate these findings across other, potentially different, cultures.

Research question 2 presents a related, secondary, motivation for using different languages as case studies for this project. The question pertains to examining whether the level of social salience of a linguistic variable impacts individuals' awareness of the form's associated social meaning. In order to examine the role of a category's social salience, it is necessary to select a category whereby the level of social salience, either stereotype, marker, or indicator, is overt. The social category of gender is one such category which shows overt social awareness in Japanese and, perhaps less so, at least in grammatical rigidity, in English.

One of the earliest studies to examine the social stratification between gender and speech was performed by Fischer (1958), who found that girls consistently used more of the perceived standard form of the (ING) variable [ɪŋ] than boys; a pattern that was later discussed by Labov (2001) as a preference for women to use more standard varieties than men. In addition to prestige, a number of sociolinguistic variables have been studied in connection with gender, for example, the Northern Cities Chain Shift (Eckert, 1989b), high rising terminals in Australian English (G. Guy et al., 1986) and in New Zealand English (Britain, 1992), and glottal stops in British English (J. Milroy et al., 1994). Each of the variables in these studies were linguistic features which have not been overtly assigned a gender distinction by prescriptive means, but rather, the distinction has developed naturally. It is possible then that the mismatch between variables and the social category of gender found in production and those not identified in overt perceptions may exist. For example, the (ING) variable in English showed social stratification across a variety of production studies (Fischer, 1958; Labov, 1966;

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Shopen, 1978; Shuy, Wolfram, & Riley, 1968; Trudgill, 1974), but the association was not perceived as social meaning in Campbell-Kibler's research (2007, 2008, 2011). The category in question may thus require overt and explicit attention in the speech community to be perceivable as socially indexed meaning. This is the case for gender in Japanese, given the history and ideology that surrounds the social construct of the category.

During the Meiji period (1868-1912), male intellectuals pushed the notion of the 'ideal' woman, leading to the construction of Japanese Women's Language (Inoue, 2002, 2004, 2006; Nakamura, 2008). Among others, the use of feminine self-referential forms (e.g., *atakushi* 'I'), beautifying prefixes *o-* and *go-* (e.g., *o-sushi* 'sushi,' *go-han* 'rice'), honorific expressions, as well as the use of new sentence-final particles to be used by women in place of traditional particles used by speakers of both genders, were advocated and propagated as the appropriate way for females to speak (Kajino, 2014). These linguistic variables, among others, were themselves overt in the speech community, as is the social category of gender, due to the overwhelmingly prescriptive nature of linguistic use relating to the category. Therefore, in order to examine the role of a social category's level of social salience, gender and Japanese were selected as a robust and valid opportunity to probe the importance of individuals' explicit weighing of the category in the community.

Thirdly, further to designing the current study to adhere to the constraints of social categories in speech communities by examining Japanese, the current project selected Australian English as a second case study in order to both contribute towards the sociolinguistic enquiry of understudied language varieties and examine overt and highly salient linguistic variables. North American and British English are well studied varieties in sociolinguistic, particularly in studies of social meaning which have largely been focused on examining continuous variation in the phonetic realisation of vowel allophones (Eckert & Labov, 2017). A number of studies have also examined different levels of linguistic variables and their

association with social meaning: for example, quotatives (Buchstaller, 2006; Dailey-O'Cain, 2000), intensifiers (Bauer & Bauer, 2002; Stenström et al., 2002; Stenström, 1999; Tagliamonte, 2005), and discourse markers (Andersen, 2001; Erman, 1997, 2001; Macaulay, 2002; Tagliamonte, 2005). However, outside of North American and British English, other varieties of English are significantly underrepresented in sociolinguistic literature.

Australian English is a relatively young dialect of English where sociolinguistic investigations have been largely limited to sociophonetic variationist research, with very little research examining levels of linguistic description outside of phonetic features, particularly in perceptual investigations. A proclaimed mixing bowl of linguistic diversity (Mulder & Penry Williams, 2014), Australian English developed from south-eastern English varieties and has further developed with the introduction of over 200 commonly used languages including indigenous Australian languages (Cox, 2012; Horvath, 1985; Mitchell & Delbridge, 1965). The contemporary standard form of the dialect has been frequently marginalised with features that are heavily stigmatised. For instance, combinations of vowel realisations that are attributed to the Broad accent of Australian English (Cox & Palethorpe, 2010; Harrington et al., 1997; Horvath, 1985), consonant realisations (Borowsky & Horvath, 1997; Horvath, 1985), and High Rising Intonation (G. Guy et al., 1986). Clippings (e.g., *uni*, *sunnies* and *muso*) and clause final but have also been investigated (Mulder & Penry Williams, 2014), but from a more descriptive rather than sociolinguistic line of enquiry. Thus, Australian English presents an exciting opportunity to examine underrepresented, stigmatised variables and provide sociolinguistic insight into an underrepresented variety of English.

In sum, the motivation for selecting Japanese and Australian English as case studies to address the current project's research questions is to (1) examine social categories that are relevant and can be examined within rigid speech contexts in a speech community; (2) examine social categories which are overt and carry high social salience; and (3) contribute towards the

sociolinguistic enquiry of understudied language varieties. This is achieved by the following experimental series: Chapter 2, Experiments 1A and 1B, targeting goals (1) and (2), which examine Japanese individuals' perceptions of socially-indexed gender, where the social category is not only suggested to be indexed onto the variables through their correlation in production, but the linguistic variants and category are overtly marked in the language system and culture; Chapter 3, Experiments 2A and 2B, targeting goals (2) and (3), which investigate the role of individual alignment in the perception of socially-indexed gender and age on a highly stigmatised Australian English linguistic variable; and Chapter 4, Experiments 3A and 3B, targeting goals (1) and (2), which examines if explicitly learnt associations between Japanese linguistic variables and the social category of gender override associations that are implicitly learnt through linguistic exposure.

1.4.2.2. *Linguistic variables*

The selection of linguistic variables was determined by the following goals of the current project: to provide a rigorous and comprehensive examination of individuals' perceptual awareness of socially-indexed meaning; to investigate how associations are learned by individuals; and to examine the role of individual alignment to a linguistic variable and its expected social meaning. To investigate the first goal of individuals' perceptual awareness of socially-indexed meaning, the variables selected for the current project were required to have previously shown social stratification by correlating with a social category in production. It would be possible to collect new production data for this constraint, however, given the scope of the project, it was necessary to choose variables which showed existing correlations in production that could be tested in a perceptual paradigm.

In the Japanese case studies introduced in section 1.4.2.1, the social category of gender was selected for the rigid and salient ideology that surrounds the social construct in the speech

community. Following the discussed history and ideology that surrounds the social category of gender in Japanese, a number of linguistic variables have been reported as stereotypical features which correlate with the gender of the speaker, with polite expressions among the most common correlates (Ide, 1982). Variation has been shown to exist between men's and women's speech particularly in the case of personal pronouns and honorifics. The following list presents the representative forms of first-person pronouns by gender, see (1). The forms are marked with asterisks to indicate the degree of honorification (two asterisks indicate the highest degree).

(1)   First-person singular pronouns

Degree of politeness	men's speech	women's speech
Highest	*watakushi***	*watakushi***
	*watashi**	*atakushi**
	boku	*watashi*
Lowest	*ore*	*atashi*

Almost all forms are clearly associated with one of the two genders by appearing in only one of the lists. In these cases, the speaker's deference towards the status of their interlocutor is expressed through the level of honorific degree as well as their self-identification as a male or female speaker. The cases of *watakushi* and *watashi* are exceptions. *Watakushi* is the politest first-person pronoun for both male and female speakers. *Watashi,* on the other hand, is a polite form in men's speech, and also a plain form in women's speech. That is, *watashi* has a distinction at the level of politeness between the two genders, unlike *watakushi*. More recent work by Miyazaki (2002, 2004) found that some junior high school girls use masculine self-referential terms (e.g., *boku, ore*) instead of feminine forms (e.g., *watashi, atashi*). The varying degree of use of the variables according to the gender of the speaker suggests there are two levels of distinction for the forms; namely, deterministic, where the forms are used almost

exclusively by one gender (e.g., *ore* and *atashi*), and probabilistic, whereby the forms have a higher frequency of use by one gender, but are also used by the other gender (e.g., *boku* and *watashi*). The term deterministic is not used here to suggest that the relationship is fixed, rather, that the probability of the variable occurring with one gender or the other is very high.

In addition to altering the nominal elements to express politeness (e.g., women's personal pronoun *atashi* marks the lowest degree of politeness, and *watakushi* marks the highest degree of politeness), the degree of politeness can be expressed by altering the predicate (e.g., *iku* 'to go' is the plain/informal style, while *iki-masu* 'to go' is the polite/formal style). The type of predicate corresponds to the polite expressions that occur in the category of address forms. As the term suggests, the addressee of the speaker plays a significant role in the choice of form used by the speaker. The social position, power and age of the addressee influences the speaker's choice as well as the formality of the speech context (Ide, 1982; Okamoto, 1997). Thus, it is no surprise that variation in the choice of predicate also correlates with the social category of gender (Adachi, 2002; Farnsley, 1995; Ide, 1982; Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996). Furthermore, the ideology of y*amato nadeshiko* 'personification of an idealised Japanese woman' also presents pressure for Japanese women to embody the traits of kindness, altruism and gentleness (Hearn, 1905; Starr, 2015; Sugihara & Katsurada, 1999). All of which encourage the use of polite expressions.

Sentence-final particles have also been linked to gender in Japanese. As with pronouns, sentence-final particles correlate with the gender of the speaker as there is a higher frequency of use by one of the genders to use certain forms (Ide, 1990; Ide et al., 1992; Ide & McGloin, 1990; McGloin, 1991). Ide and Yoshida (1999) discuss some of the sentence-final particles and their use by each gender in production. They note that some particles are used almost exclusively by one gender, while others only have a higher frequency of use by male or female speakers. For example, the particle *ze* has a 100% proportion of use by male speakers, whereas

the particle *wayo* has a 100% use by female speakers. The particle *ka*, on the other hand, has an 84% proportion of use by male speakers, and the particle *wa* has an 89% proportion of use by female speakers.

Outside the linguistic features studied under the lens of women's language, other Japanese sociolinguistic variables have also been shown to be used disproportionately with one gender. The reduced variant of the Japanese potential verb suffix is a well discussed example in the literature (Ito & Mester, 2004; Katada, 1998; Kinsui, 2003). It occurs when the potential suffix *-rare* is realised as *-re* by deletion of the syllable *-ra*. Thus, the phenomenon is known as *ranuki* 'ra-deletion.' The distribution of *ra*-deletion has been shown to correlate with the gender of the speaker (Matsuda, 1993; Miller, 2004; Sano, 2009, 2011), age (Fuji et al., 2008; Matsuda, 1993; Sano, 2009, 2011), region, education, formality, and spontaneity (Sano, 2009, 2011). Recently, *ra*-deletion has also been examined within a third wave framework. Sano (2017) argued that the productive use of *ra*-deletion indexically signals fine-grained stylistic information. He found that the distribution of *ra*-deletion differs according to the relationship between speakers and the setting of the utterance. Specifically, *ra*-deletion is used to signal interpersonal relationships demonstrating intimacy/solidarity, and settings associated with the purpose and the atmosphere of the interaction.

Turning to Australian English, the discourse marker in the understudied dialect of English, *yeah-no*, is a relatively new marker in the dialect which has received little attention in research, but has acquired a highly salient reputation in the speech community as "speech junk" (Campbell, 2004), a "verbal crutch - an epidemic from which no strata of society is immune" ("Slang's 'yeah No' Debate Not All Negative," 2004), and has even been the punchline of a recent road safety campaign (Kelly, 2018). The social stratification *yeah-no* presented in Burridge and Florey (2002) demonstrated a high frequency for speakers between the ages of 18-49 years of age to use *yeah-no* (25% of speakers produced the variable), with a slight

preference for the 35-49 age range (25.6%) compared to the 18-34 range (23.5%). The result of Moore's (2007) study was in line with Burridge and Florey in terms of the social category of age. A higher frequency of *yeah-no* cases was found in the speech of individuals aged between 18 and 39. Unlike Burridge and Florey, Moore found a higher frequency among male speakers, 85% of tokens were produced by males, compared to female speakers.

The discussed variables for the Japanese case studies and the Australian English case study all meet the necessary requirement for testing individuals' awareness of socially-indexed meaning. Specifically, Japanese pronouns, sentence final particles, nominal and predicative elements, and variation in the potential suffix allomorphs have all been demonstrated to correlate with the social category of gender. In addition to testing individuals' perception of the expected socially-indexed meaning of gender, the deterministic (e.g., *ore* vs *atashi* [male, female]) vs probabilistic (e.g., *boku* vs *watashi* [male, female]) conditions of variables can be compared to investigate if the social salience of the variable plays a role in the identification of socially-indexed meaning. Should the association between the variables and the category of gender require activation from providing knowledge of the situational context of the variables, this finding would support the hypothesis knowledge of the situational context activate or mediate associations between linguistic variables and social categories. Furthermore, in the case of the Japanese stimuli, the hypothesis that explicitly learned associations override implicitly learned associations can be explored by testing to see if mismatches occur between the social stratification of the variable in production and the perception of socially indexed meaning, thereby investigating the second goal of how associations are learned by individuals.

The Australian English discourse marker *yeah-no* has also shown social stratification in the case of gender and age of the speaker to meet the condition of the first goal. In addition, the stigma which surrounds the variable makes it an ideal test case to examine the third goal of the role of individuals' alignment to the variable and its expected social meanings of age and

gender. This in turn relates to the third research question and hypothesis, which suggests individuals' alignment to the variable mediates their perception of socially-indexed meaning. The specific variables chosen for each case study are outlined in the relevant chapters in detail, with a full list also provided in the Appendices.

1.4.2.3.   Experimental procedures

Two experimental paradigms were employed in the current project to measure the attitudes and beliefs of individuals, semantic differential judgements (Experiments 1A and 1B, 2A and 2B, and 3A and 3B, reported in Chapters 2, 3, and 4) and forced choice self-report tasks (Experiments 2A and 2B, reported in Chapter 3). Both procedures were developed from previous sociolinguistic methods which will be discussed in this section. The section will also present an overview of the selected procedures and discuss how the approaches contribute to the examination of sociolinguistic attitudes and beliefs.

The study of language attitudes has employed a range of approaches, including, overt questioning, media analysis, and perceptual dialectology. The matched-guise technique is one of the most popular methods designed to covertly elicit individual's attitudes towards members of different ethnolinguistic groups (Campbell-Kibler, 2006b; Lambert et al., 1960). The technique involves having a single speaker produce two (or more) utterances in different languages or varieties. The speech samples are then heard by participants who listen to the recordings and evaluate them on a range of, typically, adjectival qualities using semantic differential scales. For example, how intelligent/unintelligent, educated/uneducated, or friendly/unfriendly the speakers sounded. Because the participants are kept naive to the fact that the alternate recordings have been produced by the same person, they evaluate each guise (language or accent performance) as an individual speaker. The judgements from these evaluations thus provide not only the quality of best fit, but the degree of how well the quality

fits the description of the speaker. Thus, individuals' offline judgements can be collected and analysed to provide measures of attitudes and beliefs, therefore providing a valid and robust measure for the present project.

A number of studies have used semantic differential scales and the matched-guise technique on a range of linguistic situations, including comparing multiple languages, such as French and English in Canada (Genesee & Holobow, 1989), language varieties, such as regional accents in England (Dixon et al., 2002), speech rate (Giles et al., 1992), and more recently, the semantic differential scales and the matched-guise technique have been used to investigate evaluative reactions to sociolinguistic variables (Campbell-Kibler, 2006a, 2007, 2008; Plichta & Preston, 2005). Using a modified matched guise study, which employed the use of digitally manipulated speech, stimuli from spontaneous as opposed to read speech, and both open-ended group interviews and a controlled experiment, Campbell-Kibler (2007, 2008, 2011) manipulated the realisation of the final nasals in (ING) to examine if the variants influenced listeners' judgments about the speaker. Participants responded to eight survey pages, including semantic differential adjective scales ranging from 1 to 6. Among other findings, the results showed that listeners judged speakers who used the alveolar nasal -*in* [n] as more casual and less educated/intelligent, and speakers who used the velar nasal -*ing* [ŋ] as more formal and more educated/intelligent. While the study yielded significant findings, there is a risk to using scales which are even in number. Even numbered scales force participants to choose an adjectival quality and indicate the degree of fit. Odd numbered scales offer a neutral midpoint where participants can indicate a judgement that does not select the quality in question or consequently the degree of fit. In the present project, this concern is addressed by using a scale ranging from 1 to 5.

The current study additionally builds upon the matched-guise technique paradigm by presenting sentences to participants which vary according to the single linguistic variable of

the respective study. In each case study, written speech was used as opposed to audio recordings to ensure that participants made their judgements on the sentences and variables alone, without the use of acoustic characteristics to inform their judgements. For example, vowel formant frequencies are lower, bandwidths are wider and the fundamental frequency is generally lower for male speakers (Peterson & Barney, 1952). This modification is especially important when testing gender as a sociolinguistic category, as a design using audio recordings risks eliciting participants' judgements according to the qualities listed above, and not the linguistic variable. Another modification to the paradigm in the current study was the decision to use only a single semantic differential scale to collect responses as opposed to multiple. The decision here reflected the goals of the study. As the current research examining whether individuals' explicit beliefs override their linguistic experience and was not designed to probe the indexical field of a variable, only a single social category is required. Further, multiple categories and scales increase the cognitive load on participants, creating a more effortful and overall demanding experience. Therefore, the modifications remain true to the core principles of the matched-guise technique while building upon the technique in a manner that directly tests the hypotheses of the current study.

Forced choice self-report tasks were the other procedure chosen for the current series of studies. Despite the fact that self-reports are a highly stigmatised tool in linguistic research, see Section 1.2 for details, the examination of socially desired responses yields very interesting effects, particularly in reference to individuals' attitudes and beliefs. For example, if a speaker-listener has a high degree of linguistic insecurity to a variable, they may be more sensitive to the variable's socially indexed meaning, compared to speaker-listeners who have a low degree of linguistic insecurity. That is, they may be more likely to perceive a variable's socially-indexed meaning due to their sensitivity to the variable in the speech community. Such an effect would build upon research which suggests the association between linguistic variables and

social categories can be mediated by both attitudinal and cognitive factors. Furthermore, individual alignment may offer an account for cases where expected meanings are not perceived by listeners, i.e., the variable's salience, and whether they are, or are not, activated by the speech context. The current study thus employs the use of forced choice self-tasks in order to elicit individuals' alignment to the variable, that is, as a user or a non-user. Such a measure allows for the comparison with the results of the semantic differential scales to test the role of individual alignment to the variable as a mediating factor in the evaluation and awareness of socially-indexed meaning.

1.5. Introduction summary and outline of experimental chapters

This introduction chapter presented a current gap in one of the fundamental goals of sociolinguistic research. Specifically, the literature review highlighted the frequent mismatches present between the social stratification of linguistic variables and social categories which pertain to the speaker found in the social stratification of forms and individuals' awareness of the association as socially-indexed meaning. The theoretical accounts for how associations between variables and social categories are formed and recruited, the previously offered explanations for these mismatches, and the current models of learning were also discussed in the Introduction. The literature review provided a comprehensive overview of the available findings on the perception of socially-indexed meaning and emphasised the importance of understanding how associations between variables and categories are learned and thus recruited by speakers for the effective communication of social meaning, which has in turn informed the development of the present project.

The current chapter concluded with an overview of the research questions and aims, and the experimental design of the present project. As stated in Section 1.4, the present project aims to provide a thorough empirical examination of the role of individuals' beliefs and alignment

to sociolinguistic variables in the awareness of socially-indexed meaning. The aim is examined by probing the influence of the situational context of the variable, the social salience of the variable and social category in question, the alignment of the individual towards a linguistic variable and the method by which the association between variant and social category is acquired. This comprehensive approach to testing the role of explicit beliefs in the perception of social meaning establishes this project's unique and novel contribution to the existing literature on this topic. At the same time, the current methodological design, the languages and social categories, the linguistic variables, and experimental procedures, are all based on existing work, which ensures that appropriate and effective instruments are selected and that the results of this investigation can be interpreted in the context of the prior research and, ultimately, help contribute to the understanding of the complex and circular nature of the attitudinal and cognitive factors that shape individuals' identities and sociolinguistic choices.

The three empirical case studies carried out within the scope of this project are presented in the following three chapters. Chapter 2 presents the investigation of the possible indexical association, in context and no-context conditions, between Japanese linguistic variables that have correlated with the gender of the speaker and the social category of gender in two online semantic differential perception tasks. Chapter 3 investigates the role of Australian English individuals' alignment in the perception of socially-indexed gender and age on the highly stigmatised discourse marker *yeah-no* using a combination of online semantic differential perception tasks and self-reporting tasks. In Chapter 4, the investigation of a possible indexical association is again examined, with specific enquiry into comparing the method by which the association is learned, either implicitly or explicitly, through comparing the results of a corpus analysis with an online semantic differential perception task. Each chapter is structured as an individual research article and, thus, begins with its own literature review with also defines the

aims specific to that particular study, and provides a more in-depth description of the methodology and its relevance to the design of the study.

Chapter 2: Variation, gender and perception: the social meaning of Japanese linguistic variables[2]

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Abstract

The social categories that characterise a speaker frequently correlate with the use of specific linguistic variables. Research suggests that such correlations are sometimes recognised as socially-indexed meaning. This study examines Japanese individuals' attitudes towards variables that have been shown to correlate with the social category of gender in production. In particular, we contrast patterns of gendered variation that (1) have been prescriptively associated with speaker gender and (2) tend to correlate with gender in speech production but are outside of the set of prescriptive "women's language". We found that individuals are able to identify the gender of the speaker from use of the prescriptive variables but not from other patterns of gendered variation. Additionally, knowledge of the speech context of the variables had no significant effect on individuals' judgements. The results indicate that not all social information available from patterns of language use are recovered by listeners. More broadly, examining the transmission of social meaning through linguistic variation requires a combination of production- and perception-based research methods.

2.1. Introduction

One of the fundamental goals of sociolinguistic inquiry is to understand speakers' motivations to use one linguistic variant over another. Recent work in the discipline of sociolinguistics, referred to as third wave research (Eckert, 2005), has in particular explored this question by focusing on social meaning as a force which motivates speakers to use certain linguistic variants (Agha, 2003; Campbell-Kibler, 2007, 2008, 2009, 2011; Johnstone & Kiesling, 2008; Levon, 2011; Emma Moore, 2004; Emma Moore & Podesva, 2009; Podesva, 2007, 2011a, 2011b; Podesva et al., 2015; Zhang, 2005, 2007, 2008). Podesva et al. (2015) summarises this development succinctly: "third wave studies shift their focus from linguistic change to the social meanings that motivate speakers to use one linguistic variant over another." Contrary to

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earlier work in sociolinguistics, coined first and second wave research, which examines the relationship between linguistic variation and social, or demographic, categories on both major and local scales, respectively, third wave researchers suggest that variables are available for speakers to use as a resource to construct identities, stances and personas. This claim builds upon the work of Silverstein (1976), who argued that associated social categories are indexed by variables to signal meaning which is significant to some speakers, particularly those involved in a communicative event. For example, the released variant of word-final /t/ occurs in high rates among Orthodox Jewish men (Benor, 2001, 2004). Benor concluded that stop releases not only indexed learnedness, but that in the examined cultural context, learnedness indirectly indexed masculinity. Therefore, in order to sound like a learned man, the third wave expectation is that Orthodox Jewish boys release their word final /t/s. In this present study, we sought to further this line of enquiry into social meaning by examining individuals' attitudes towards Japanese linguistic variables that have been previously shown to vary with speaker gender in production. Ultimately, we argue on the basis of our evaluation results that the correlation of a linguistic form with a social category is a necessary but not sufficient condition for social indexation.

The ability for speakers to use socially indexed meaning to construct identities, stances and personas rests on two foundations. The first is that social meaning must be indexed by the variable such that the choice of the form hints at the social category of the speaker in addition to any other semantic contribution (e.g., context-free truth conditional meaning) . The second is that individuals are aware of the indexed social meaning. In order for the variable to be used for the purpose of identity, personae or stance construction, within a community, the social meaning of the variable must be shared knowledge. If individuals are not aware of the indexed meaning, they could still produce the form as a result of imitative social conditioning, but the intended social information would be unstable. For example, quotative *like* in English has been

shown to correlate with the social categories of gender, age and socioeconomic status (Dailey-O'Cain, 2000). If these categories have been indexed onto the variable in addition to its quotative meaning, it would imply that listeners are aware of this additional meaning and would therefore be able to use *like* to construct specific identities in relation to the indexed social meaning. Such sociolinguistic performance is not possible if individuals are unaware of the indexed meaning. In Buchstaller (2006) the social categories of age and gender amongst British listeners were shown to be identifiable from quotative *like* use. This finding suggests that British speakers used *like* to construct identities in relation to age and gender, but not in relation to socioeconomic status which was not found to be indexed onto the variable.

The first wave studies (W. Labov, 1966c; Trudgill, 1974; Wolfram, 1969) that examined the systematicity of socially conditioned variation across major demographic categories and the second wave studies (Eckert, 2000; L. Milroy, 1980; Rickford, 1986) which focused on the relationship between variation and local, participant-designed categories, have shown consistently and reliably that variables correlate with social categories in production. It is this finding from production-based studies which is used to support the third wave claim that variables index social meaning. Specifically, correlations in practice are suggested to reflect the recruitment of variables for the communication of social meaning. The logic of this claim rests on the process of indexicalisation (Eckert, 2008; Silverstein, 1976, 2003), where meaning is indexed through the correlation between a signifier and the signified in space and time. Forms are capable of indexing additional meanings, further to semantic meaning or first order meanings, leading to what Eckert (2008) describes as "a field of potential meanings — an *indexical field*, or constellation of ideologically related meanings, any one of which can be activated in the situated use of the variable." Third wave variationists thus suggest that the social meaning(s) of linguistic variables are fluid and flexible, and that their interpretation is dependent on the situational context.

The process of indexicalisation is in line with usage-based approaches to language learning. Exemplar models are one such usage-based approach, which assumes that individual speech utterances are aggregated in memory as exemplar representations that contain rich linguistic and non-linguistic information (Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002). This aggregation results in a mapping of relevant social categories pertaining to the speaker to each exemplar (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999). Research has shown that once an exemplar representation is stored in an individual's memory it can be activated during both the production and perception of speech (Hay, Nolan, and Drager, 2006; Johnson, 1997; Lozito and Mulligan, 2010; Pierrehumbert, 2001). According to exemplar theory, speakers are thus able to produce forms which index correlating social categories and perceive the social categories that are indexed onto the representations. Using the example above, exposure to an Orthodox Jewish learned man's patterns of released /t/ would create a mental representation of released /t/ and its associated social categories; namely, religion, education and gender. A speaker can then use this feature as a stylistic device to create a particular social persona. But this is only effective if this device is recognised as an index of this social persona. Consequently, we would expect individuals to be able to identify the social information that correlates with linguistic variables within a given speech community.

Regional dialect labelling experiments have provided evidence that individuals are aware of correlating social categories that are indexed onto variables (Baker et al., 2009; Cramer, 2010; Fuchs, 2015; Kirtley, 2011; Purnell et al., 1999; Suárez-Budenbender, 2009). Clopper and Pisoni (2004) examined Indiana college students' ability to accurately categorise six North American regional dialects. They found that while the listeners' general identification accuracy was low, their responses were statistically above chance. Moreover, speakers who had lived in at least three different states were more accurate than those who had only lived in Indiana.

Speakers who had lived in a given region also categorised talkers from that region more accurately than speakers who had not lived there. This additional finding was in line with exemplar theory, suggesting that listener experience is an important factor in correctly identifying a speaker's region based on linguistic variables.

Social evaluation studies have also shown that listeners are able to identify socially indexed meanings from linguistic variables. One series of studies by Campbell-Kibler (2007, 2008, 2011) examined the effects of the sociolinguistic variable (ING) (e.g., *walkin'* vs. *walking*) on listeners' attitudes about speakers. Manipulating the realisation of the final nasals in ING influenced listeners' judgments about the speaker. Specifically, however, the results differed from previous studies which examined the social stratification of (ING). Previous studies found that in addition to the associated social categories identified in Campbell-Kibler's research, the social categories of gender, socioeconomic status, dialect, age and race were also shown to correlate with (ING) (Fischer, 1958; Labov, 1966; Shopen, 1978; Shuy, Wolfram, and Riley, 1968; Trudgill, 1974). The asymmetry between patterns in production and patterns in perception has also been identified for other linguistic variables including *t/d* deletion in English (Baugh, 1979; Campbell-Kibler, 2006a; G. R. Guy & Boyd, 1990; W. Labov, 1972c; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969); quotative and focuser *like* (Buchstaller, 2006; Dailey-O'Cain, 2000), fundamental frequency (Kirtley, 2011; Linville, 1998; Smyth et al., 2003), and */ay/* monopthongisation (Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008). This asymmetry raises a number of questions pertaining to why individuals shown an awareness of the association between some linguistic variants and social categories, but not others.

The context of the variable has been investigated as an explanation for individuals' inability to reliably identify social meaning that should be indexed onto a variable. As speech is inherently a social act, usually performed between a speaker and an interlocutor, both of

which who are active participants in the exchange, we can expect that interpretations of meaning are contingent upon the interactants' experiences, social positions and goals. In the case of Campbell-Kibler (2007, 2008, 2011), listeners rated an alveolar guise as compassionate when they perceived the speaker to be Southern, while rating the same guise as condescending when they perceived the speaker to be from elsewhere. Social information about the speaker has also been shown to influence how listeners perceive the speech of the individual individual (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). In Hay and Drager (2010), New Zealand English speakers were exposed to either stuffed toys associated with Australia (kangaroos and koalas) or toys associated with New Zealand (stuffed kiwis) during a vowel perception task. Participants shifted their perception of vowels according to which set of toys they were exposed to, i.e., participants responded with more Australian-like vowels when they were in the Australian "kangaroo" condition. Thus, it is clear that listeners' knowledge of the speaker is one factor which influences their perception of speech and indexed social meaning, but what of other contextual factors?

Given the history of enquiry into social meaning, the fluid and flexible nature of perception presents an interesting question. There is no denying the role of speaker-context in individuals' perceptions, both in terms of speakers and socially indexed meaning; however, if linguistic production reflects the recruitment of variables for the communication of social meaning, why then are listener judgements so asymmetrical in nature? This is especially important, given that this asymmetry creates a phenomenon that violates both foundations that are required for speakers to use socially indexed meaning to construct identities, stances and personas; namely, that meaning must be indexed and subsequently be identifiable by individuals. One possibility lies with the ease with which a form is perceived by a listener, that is, the form's social salience. Labov (1972b) proposed a model of social salience which

delineates three variable types, demarcated by speakers' awareness of their existence. The first level are *indicators*, which show zero degree of social awareness and are therefore difficult to detect for both linguists and native speakers. *Markers* are usually socially stigmatised forms characterised by sharp social stratification across groups and styles. The highest level of social awareness for variables is the *stereotype* category. Stereotyped forms display both social and stylistic stratification and are subject to explicit meta-commentary due to their overt level of social awareness in the speech community. The salience of a variable in the speech community could therefore be crucial to a listener's awareness of the form. That is, if the variable is non-salient, at indicator level, its associated social meaning(s) may not be learned by the listener. This claim also fits with the social category in question. Categories may share a similar scalic nature, where some are more significant to certain speech communities compared to others. It could be that listener evaluations are contingent upon the salience of the linguistic variable and the importance of the social category in question. Thus, the present paper examines individuals' evaluations within a language community where the social category is not only suggested to be indexed onto the variables through their correlation in production, but the linguistic variants and category are overtly marked in the language system and culture.

2.2. Gender and Japanese

Because linguistic variables have been shown to index a number of social meanings, some of which do and do not pattern with correlations in production, the current study takes the focused approach of examining only the social category of gender. Specifically, we investigated the category of gender and variables which pattern with the category in production. Our interests lie in the comparison between social categories found in production and those that are identifiable by individuals in perception. We therefore begin this line of research with a single category which lays the foundation for further study of additional and potential co-present

categories in future work (cf. Okamoto and Shibamoto-Smith (2016) for a detailed account of potential co-present categories and sociolinguistic categorisation in Japanese).

The social category of gender has been widely researched in the domain of sociolinguistics. We would like to note the distinction here between gender, a constructed ideology that depends on perception, and sex which is a biological category. The category of gender has been claimed to be as impactful to the constructions of identity as the dimensions of region and age (Podesva & Kajino, 2014). It abstracts over a range of globally and locally constructed practices (Eckert & Labov, 2017). One of the earliest studies to examine the correlations between gender and speech was performed by Fischer (1958), who found that girls consistently used more of the perceived standard form of the (ING) variable [ɪŋ] than boys, a pattern that was later discussed by Labov (2001) as a preference for women to use more standard varieties than men. In addition to prestige, a number of sociolinguistic variables have been studied in connection with gender, for example, the Northern Cities Chain Shift (Eckert, 1989b), high rising terminals in Australian English (G. Guy et al., 1986) and in New Zealand English (Britain, 1992), and glottal stops in British English (J. Milroy et al., 1994). Gender has also been studied in other languages within a sociolinguistic framework. Some examples include phonological, morphological and lexical differences between male and female speakers of Koasati (Haas, 1944), monophthongs and diphthongs in the speech of Tunis women (Trabelsi, 1991), and patterns of non-palatised [l] in Crete (Mansfield & Trudgill, 1994).

Japanese, in particular, is a key language of interest, given the ideology that surrounds the social construct of gender. During the Meiji period (1868-1912), male intellectuals pushed the notion of the 'ideal' woman, leading to the construction of Japanese Women's Language (Inoue, 2002, 2004, 2006; Nakamura, 2008). Among others, the use of feminine self-referential forms (e.g., *atakushi* 'I'), beautifying prefixes *o-* and *go-* (e.g., *o-sushi* 'sushi,' *go-han* 'rice'), honorific expressions, as well as the use of new sentence-final particles to be used by women

in place of traditional particles used by speakers of both genders, were advocated and propagated as the appropriate way for females to speak (Kajino, 2014). These features were overt in the speech community, and would therefore be considered to be at least *markers*, if not *stereotypes*, on a social salience scale. While women's speech is no longer constrained by official policy, metapragmatic discourses, both in real-world situations and fictional works (Mizumoto, 2006; Mizumoto et al., 2008; Nakamura, 2013), continue to demarcate socially desirable representations of "good" or "appropriate" feminine speech (Okamoto & Shibamoto-Smith, 2016). Thus, the overt distinction between what is considered women's speech and men's speech in Japanese culture lends itself as an ideal case study for examining the association between the category of gender and linguistic variables.

The linguistic features which have been examined as stereotypical features that correlate with the gender of the speaker frequently address the use of polite expressions. In her work on politeness and women's language in Japanese, Ide (1982) notes the variation between men's and women's speech in the case of personal pronouns and honorifics. The following list presents the representative forms of first-person pronouns by gender, see (2). The forms are marked with asterisks to indicate the degree of honorification (two asterisks indicate the highest degree).

(2)   First-person singular pronouns

Degree of politeness	men's speech	women's speech
Highest	*watakushi***	*watakushi***
	*watashi**	*atakushi**
	boku	*watashi*
Lowest	*ore*	*atashi*

Almost all forms are clearly associated with one of the two genders by appearing in only one of the lists. In these cases, the speaker's deference towards the status of their interlocutor

is expressed through the level of honorific degree as well as their self-identification as a male or female speaker. The cases of *watakushi* and *watashi* however are exceptions. *Watakushi* is the politest first-person pronoun for both male and female speakers. *Watashi,* on the other hand, is a polite form in men's speech, and also a plain form in women's speech. That is, *watashi* has a distinction at the level of politeness between the two genders, unlike *watakushi*. The gendered distribution of Japanese pronouns has been examined both in naturalistic speech and in written text (Hagino, 2007; Kojima, 2013; Miyazaki, 2002, 2004; Nakamura, 2009; Owada, 2011). In a study examining the speech of Japanese university students, Hagino (2007) found a tendency when speaking for men to use the pronoun *ore* (75.6% of total pronouns) and females to use either *watashi* (36%) or *uchi* (42%). A distinction in gendered pronoun use can also be seen in the speech and literature of Japanese children. Nakamura (2009) examined elementary-school textbooks of the Japanese language and found that all five included units where girls were encouraged to use the female first-person pronoun *watashi* and boys the male first-person pronoun *boku*. In addition, Miyazaki (2002, 2004) found that some junior high school girls use masculine self-referential terms (e.g., *boku, ore*) instead of feminine forms (e.g., *watashi, atashi*). The varying degree of use of the variables according to the gender of the speaker suggests there are two levels of distinction for the forms; namely, deterministic, where the forms are used almost exclusively by one gender (e.g., *ore* and *atashi*), and probabilistic, whereby the forms have a higher frequency of use by one gender, but are also used by the other gender (e.g., *boku* and *watashi*). It is important to note that we do not use the term deterministic in the sense that the relationship is fixed, rather, that we use deterministic to indicate that the probability of the variable occurring with one gender or the other is very high.

Sentence-final particles have also been linked to gender in Japanese. These particles are used to express the speaker's attitude and are found most frequently in informal speech. As with pronouns, sentence-final particles correlate with the gender of the speaker as there is a

higher frequency of use by one of the genders to use certain forms (Ide, 1990; Ide et al., 1992; Ide & McGloin, 1990; McGloin, 1991). Ide and Yoshida (1999) discuss some of the sentence-final particles and their use by each gender in production. They note that some particles are used almost exclusively by one gender, while others only have a higher frequency of use by male or female speakers. For example, the particle *ze* has a 100% proportion of use by male speakers, whereas the particle *wayo* has a 100% use by female speakers. The particle *ka*, on the other hand, has an 84% proportion of use by male speakers, and the particle *wa* has an 89% proportion of use by female speakers. The particle *wa*, and other feminine sentence-final particles, are claimed by Ide and Yoshida to have two different functions. The first is to establish empathy between the speaker and the interlocutor and the second is to soften the statement. To soften in this case is a politeness strategy, as it weakens the imposition of the statement upon the interlocutor. The particles that are either exclusively or have a higher frequency of use by males, such as *zo, ze, yo,* and *na*, do not indicate softening, and instead convey self-confidence, assertion, or confirmation. While a detailed account of Japanese pronominal and sentence final particle use is outside of the scope of the current paper, Nakamura (2014) and Okamoto and Shibamoto-Smith (2016) provide overviews of Japanese gendered language, highlighting the use of stereotyped norms and the differences in the use of forms between in naturalistic conversations and mediatised texts.

Outside the linguistic features studied under the lens of women's language, other Japanese sociolinguistic variables have also been shown to be used disproportionately with one gender. The reduced variant of the Japanese potential verb suffix is a well discussed example in the literature (Ito & Mester, 2004; Katada, 1998; Kinsui, 2003). It occurs when the potential suffix *-rare* is realised as *-re* by deletion of the syllable *-ra*. Thus, the phenomenon is known as *ranuki* '*ra*-deletion.' The long form, *-rare*, is the older variant which is the conservative and prescribed form of the suffix (Katada, 1998; Sano, 2009). The short form *-re* is the more recent

variant of the potential verb suffix, first observed in the early 20th century circa 1920 in the Kanto region in Japan (Kinsui, 2003), and is stigmatised as sloppy and lazy Japanese (Fumio, 1998; Ito & Mester, 2004). Discussions of *ra*-deletion in the literature have revealed that a relationship exists between the variant and demographic categories. The distribution of *ra*-deletion has been shown to correlate with gender (Matsuda, 1993; Miller, 2004; Sano, 2009, 2011), age (Fuji et al., 2008; Matsuda, 1993; Sano, 2009, 2011), region, education, formality, and spontaneity (Sano, 2009, 2011). In terms of gender, specifically, the corpus results presented in Sano (2009, 2011) showed a higher distribution of *ra*-deletion among females (females = 9.5% of *ra*-deletion in the overall use of potential suffixes; males = 5.1%). Contrarily, the self-report findings in Sherwood (2015) showed a higher frequency of *ra*-deletion in males (males = 44% of *ra*-deletion in the overall use of potential suffixes; females = 27.4%). Interestingly, the natural data and the self-reported data showed correlations which differed in the direction of the association between the variant and the gender of the speaker. This mismatch can be attributed to the linguistic security of the speaker, whereby speakers' reported language use often reflects the pattern which is deemed to be socially desirable, whether the pattern be perceived correct or incorrect by the speech community (W. Labov, 1966a; Trudgill, 1972). The tendency of males to self-report a higher usage of *ra*-deletion suggests that the variant is both socially salient and regarded to be a feature of vernacular speech as standard forms are often more common in female speech (Fischer, 1958; W. Labov, 2001).

Recently, *ra*-deletion has also been examined within a third wave framework. Sano (2017) argued that the productive use of *ra*-deletion indexically signals fine-grained stylistic information. He found that the distribution of *ra*-deletion differs according to the relationship between speakers and the setting of the utterance. Specifically, *ra*-deletion is used to signal interpersonal relationships demonstrating intimacy/solidarity, and settings associated with the

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purpose and the atmosphere of the interaction. While these findings have significantly contributed to our understanding of listener perceptions of *ra*-deletion on a stylistic level, we do not yet know whether *ra*-deletion indexes social meaning pertaining to the background of the speaker, such as their gender. That is, we do not know if individuals are able to judge these correlating social categories as social meaning from a speaker's use of the variant.

Therefore, the current study examines the possible indexical association between Japanese linguistic variables and the social category of gender. In two perception experiments, we investigate pronouns, sentence-final particles and suffixes. We begin by first examining whether Japanese speaker listeners can identify the gender of a speaker from linguistic variables that have been previously shown to correlate with the social category of gender in production. Experiment 2-1 explores the role of awareness in the evaluation of social meaning. In the second experiment, Experiment 2-2, we explore the role of context in individuals' evaluations. Contrary to previous studies mentioned above (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999), we examined situational context compared to context in the sense of knowledge about the speaker. This decision was made to further unpack the role of context, specifically, whether the judgements of social meaning are altered by knowledge of the speech utterance compared to knowledge of the speaker.

2.3. Experiment 2-1

This first experiment aimed to test the hypothesis that the social category of gender would be identifiable by Japanese individuals from linguistic variables that pattern with gender in production. This expectation was formed on the basis that all forms in question have an overt salience in the speech community, (markers or stereotypes) and the social category itself, gender, has a high significance in the speech community. We sought to examine attitudes

towards variables which have been shown to correlate with the gender of the speaker in production. Specifically, the first-person singular pronouns *ore, atashi, boku* and *watashi*; and sentence-final particles *ze, wayo*, *nda* and *wa*. Given that the distribution of the phenomenon of ra-deletion has been previously shown to correlate with the social category of gender in both corpora (Matsuda, 1993; Sano, 2009, 2011) and self-reports (Sherwood, 2015), we selected this variable and category for our case study. It is worth noting, however, that unlike pronouns and sentence final particles, which have been strongly, and in many cases prescriptively, associated with the gender of the speaker, the proportion of *ra*-deletion in natural speech (<10% of the overall use of potential suffixes) is significantly lower than proportions suggested in even the probabilistic degrees of sentence-final particle usage (>84%). We therefore expected, that while *ra*-deletion was hypothesised to have a social salience at either marker or stereotype level, the effect size would be smaller than that of the other variables in question.

2.3.1. Experiment 2-1 Methods

The participants were recruited primarily through word of mouth and online networking sites that were circulated through the researchers' friend networks, mostly via Facebook and Twitter. A total of 63 native Japanese participants (30 male, 33 female) took part in this experiment, with an age range of 18 to 65 years at the time of testing (see Table 2-1). They had grown up in a variety of prefectures, including, Tokyo, Saitama, Yamaguchi and Kagawa. 35 participants were students at the time of testing, and 28 volunteered that they were employed (not students).

Participant gender	18-25	26-35	36-45	46-55	56-65	66-75	Total
Males	17	7	3	1	1	1	30
Females	15	8	4	4	2	0	33

The complete stimulus set presented during the task included 120 sentences comprising of four different condition types: PRONOUN, SENTENCE FINAL PARTICLE, RANUKI and LEXICAL. The complete list of sentences appears in Appendix B. Recall that past research has demonstrated a distributional correlation with the social category of gender and speakers' pronoun choices (Ide & McGloin, 1990) and sentence-final particle choices (e.g., Ide, 1979) in speech production. Variation in potential suffix allomorphs has also been shown to correlate in production with the social category of gender (Matsuda, 1993; Sano, 2009, 2011). The aim of this experiment was to compare the different condition types with lexical choices which evoke participants' perceptions of gender. All stimuli sentences were presented in plain, non-honorific, form in an effort to avoid evoking gender attitudes through distinctions in politeness (Ide, 1990). Note that in Japanese, plain form refers to one of the two grammatically expressed clause final forms that marks the absence of addressee honorifics, namely, *-ru.* The other, the polite form *-masu,* marks the presence of addressee honorifics.

40 sentences were chosen as PRONOUN stimuli, with two subgroups within the condition, namely, DETERMINISTIC and PROBABILISTIC. The ten sentences used in the DETERMINISTIC subgroup included the first-person pronouns *ore,* used almost exclusively by male speakers, and *atashi*, which is used primarily by female speakers (10 sentences × 2 deterministic pronoun variations [male, female]). While the ten sentences in the PROBABILISTIC subgroup included the first-person pronoun *boku,* which has a higher frequency of use by male speakers, but can also be used by female speakers, and *watashi*, which has a higher frequency of use by female speakers but can also be used by male speakers (10 sentences × 2 probabilistic pronoun variations [male, female]). Due to the rarity of the DETERMINISTIC pronouns occurring in the

speech of the opposite gender, we expected to see a larger difference in the DETERMINISTIC subgroup results compared to the PROBABILISTIC subgroup.

40 sentences were chosen as SENTENCE FINAL PARTICLE stimuli, again including the DETERMINISTIC and PROBABILISTIC subgroups. The ten sentences used in the DETERMINISTIC subgroup included the sentence-final particle *ze,* used primarily by male speakers, and *wayo*, which is used primarily by female speakers (10 sentences × 2 deterministic sentence final-particle variations [male, female]). While the ten sentences in the PROBABILISTIC subgroup included the sentence-final particle *nda,* which has a higher frequency of use by male speakers, but can also be used by female speakers, and *wa*, which has a higher frequency of use by female speakers but is also used by male speakers (10 sentences × 2 probabilistic sentence-final particle variations [male, female]). Again, due to the rarity of the DETERMINISTIC sentence-final particles occurring in the speech of the opposite gender, we expected to see a larger difference in the DETERMINISTIC subgroup results compared to the PROBABILISTIC subgroup.

Ten vowel-final verbs were chosen as the RANUKI stimuli. The verbs appeared in both the long form of the potential verb suffix, *-rare*, and the short form of the potential verb suffix, *-re*. All RANUKI stimuli verbs had *e* as the stem-final vowel, were measured as two morae in length, were monomorphemic, were in main clauses, were in positive sentences, and they were preceded by the case particle *ga* to avoid any confusion of the semantic meaning, or homophony with the passive marker (10 verbs × 2 variations [long, short]). These conditions were controlled because they are known to influence the distribution of potential suffix allomorphs (Matsuda, 1993; Sano, 2009, 2011). All RANUKI stimuli sentences end with *-nodewa* to maintain consistency with the other test conditions. Furthermore, *-nodewa* is a particle used to express a speaker's uncertainty which has not previously shown variation according to the gender of the speaker, ensuring participant judgements are restricted to variation in the potential suffix and not the sentence final particle.

The remaining 20 stimuli made up the LEXICAL stimuli (10 sentences × 2 lexical variations [male, female]). An example of a lexical choice more likely said by a male was *sarariiman* 'salaryman', and the female variation for this sentence was *hosutesu* 'hostess'. While lexical features other than pronoun and swearing are not often examined for gender effects, they were included in this study to act as filler sentences that could be compared with the other test conditions. All stimuli items were checked by three native speakers to confirm the sentences reflected natural speech and were grammatically correct.

The participants performed the perception task in the format of an online survey administered by Qualtrics online survey software. All instructions, materials and stimuli were presented in Japanese. This procedure allowed the participant the freedom to choose the device they performed the procedure on (computer or mobile device), and the location and the time of day they wanted to perform the task. By providing these freedoms for the participants and removing an interviewer from the procedure, we hoped to avoid potentially eliciting socially desired responses as opposed to naturalistic data.

In the first section of the survey, the task was to judge if the presented sentence was more likely said by a male or a female speaker. The participants were instructed to use a five-point adjective scale to indicate if the sentence was more likely said by a male (1) or by a female (5). The odd number provided participants the opportunity to indicate a neutral judgement of the sentences, an option that would not be possible with a force choice method. Each sentence was presented in written form to the participant one at a time in pseudo-random order. Written speech was used as opposed to audio recordings to ensure that participants made their judgements on the sentences alone, without the use of acoustic characteristics to inform their judgements. For example, vowel formant frequencies are lower, bandwidths are wider and the fundamental frequency is generally lower for male speakers (Peterson & Barney, 1952). It is

possible to examine *ra*-deletion through written stimuli as the phenomenon has been shown to occur both in speech and in casual and informal writing (Ito & Mester, 2004).

The second section of the survey was designed to collect participants' demographic data including their age, gender, occupation, birthplace, where they grew up, and whether they were a student studying at a university. This information was collected in the second section of the survey to both allow participants to fully understand the task before asking them to provide their demographic information, and to avoid any possible biasing effect of the survey on gender responses.

2.3.2. Experiment 2-1 Results
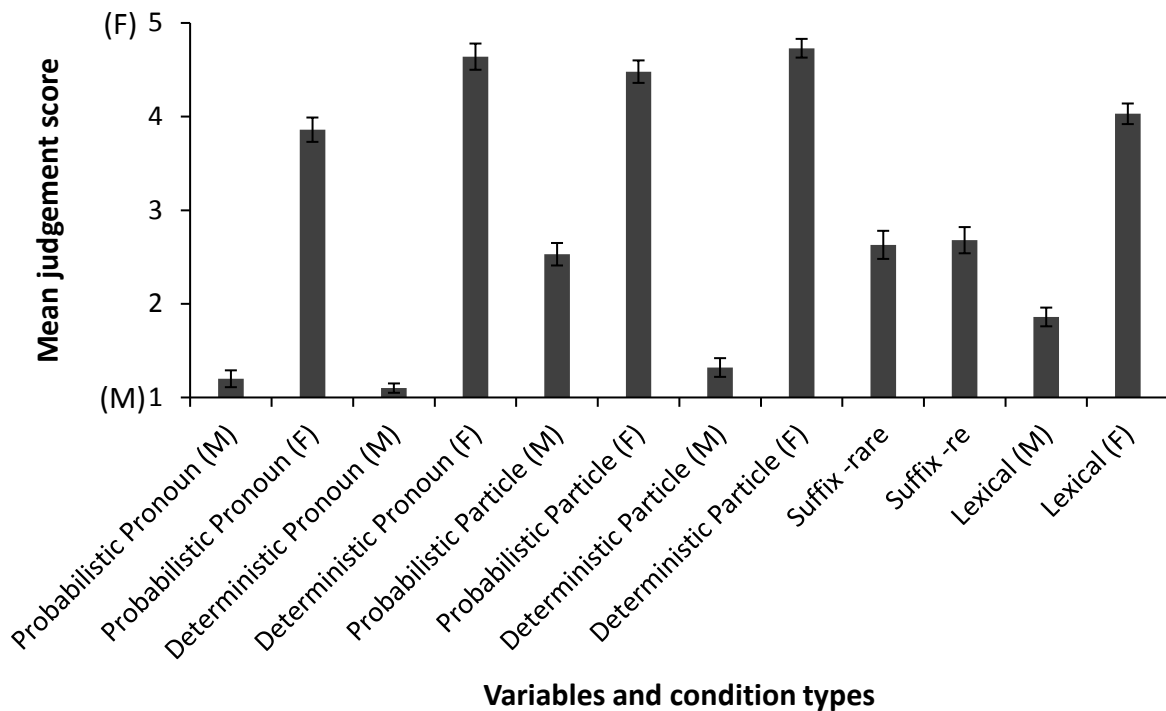
Figure 2-1. Experiment 2-1: Mean judgement score by condition.
Judgement scores ranged from 1 – Male (M) to 5 – Female (F). Error
bars represent 95% Confidence Intervals.

Figure 2-1 shows the mean adjective scale, with maleness represented by lower numbers and

femaleness represented by higher numbers. The mean responses are presented by condition,

including the subgroups of the PRONOUN and SENTENCE FINAL PARTICLE conditions. Higher

scores indicate that participants judged the sentences as more likely to have been said by a

female speaker, and lower scores show that participants thought that the sentence was more

likely to have been said by a male. A score of 3 would suggest that participants do not associate

the respective variable with the social category of gender. The items in the DETERMINISTIC

subgroups for both the PRONOUN condition and the SENTENCE FINAL PARTICLE condition were

clearly identified as more likely said by a male or female speaker. This is also consistent for

the PROBABILISTIC subgroups for both the PRONOUN condition and the SENTENCE FINAL

PARTICLE conditions and the LEXICAL condition. However, the difference is smaller for the PROBABILISTIC subgroups and the LEXICAL condition. An ordinal logistic regression analysis was conducted to determine whether the judgement scores differed significantly for the ambiguity factor (deterministic vs. probabilistic) and condition type (pronoun, particle, lexical or suffix). However, neither the ambiguity of the variable was a significant predictor in the model, coefficient estimate Exp(B) = 0.839, p = 0.664, log likelihood test $\chi^2(1)$ = 0.189, p = 0.664; nor the condition type, coefficient estimate Exp(B) = 0.867, p = 0.348, log likelihood test $\chi^2(1)$ = 0.882, p = 0.348.

While there was no significant difference between the factors of ambiguity and condition, the differences of the PRONOUN, SENTENCE FINAL PARTICLE and LEXICAL conditions were far stronger than in the RANUKI condition. Surprisingly, no difference was observed for mean judgements of long form, -rare (2.63), and short form items, -re (2.68). This was despite the significant gender effects reported in both the corpus study results and the self-report results. Specifically, the corpus results (Sano, 2009, 2011) showed a higher distribution of ra-deletion among females (females = 9.5% of ra-deletion in the overall use of potential suffixes; males = 5.1; the self-reports (Sherwood, 2015) on the other hand showed a higher frequency of ra-deletion in males (males = 44% of ra-deletion in the overall use of potential suffixes; females = 27.4%). To understand this discrepancy between the current result and those of previous studies, the result of the current study was further investigated by examining the distribution of responses.

To examine whether the overall speech community was not sensitive to the gender effect, or if there were some individuals who interpreted ra-deletion as indicative of a female or male speaker, a gender score was created by subtracting the participant's mean -re score from their mean -rare score. Positive gender scores indicated that the participant judged -re items as more

likely said by males, whereas negative gender scores suggested the participant judged the *-re* items as more likely said by females.
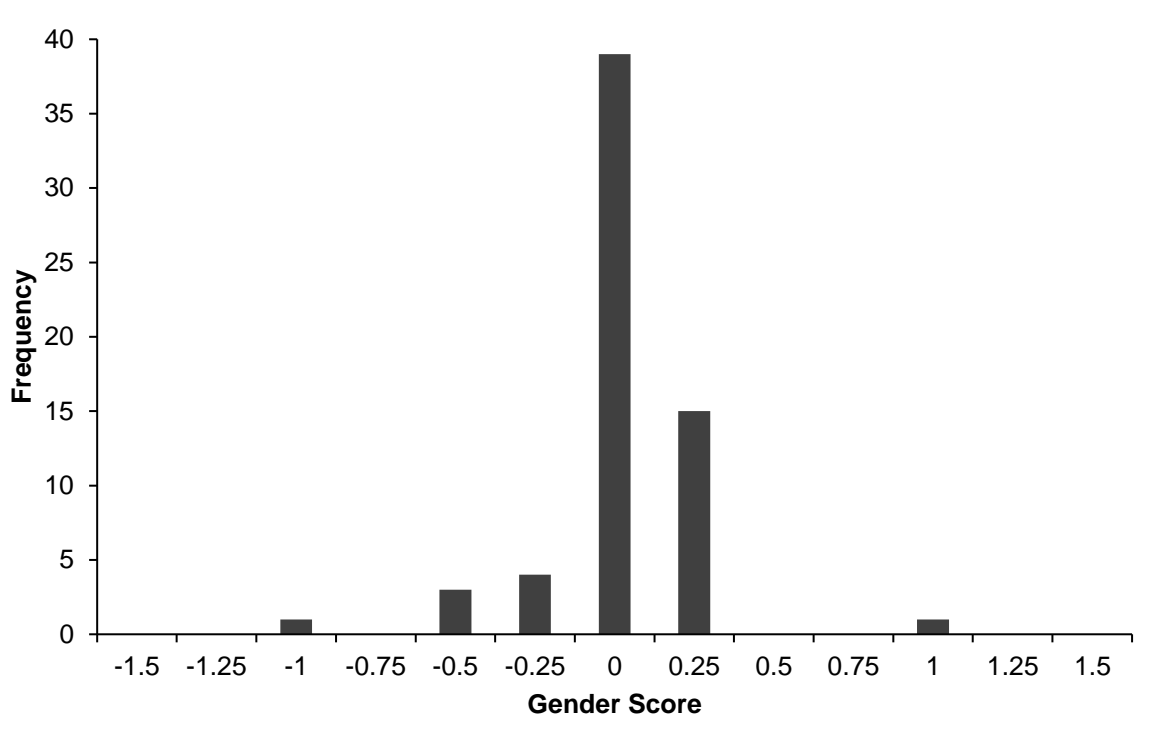
Figure 2-2. Experiment 2-1: Distribution of participants' gender scores. Positive gender scores indicate the participant judged ra-deletion sentences as more likely said by a male speaker.

Figure 2-2 shows the frequency distribution of the gender scores for each participant. The majority of gender scores clustered around the mean gender score (-0.05), indicative of a normal unimodal distribution. This suggests that the majority of participants were unable to identify the gender of a speaker by the potential suffix allomorphs alone. There were, however, individuals who used potential suffix allomorphs to identify the gender of the speaker. Four participants had a negative gender score that was less than one standard deviation below the mean (<-0.6). And one participant had a positive gender score that was greater than one standard deviation above the mean. Table 2 provides the demographic breakdown for each of these participants. There were no conclusive patterns to suggest an underlying reason that

might explain why these particular individuals were sensitive to an effect of gender on *ra*-deletion.

Gender Score	Age	Gender	Life Stage	Birthplace	Raised in	Occupation
-0.7	18-25	Male	Student	Tokyo	Tokyo	
-0.7	18-25	Female	Student	Miyagi	Miyagi	
-0.6	46-55	Female	Worker	Osaka	Osaka	School administration
-1.2	36-45	Female	Worker	Tokyo	Tokyo	Salaryman
0.8	46-55	Female	Worker	Kanagawa	Tokyo	Housewife

Table 2-2. Experiment 2-1: Qualitative analysis of participants with a gender score greater than and less than one standard deviation from the mean.

2.3.3. Experiment 2-1 Discussion

In line with the predictions formed on the basis of the process of indexicalisation and exemplar-based models, Japanese participants successfully identified the gender of a speaker through the use of linguistic variables which have been previously shown to correlate with the social category of gender. Specifically, the participants were able to judge pronoun and sentence-final particles which have been shown to correlate with the gender of the speaker. The participants were also able to do this with lexical items that evoked a particular gender. However, despite the significant effect of gender on *ra*-deletion distribution found in both the corpus studies (Matsuda, 1993; Sano, 2009, 2011) and in self-reports (Sherwood, 2015), the participants were unable to judge the gender of the speaker from the use of *ra*-deletion. This result suggests that the correlation between gender and *ra*-deletion observed in production data is not present in perception. Specifically, it does not appear to be the case that Japanese native speakers are able to identify the gender of a speaker through potential suffix allomorphs and, by extension, may not be able to infer the gender of the speaker as social information on the variable.

One possible explanation for the present findings is that responses for the *ra*-deletion items could be a type-two error, whereby the methodological procedure, the adjective scale, failed to detect a gender effect. This possibility is based on the findings of previous research which demonstrated that Japanese participants more frequently report difficulty with adjective scales, and more frequently select the midpoint of the scale (Lee et al., 2002). We consider this explanation unlikely because use of adjective scales was sufficiently sensitive to detect a significant result for the other variable conditions: the PRONOUN, SENTENCE FINAL PARTICLE and LEXICAL conditions. Furthermore, we replicated the experiment in a new sample population but replaced the adjective response scale with forced-choice binary options as part of an independent study, which explores the task effect in sociolinguistic studies. The results were not different from the adjective scale version of Experiment 2-1, and again, we found a very small difference in the mean judgement scores for long form items, *-rare* (1.30)*,* and short form items, *-re* (1.34). While this small difference was in the same direction as the adjective scale version of Experiment 2-1 and the corpus study results (i.e., short form items were more likely judged as being said by a female speaker), the difference did not reach statistical significance.

Another possible explanation for the case of *ra*-deletion items lies with the activation of the category in perception. Linguistic variables have been shown to index multiple social meanings which are perceivable by individuals. Recall that previous research has shown that the perception of variables can be affected by social information about the speaker (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). Using photographs to manipulate the perceived socioeconomic status and age of speakers in a perception experiment, Hay and colleagues (2006) found that participants' accuracy at identifying distinct tokens of the diphthongs depended on the social characteristics of the person in the photograph. Moreover, Pharao et al. (2014) found that these meanings can be activated or changed depending on context. They had listeners perform an evaluation task

in the format of a matched guise study in which they judged the phonetic variant [s] in different prosodic contexts. Results showed that [s] indexes femininity and gayness when it occurs in 'modern Copenhagen,' whereas the (s)-variation has a different and less significant effect when occurring in 'street language.' Another study conducted by Smyth and colleagues (2003) found a similar result. They found that men speaking in formal contexts were more likely to be perceived as feminine/gay than when speaking in informal contexts.

The importance of context is also addressed within a usage-based perspective. Bybee (2010, p. 55), noted that while meaning is always situated in context, our experience with the physical world is neither uniform nor flat, resulting in potential variations with how people come to perceive and care about certain parts of the temporal domain above others. The situational context of an utterance, contrastively to the context regarding knowledge of the speaker, may influence the relationship between the variable and a social category in perception, and this may explain the variance in category perception. That is, certain languages, individuals and speech communities may be more sensitive to the importance of a given category compared to another, affecting the identification of that category. Interactions between semantic meanings and pragmatic meanings may also play a role in the perception of socially-indexed meaning. This is not to say that there is no uniformity across speakers, which is a surprising phenomenon in itself. Frequency of occurrence can also significantly influence categorisation in language (Bybee, 2010, p. 84). Exemplars are built up through experience, suggesting that the more frequent an utterance occurs with a category, the more likely the relationship will be identifiable by listeners and accessed for production by speakers. This may have an effect if the distribution of a variable correlating with a social category is more prominent in a particular speech context, such as between friends in a social environment and employees in a workplace environment. Correlations between a social category and a linguistic variable may therefore require a situational context in order to be identifiable.

Therefore, if social information, specifically the situational context of the utterance, is important in successful identification, it could offer an explanation as to why the gender of the speaker was not identifiable for *ra*-deletion items. In addition, it could be the case for the previous studies examining evaluations of socially-indexed meaning on linguistic variables that the situational context required activation before the social categories could be judged. The role of situational context in the activation of associations between linguistic variables and social categories was examined in Experiment 2-2.

2.4. Experiment 2-2

Experiment 2-2 tested the hypothesis that some categories that correlate with linguistic variables require activation from a relevant situational contextual category to be perceivable by individuals. We investigated whether Japanese individuals were able to identify the gender of a speaker from their production of linguistic variables. To examine this question, we conducted a perception study that was based on Experiment 2-1 with methodological revisions to include contextual information about the utterances.

2.4.1. Experiment 2 Methods

A total of 47 native Japanese participants (18 male, 29 female) took part in this experiment, with an age range of 18 to 65 years at the time of testing (see Table 2-3). Again, the participants were recruited through word of mouth, email and social-networking sites, including Facebook and Twitter. They had grown up in comparable prefectures to participants in Experiment 2-1, including Tokyo, Saitama and Yamaguchi. 21 participants were students at the time of testing, and 25 were employees.

Participant gender	18-25	26-35	36-45	46-55	56-65	Total
Males	7	8	0	1	2	18
Females	11	13	3	1	1	29

Table 2-3. Experiment 2-2: The number of participants according to age and gender.

The design and stimuli of Experiment 2-2 were identical to Experiment 2-1, with a few key differences in order to examine the role of situational context in the association between linguistic variables and social categories. Firstly, the participants were informed that the sentences being presented were collected from conversations in a workplace environment. Secondly, pictures were used to evoke the notion of the workplace to further communicate the workplace context of the sentences in line with the design used in Hay et al. (2006). The motivation for selecting the workplace as the situational context comes from the interaction between gender and formality in Japanese. Recall Ide's (1982) findings from her work on politeness and women's language in Japanese discussed above. Variation was shown to exist between men's and women's speech in the case of politeness. The situational context of the workplace presents an opportunity to activate this interaction, and, potentially, individuals' awareness of associations that may exist between variables and gender. In the first section of the survey, the task again was to judge if the presented sentence was more likely said by a male or a female speaker. The participants were instructed to use a five-point adjective scale to indicate if the sentence was more likely said by a male (1) or female (5). Two pictures of potential speakers appeared on either side of the scale. One picture was of a male office worker in a black and white suit, and the other was of a female office worker in a black and white suit. The participants were asked to select which person was more likely to have said the sentence in question.

2.4.2. Experiment 2-2 Results

Figure 2-3 compares the results for both Experiment 2-1 (no-context) and Experiment 2-2 (context). The higher mean judgement scores indicate that participants judged the sentences as more likely said by a female speaker, while lower mean judgement scores are more likely judged by the participants as being said by a male speaker.
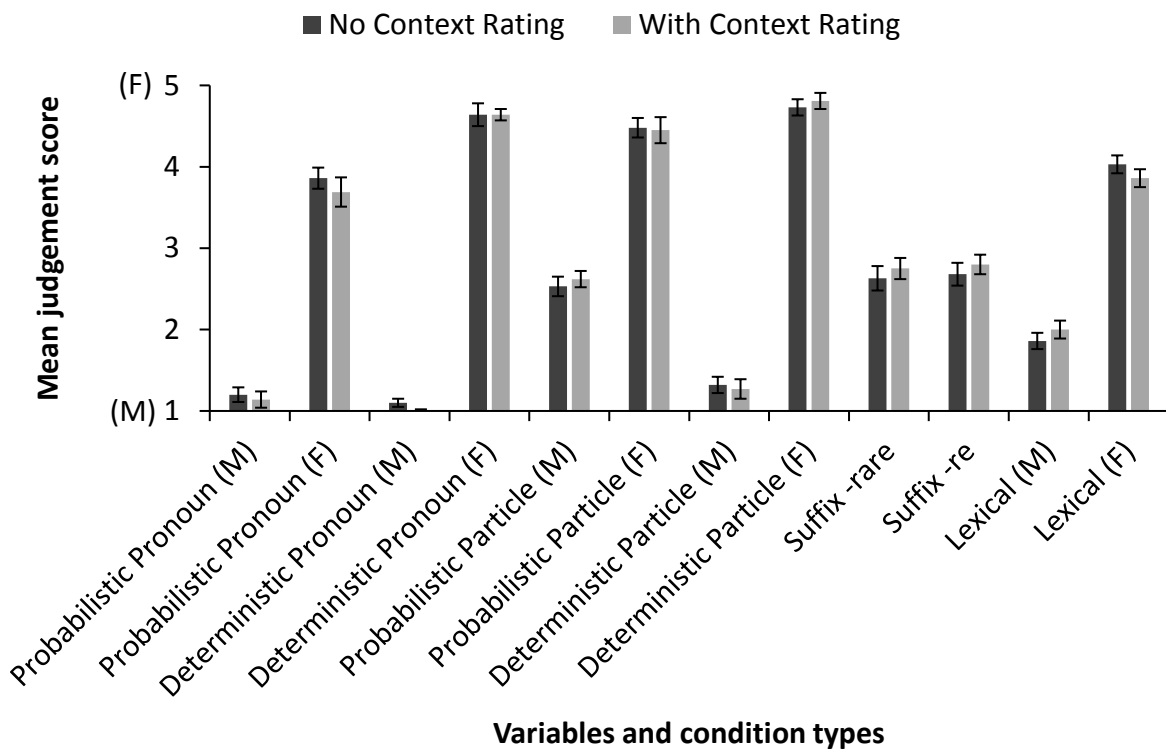
Figure 2-3. Experiment 2-2: Mean judgement score by condition with no-context and context. Judgement scores ranged from 1 – Male (M) to 5 – Female (F). Error bars represent 95% Confidence Intervals.

As shown in Figure 2-3, the overall pattern was similar across the no-context and with-context rating conditions (dark grey and light grey bars were similar across the 12 variables). The results of the PRONOUN, SENTENCE FINAL PARTICLE and LEXICAL conditions are consistent with the pattern observed in Experiment 2-1. The items in the DETERMINISTIC subgroups for

both the PRONOUN condition and the SENTENCE FINAL PARTICLE condition were again identified as more likely to have been said by a male or female speaker, respectively. The pattern was also observed for the PROBABILISTIC subgroups for both the PRONOUN condition and the SENTENCE FINAL PARTICLE conditions and the LEXICAL condition. The difference was smaller for the PROBABILISTIC subgroups and the LEXICAL condition, but clearly demonstrated that the participants registered a difference according to the gender of the speaker. However, there was again no significant difference between the RANUKI conditions, -*rare* and -*re*.

To test these possibilities, mean judgement scores were analysed with a $2 \times (12)$ ANOVA, with the between-subjects factor of context group (context vs. no-context) and the within-subjects factor of variable (PROBABILISTIC Pronoun (M) vs. PROBABILISTIC Pronoun (F) vs. DETERMINISTIC Pronoun (M) vs. DETERMINISTIC Pronoun (F) vs. PROBABILISTIC Particle (M) vs. PROBABILISTIC Particle (F) vs. DETERMINISTIC Particle (M) vs. DETERMINISTIC Particle (F) vs. Suffix -rare vs. Suffix -re vs. Lexical (M) vs. Lexical (F)). The normality assumption was violated for some variables which were moderately skewed. However, ANOVA is robust to such violations (Carifio & Perla, 2007). Thus, following the recommendations of Brown and Forsythe (1974), we employed Levene's test of equality of variances that used the median, which showed, crucially, that the homogeneity of variance assumption was met, as was the homogeneity of covariance assumption (nonsignificant Box's M). The results revealed no significant difference between the context and no-context groups, $F(1, 108) = 0.094$, $p = .759$, $\eta_p^2 = 0.001$, as shown in Table 4. There was a significant main effect of variable, $F(11, 1188) = 1114.56$, $p < .001$, $\eta_p^2 = 0.912$, and a significant Context Group $\times$ Variable interaction, $F(11, 1188) = 1.855$, $p = .041$, $\eta_p^2 = 0.017$. We examined the interaction via a series of orthogonal planned comparisons, employing an adjusted alpha of .025 (Bird, 2004). Providing a workplace context did however affect judgements of gender for *ra*-deletion. In a work context, -*re* is less gendered; that is, the short form is less likely to trigger a maleness judgment when it is used in

the workplace $t(1,108) = 1.278$, $p = .012$. None of the other comparisons reached significance, $p > .025$, and all are reported in Table 2-4.

Variable	Type	No Context Rating	With Context Rating	$t(1, 108)$	p
Probabilistic Pronoun (M)	Pronoun	1.20	1.14	-1.034	.153
Probabilistic Pronoun (F)	Pronoun	3.86	3.69	-1.789	.868
Deterministic Pronoun (M)	Pronoun	1.10	1.01	-0.833	.284
Deterministic Pronoun (F)	Pronoun	4.64	4.68	-0.584	.296
Probabilistic Particle (M)	Particle	2.53	2.62	1.239	.566
Probabilistic Particle (F)	Particle	4.48	4.45	-0.403	.489
Deterministic Particle (M)	Particle	1.32	1.27	-0.475	.555
Deterministic Particle (F)	Particle	4.73	4.81	1.190	.116
Suffix -*rare*	Suffix	2.63	2.75	1.243	.050
Suffix -*re*	Suffix	2.68	2.80	1.278	.012
Lexical (M)	Lexical	1.86	2.00	1.801	.181
Lexical (F)	Lexical	4.03	3.86	-1.990	.660

Table 2-4. Experiment 2-2: Differences between context and no-context mean judgement scores for each of the conditions.

2.4.3. Experiment 2-2 Discussion

The comparisons between the context and no-context experiments suggest that, at least for this paradigm, knowledge of the situational context of a speaker's choice of linguistic variable does not affect Japanese individuals' judgements of the speaker's gender. The only exception to this finding was for the case of *ra*-deletion. It is possible that in the case of *ra*-deletion, knowledge of the situational context weakens the slight maleness judgement in favour of another socially indexed meaning, such as social status as previously found in Sherwood (2015). The significant effect of situational context for *ra*-deletion items suggests that a relationship exists between the workplace and *ra*-deletion, but not one that is explicitly ties to context, as suggested by the lack of difference across other conditions.

Ultimately, the results of Experiment 2-2 suggest that the hypothesis that categories that correlate with linguistic variables require activation from a relevant situational context to be

identifiable by listeners is false. Specifically, the participants' judgements of the speakers' gender for all variables remained unchanged between the context and no context conditions. There must therefore be another explanation for the mismatch between the correlation of *ra*-deletion and the gender of the speaker in production and the lack of this association in perception.

2.5. General Discussion

In two experiments, we investigated the awareness of speaker gender as conveyed by linguistic variables that have with a skewed distribution across gender in naturalistic speech. We found that for variables overtly linked to Japanese Women's Speech, pronouns and sentence-final particles, the participants were able to identify gender from these variables. The participants were however unable to do so for potential suffix allomorphs, even though there is a significant gender-based distributional skew in production. Additionally, situating the sentences within a specific speech context had no significant effect on individuals' judgements.

The fact that the situational context largely did not affect participant judgements in this study does not indicate that context as a whole doesn't play a role in the evaluation of social meaning more generally. Previous work which has investigated the role of both speaker context and situational context has shown that context does have a significant place in understanding social meaning, particularly with regards to listener knowledge regarding the speaker (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). However, the role of situational context could be specific to the language or the variables being studied. We expected that for this study the PROBABILISTIC particles and pronouns would be affected by the given context of the workplace. The presence of the first-person singular pronoun *watashi* as a polite form in men's speech, and a plain form in women's speech is a key example. We expected that knowledge of the utterance taking place

in a workplace environment would suggest to individuals that the variable was used in a more formal context and would therefore be more ambiguous and less likely to be spoken by a female in the context condition. The difference in means (no context, 3.86; context, 3.69) did trend with our expectations, but it was not statistically significant in our sample size. Previous research which has examined *ra*-deletion and the contextual category of social status (Sherwood, 2015), found that individuals were able to judge the social status of a speaker's interlocutor by the use of potential verb suffix allomorphs alone. Specifically, individuals use the short form, *-re*, to identify the interlocutor as having a close social distance to a speaker. When a long form is heard, individuals judge that the interlocutor has a larger social distance with the speaker, such as a superior. We can conclude two points from this finding. Firstly, *ra*-deletion does index social status as social meaning, and secondly, politeness and formality are significant within a Japanese workplace environment. The slight maleness judgement for *ra*-deletion in the current study when the workplace context is provided could be an interaction with social status, but further study is needed to explore potential indexical relationships between potential co-present social categories that are tied to the speaker and those tied to the situational context, with particular emphasis on situations pertaining to Japanese workplaces.

Of the many social categories which have been investigated in the field of sociolinguistics, the socially constructed category of gender frequently yields mismatches between correlations in production and perception. There is no denying that the category is significant culturally, specifically in Japanese culture. Gender has been claimed to be as impactful to the constructions of identity as the dimensions of region and age (Podesva and Kajino, 2014). This claim and the results of numerous studies across a wide variety of speech communities demarcates that there are a wide variety of linguistic resources that potentially convey speaker gender. However, it is also a category with a high number of mismatches between production and perception based studies (e.g., Baugh, 1979; Campbell-Kibler, 2007;

G. R. Guy and Boyd, 1990; Kirtley, 2011; Labov, 1972; Plichta and Preston, 2005; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969). These mismatches across studies was one of our primary motivations for examining a social category within a speech community where the category was highly overt; such as the case in Japanese. From the results of this study, we can clearly find evidence to support the notion that linguistic variables and social categories carry a certain salience with speaker listeners. Japanese pronouns and sentence final particle variables have a significant association with the social category of gender, and this association is identifiable by individuals in isolation. *Ra*-deletion on the other hand patterns according to gender in the speech community, but the association with gender is not salient to community members. It seems possible then that *ra*-deletion which has been found to not index gender as social meaning may be part of a correlation that is formed in production out of habit, rather than for the use of identity construction. As such, it may be that other variables are being used to index the social meaning of gender, or other stylistic systems, such as clothing and non-verbal communication (Eckert, 2008; Mendoza-Denton, 2014), rather than the variables that show a correlation with gender in production. As such, *ra*-deletion may be more of a "supportive" variable rather than a "defining" variable for the purpose of identity, persona and stance construction, particularly in the case of gender.

Whatever the specific reason behind only certain variables indexing gender, the focus on examining social meaning through perception-based research methods highlights a significant issue with inferring social meaning through production study findings. The results of the current study show that variables which are stereotyped in the speech community as being attributed to male or female speech convey social meaning. Contrastively, other variables which are nonetheless skewed across gender lines in production may not convey similar social meaning. We cannot therefore assume the claim that correlations in practice reflect the recruitment of variables for the communication of social meaning. Furthermore, we cannot

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assume that individuals are capable of drawing upon exemplar clouds for the perception of social meaning. Rather, the beliefs of the individual may be the underlying force that drives the perception of social meaning. Individuals may weigh variables and social categories on a scale similar to Labov's (1972b) model of social salience. A variety of studies in the area of social psychology have demonstrated that individuals draw on pre-existing beliefs and attitudes about social categories when making judgements about an interlocutor (Higgins & Bargh, 1987; Levon, 2014; Macrae & Bodenhausen, 2001). We consequently can benefit from a combination of production- and perception-based methods to better understand social meaning and its role in constructing identities, stances and personas. The results of production studies can lead us to identifying potential social meanings, and perception studies will allow us to test if these social categories are identifiable and may therefore be recruited for the purpose of identity construction.

2.6. Conclusion

The results of this study show that Japanese individuals can identify the gender of a speaker through socially indexed meaning attributed to some linguistic variables. The examined pronouns and sentence final particles were shown to have a strong association with the social category of gender, suggesting both the variables and the category have a significant weight in the speech community. However, we have shown that correlations in production between gender and a specific form are not enough to indicate social meaning; nor is information about the situational context, the speech environment, of the variable sufficient to activate this supposed relationship in perception. The successful identification of social meaning appears to be contingent upon the beliefs of the individuals, that is, whether the relationship between variable and the social category is salient in the speech community. Identifying this association is not achievable by production studies alone, but by a combination of both production and

perception studies. In this way, we can identify possible social meanings and ascertain which are identifiable, and by extension, are available for identity construction.

Chapter 3: Individuals' alignment and the awareness of social meaning: age, gender and yeah-no in Australian English[3]

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[3] At the time of thesis submission, a version of this chapter was submitted for peer review to *Language in Society*.

Abstract

The stratification of linguistic forms is suggested to reflect individuals' recruitment of variables for the purpose of conveying socially-indexed meaning. Studies have provided evidence to suggest that the awareness and association of socially-indexed meaning is mediated by individuals' beliefs (Kleinschmidt, 2016; Levon, 2014). This study examined how the awareness of socially-indexed meaning is mediated by individuals' alignment to a variable. Specifically, we investigated perceptions of gender and age for individuals who both identify and do not identify as speakers of the stereotyped discourse marker *yeah-no* in Australian English. We found that *yeah-no* directly indexed age, but gender was only significant for individuals who did not identify as *yeah-no* users. The results indicated that overt judgements of social meaning are contingent upon an individual's alignment to a variable. Furthermore, the findings provide supportive evidence for self-report techniques in the investigation of social meaning.

3.1. Introduction

Sociolinguistic research has always sought to understand the relationship between linguistic variables and social categories. The correlation between the two in speech production is suggested to reflect individuals' recruitment of variables for the purpose of conveying meaning that has been indexed onto the form. Studies have provided evidence to suggest that individuals' beliefs play a role in the awareness and association of these socially-indexed meanings (Kleinschmidt, 2016; Levon, 2014). In the current study, we examined how the awareness of socially-indexed meaning is mediated by individuals' alignment to such beliefs. Specifically, we investigated awareness of gender and age for speaker-listeners who both identify and do not identify as speakers of the stereotyped discourse marker *yeah-no* in Australian English. Our aim was to explore the role of speaker-listener alignment in the awareness of social meaning

in order to contribute to the broad and valuable body of research which examines speaker-listeners' awareness and control of sociolinguistic variants.

Research into the association between linguistic variables and social categories, both broad demographic categories such as age, gender and socioeconomic status (Labov 1966; Trudgill 1974; Wolfram 1969), as well as local, participant-designed categories, such as the adolescent groups "jocks" and "burn-outs" in Eckert's (2000) examination of a Michigan high school in Detroit (additionally, L. Milroy, 1980; Rickford, 1986), suggests that the correlation between the two reflects speakers' recruitment of linguistic variables for the purpose of communicating social meaning. Such a practice is achievable through the process of indexicalisation (Eckert, 2008; Silverstein, 1976, 2003), where meaning is indexed through the correlation between a sign and the signified in space and time. Through this process, variables are capable of indexing additional meanings, further to context-free, semantic meaning, or first order meanings, leading to an indexical field, which constitutes a constellation of ideologically related meanings. Indexicalisation is also analogous to exemplar-based accounts of learning. An influential theory in psychology for decades (Eagly et al., 1994; Haddock et al., 1993; Nosofsky, 1988), and more recently the field of linguistic enquiry (Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002), the process of indexicalisation assumes that individual speech utterances are aggregated in memory as exemplar representations that contain rich linguistic and non-linguistic information. This aggregation results in a mapping of relevant social categories pertaining to the speaker to each exemplar (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999), which has been demonstrated to be activated during both the production and perception of speech (Hay, Nolan, & Drager, 2006; Johnson, 1997; Lozito & Mulligan, 2010; Pierrehumbert, 2001). Thus, according to exemplar-based models, speakers are able to produce

forms which index correlating social categories and show awareness of the social categories that are indexed onto the representations as social meaning.

Regional dialect labelling experiments are one line of sociolinguistic research which demonstrates listeners' awareness of correlating social categories that are indexed onto variables as social meaning (Baker et al., 2009; Cramer, 2010; Fuchs, 2015; Kirtley, 2011; Purnell et al., 1999; Suárez-Budenbender, 2009). Clopper and Pisoni (2004) examined Indiana College students' ability to accurately categorise six North American regional dialects. The findings showed that listeners were able to reliably categorise the speakers into broad dialect clusters but showed more difficulty categorising speakers into smaller regions. Interestingly, the linguistic experience of the listener played a vital role in their categorisation accuracy. Those who had lived in at least three different states were more accurate than those who had only lived in Indiana. Speakers who had lived in a given region also categorised speakers from that region more accurately than speakers who had not lived there. This additional finding suggests that listener experience is an important factor in correctly identifying a speaker's region based on linguistic variables, and consequently, the finding is in congruence with the expectations of exemplar-based models.

Social evaluation studies have also provided evidence to show that listeners have awareness of socially indexed meanings. Campbell-Kibler's research (2007, 2008, 2011) comprises of a series of seminal studies that examined the effects of the sociolinguistic variable (ING) (e.g., *walkin'* vs. *walking*) on listeners' attitudes about speakers. Results showed that listeners' evaluations of the speaker varied according to the realisation of the final nasals in (ING). Guises which employed the use of the alveolar nasal (*-in*) were judged as more casual and less educated/intelligent, while guises who used the velar nasal (*-ing*) were judged as sounding more formal and more educated/intelligent. Specifically, however, the results differed from previous studies which examined the social stratification of (ING). Studies had

found that in addition to the associated social categories identified in Campbell-Kibler's research, the social categories of gender, socioeconomic status, dialect, age and race were also shown to correlate with (ING) (Fischer, 1958; Labov, 1966; Shopen, 1978; Shuy, Wolfram, & Riley, 1968; Trudgill, 1974). The asymmetry between the systematic stratification of linguistic variables and social categories and listener awareness of socially indexed information has also been identified for other linguistic variables including *t/d* deletion in English (Baugh, 1979; Campbell-Kibler, 2006a; G. R. Guy & Boyd, 1990; W. Labov, 1972c; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969); quotative and focuser *like* (Buchstaller, 2006; Dailey-O'Cain, 2000), fundamental frequency (Kirtley, 2011; Linville, 1998; Smyth et al., 2003), and /*ay*/ monophthongisation (Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008).

The apparent mismatch between speakers' production of linguistic variables and listeners' awareness of social meaning has been discussed in light of the variables' context, such as, the listener's attitudes towards the speaker, and/or the associated stereotypes of the speaker's demographics. Exemplar-based models with social indexing predict that listener evaluations of linguistic variables will be biased as a result of contextual factors (Drager & Kirtley, 2016). In the example above, Campbell-Kibler (2008) explored context as a factor that affected listener evaluations. Elizabeth, a speaker from California, was judged by listeners as a 'dynamic' and 'energetic' person, irrespective of her realisation of (ING). The socially indexed meaning of informality of the (ING) variable was interpreted differently across listeners depending on whether the listeners' evaluations of Elizabeth were positive or negative. Listeners who were inclined to dislike Elizabeth interpreted her production of alveolar nasal (*-in*) as condescending, while those who were inclined to like Elizabeth interpreted the variable as compassionate. The social meaning of the alveolar variable of (ING) was therefore found to be contextually dependent upon the existing beliefs and attitudes pertaining to Elizabeth. Listener perceptions of speech have also been shown to vary according to the social information provided about a

speaker (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). In Hay and Drager (2010), New Zealand English speakers were exposed to either stuffed toys associated with Australia (kangaroos and koalas) or toys associated with New Zealand (stuffed kiwis) during a vowel perception task. Participants shifted their perception of vowels according to which set of toys they were exposed to, that is, participants responded with more Australian-like vowels when they were in the Australian "kangaroo" condition. The a priori beliefs of the listener, that is, the stereotypes the listener has formed pertaining to their attitudes towards other individuals, therefore play a significant role in listener evaluations of socially indexed meaning.

Pre-existing beliefs themselves are often tied to stereotypes. Levon (2014) examined the extent to which stereotyped attitudes and beliefs about groups of speakers influenced listeners' evaluative judgements. Using a modified matched-guise paradigm, listener reactions to intersecting categories of sexuality, gender and social class were analysed in accordance with three linguistic variables which had previously been shown to correlate with the categories of interest. Specifically, sibilance, mean pitch, and TH-fronting. While 'competence' and 'likeability' were consistently signalled across the listener population by pitch and TH-fronting respectively, the indexical relationship between pitch/sibilance and perceived gender/sexuality was shown to be mediated by individual listener attitudes. Listeners who endorsed normative stereotypes of masculinity and male gender roles used pitch and sibilance as salient cues which signalled 'nonmasculinity' and 'gayness'. On the other hand, listeners who did not identify with these stereotypes showed no effect for pitch and sibilance.

Variables themselves are also known to be stereotyped. Labov (1972b) proposed a model of social salience which delineates three types of linguistic variables along a hierarchy demarcated by speakers' awareness of the variables' existence. The first level consists of indicators, which show no level of social awareness and are therefore difficult to detect for

both linguists and native speakers. Markers consist of socially stigmatised forms that are characterised by sharp social stratification across groups and styles. The highest level of social awareness for variables is the stereotype category. Stereotyped forms display both social and stylistic stratification and are subject to explicit meta-commentary due to their overt level of social awareness in the speech community. Given that listener beliefs have been demonstrated to have a profound impact on evaluative judgements, it should come as no surprise then that the association between linguistic variables and social categories can be mediated by both attitudinal and cognitive factors.

Returning to Levon (2014), the attitudinal and cognitive factors were in reference to listener endorsement of normative stereotypes pertaining to male gender roles. Endorsement was measured with the Male Role Attitudes Survey (MRAS) (Pleck et al., 1993), a standard psychological instrument which measures the extent of listener agreements with normative statements that correspond to male gender norms. Although useful for uncovering the attitudes of the listeners, the MRAS has limitations. As noted by the author, it is possible that the MRAS elicits a response bias which captures listener willingness to label a speaker according to male gender norms rather than capturing attitudes to masculine stereotypes. This effect, coined the social desirability bias, is a form of response bias whereby respondents show a tendency to answer questions in a manner that will be viewed favourably by others. Edwards (1953) demonstrated this effect by examining the relationship between the probability of endorsement of personality trait items and the social desirability of the item. The results showed that the probability of endorsement of an item increased with its judged desirability. Similar effects have also been demonstrated in the domain of linguistics. Labov (1966c) found that New York speakers showed a tendency to report higher usage of standardised forms than their actual usage. The opposite effect was observed by Trudgill (1972), whereby Norwich men reported higher use of non-standardised forms than their actual usage. The apparent mismatch between

speakers' perceived and actual usage is measured as linguistic insecurity (W. Labov, 1966c, 1981). Labov (1966c) claimed that linguistic insecurity leads to hypercorrection in speakers towards perceived correct forms. This is contrary to Trudgill's result and thus it seems that speakers who have a high degree of linguistic insecurity hypercorrect towards what is deemed socially desirable, whether they be perceived correct or incorrect by the speech community.

Despite the fact that self-reports have yielded interesting results pertaining to speaker-listener judgements, they are a highly stigmatised tool in linguistic research. Researchers often cite the risks of using self-reports as they do not reflect natural language in use, as demonstrated by the studies above (W. Labov, 1966c; Trudgill, 1972). However, when examining an individual's awareness of socially indexed meaning, self-reports offer a unique insight into how individuals align themselves to normative stereotypes. If a speaker-listener has high degree of linguistic insecurity to a variable, they may be more sensitive to the variable's socially indexed meaning, compared to speaker-listeners who have low degree of linguistic insecurity. That is, they may be more likely to show awareness of a variable's socially-indexed meaning due to their sensitivity to the variable in the speech community. Such an effect would build upon research which suggests the association between linguistic variables and social categories can be mediated by both attitudinal and cognitive factors, such as the speaker's normative endorsements and beliefs. Furthermore, individual alignment may offer an account for cases where expected meanings are not perceived by listeners, whether they are, or are not, activated by the speech context. The current study, therefore, examined speaker-listener awareness of social categories that are predicted to be indexed onto a stereotyped linguistic variable as social meaning, and investigated whether speaker-listeners' alignment to the variable mediates the success of their evaluations.

3.2. Age, Gender and *yeah-no*

In order to probe the role of speaker-listener alignment in the evaluations of socially-indexed meaning, the design of the current study required a few key restrictions to accurately test our hypothesis. The first relates to the linguistic variable in the study. Successful direct elicitation of a speaker-listener's alignment to the variable in question requires that the variable be salient in the community, either as a *stereotype* or a *marker* in terms of social salience. The highly marked stereotyped discourse marker in Australian English, *yeah-no*, was therefore chosen as our variable for study. The second restriction of the study is in regard to the social categories in question. While it is well known that linguistic variables are capable of indexing multiple social categories, which are in essence complex, dynamic and contextually dependent, it is this very nature which led to the constraint of restricting the analysis to just two potentially indexed meanings of the Australian English discourse marker: age and gender. The focus of the study was to examine the role of speaker-listener alignment rather than the subtle nuances of the variable in question. We thus emphasise that the design and methods chosen reflect the scope of the research aim and encourage future research to further unpack this line of enquiry by examining *yeah-no*, and other variables, with regard to styles and their indexical fields.

In variationist research of social meaning, continuous variation in the phonetic realisation of vowel allophones are found to be the most employed resource for speakers' communication of social identities (Eckert & Labov, 2017). There are, of course, many studies which examine different levels of linguistic variables and their association with social meaning; for example, quotatives (Buchstaller, 2006; Dailey-O'Cain, 2000), intensifiers (Bauer & Bauer, 2002; Stenström et al., 2002; Stenström, 1999; Tagliamonte, 2005), and discourse markers (Andersen, 2001; Erman, 1997, 2001; Macaulay, 2002; Tagliamonte, 2005). Such a disparity between the number of studies which examine phonetic variation and other levels of linguistic variation, encourages researchers to examine variables in underrepresented domains. Thus, this paper

examines an understudied discourse marker in an understudied dialect of English sociolinguistics; namely, the discourse marker *yeah-no* in Australian English. *Yeah-no* has received very little attention in research, but has acquired a highly salient reputation in the speech community as "speech junk" (Campbell, 2004), a "verbal crutch - an epidemic from which no strata of society is immune" ("Slang's 'yeah No' Debate Not All Negative," 2004), and has even been the punchline of a recent road safety campaign (Kelly, 2018). In recent research, *yeah-no* has been shown to serve a number of functions in speech, including discourse cohesion, the pragmatic functions of hedging and face-saving, and assent and dissent(Burridge & Florey, 2002). Employing a corpus analysis of formal conversation and interviews, the authors analysed the interaction between intonation and turn taking, and the use of *yeah-no* by topic, conversational genre, and age and gender of speaker. The stratification of results demonstrated a higher frequency for speakers between the ages of 18-49 years of age to use *yeah-no* (25% of speakers produced the variable), with a slight preference for the 35-49 age range (25.6%) compared to the 18-34 range (23.5%). Moore's (2007) study followed up this preliminary investigation with another corpus analysis which included data from radio and television broadcasts, the Australian International Corpus of English (ICE-AUS) corpus, and the Monash University Australian English Corpus (MUAE Corpus). The results were in line with Burridge and Florey (2002) in terms of the social category of age. A higher frequency of *yeah-no* cases was found in the speech of individuals aged between 18 and 39. Unlike Burridge and Florey, Moore found a higher frequency among male speakers, 85% of tokens were produced by males, compared to female speakers. No other social categories have been investigated in relation to *yeah-no* at this time, but both Burridge and Florey and Moore speculate a socioeconomic and style stratification. Hence, we restrict our focus to the social categories of age and gender in the current study.

Age, in addition to correlating with *yeah-no*, has been a staple social category in sociolinguistic research. Up until the late 1990s, however, age was considered the principle correlate of language change and was not considered as a social category in the investigation of sociolinguistic variation (Eckert, 1997). Studies which have since investigated the role of age in the social stratification of linguistic variables found that there are strong correlations with sociolinguistic variables. Sound change and slang terms have been among the most frequently studied (Bucholtz, 2001; Cheshire, 1982; Eble, 1996; Eckert, 1988; T. Labov, 1992), with research extending the scope of age related research into a wider range of features including quotatives *go* and *like* (Macaulay, 2001; Tagliamonte & D'Arcy, 2004), intensifiers (Bauer & Bauer, 2002; Stenström et al., 2002; Stenström, 1999; Tagliamonte, 2005) and discourse markers (Andersen, 2001; Erman, 1997, 2001; Macaulay, 2002; Tagliamonte, 2005). Barbieri (2008) investigated age as a correlating factor by performing a word analysis on a large corpus of casual conversation in American English. Younger speakers' speech showed a high frequency of slang and swear words, with marked usage of features including intensifiers, stance adverbs, discourse markers and personal pronouns. Adult speech, on the other hand, showed a higher frequency of modals compared to younger speakers. While far fewer in number, age has also been explored in evaluation studies. Listeners have been shown to judge the age of speakers according to the linguistic variables used in their speech (Buchstaller, 2006; Dailey-O'Cain, 2000; Walker, 2007). In Buchstaller (2006) the results of a matched guise test and a social attitudes survey revealed that the quotatives *be like* and *go* were associated with younger speakers. The association between age and linguistic variables in both the production of speech and in speech evaluations fit the expectation of exemplar-based models and the process of indexicalisation. That is, speakers are able to produce and perceive variables which index the correlating social category of age as social meaning.

Gender as a social category has also been widely researched in the domain of sociolinguistics. It is important to note here that the social category of gender is a constructed ideology that depends on perception and differs from that of sex which is a biological category. Claimed to be as impactful to the constructions of identity as the dimensions of region and age (Podesva & Kajino, 2014), gender abstracts over a range of globally and locally constructed speaker-listener practices (Eckert & Labov, 2017). In one of the foundational studies to examine gender stratification in production, Fischer (1958) found that girls consistently used more of the perceived standard form of the (ING) variable [ɪŋ] than boys, a pattern that was later discussed by Labov (2001) as a preference for women to use more standard varieties than men. In addition to prestige, a number of sociolinguistic variables have been studied in connection with gender. For example, the Northern Cities Chain Shift (Eckert, 1989b), high rising terminals in Australian English (G. Guy et al., 1986) and in New Zealand English (Britain, 1992), and glottal stops in British English (J. Milroy et al., 1994). Gender has also been studied in other languages within a sociolinguistic framework. Some examples include phonological, morphological and lexical differences between male and female speakers of Koasati (Haas, 1944), monophthongs and diphthongs in the speech of Tunis women (Trabelsi, 1991), and patterns of non-palatised [l] in Crete (Mansfield & Trudgill, 1994). Similarly to age, gender has also been examined in evaluations. In addition to Levon (2014), above, a number of studies have examined listeners' evaluative judgements of speech with reference to gender (Clopper et al., 2006; Levon, 2007; Smyth et al., 2003; Squires, 2011). Smyth, Jacobs and Rodgers (2003) examined listener judgements pertaining to gender for varying discourse types and associated stylistic features. The results showed a main effect of discourse type, where more formal speaking styles were judged as more homosexual sounding, which had an interaction with the speaker's sexual orientation. That is, straight speakers were judged to be more homosexual sounding when reading the scientific passage. The category of gender can,

as with age, be found as a correlate in the production of linguistic variables, as well as a socially-indexed meaning that is identifiable from exposure to the variable in speech.

The current study examined the role of speaker-listener alignment in the awareness of socially-indexed meaning. In two evaluation experiments, we investigated speaker-listeners' awareness of the Australian English discourse marker *yeah-no* and their self-reported use as either a user of the variable or a non-user. Given the variable's marked status in the speech community, we expected speaker-listeners to be both aware of the variable and show linguistic insecurity towards using the variable in their own speech. This linguistic insecurity will be used to determine if the subject identifies as a user of *yeah-no* or a non-user. The result will be compared with evaluative judgements of the variable's socially indexed meanings, age and gender, to determine if alignment plays a role in the awareness of social meaning. Experiment 3-1 examined whether speaker-listeners are aware of age as a socially indexed meaning on *yeah-no* and the factor of speaker-listener alignment. Experiment 3-2 replicated Experiment 3-1 but examined the social category of gender as opposed to age. If speaker-listeners show a difference in their evaluations of the socially indexed meaning with regards to their alignment with the linguistic variable, it would suggest that alignment is a contributing factor to the attitudinal and cognitive factors that mediate the awareness of socially indexed meaning.

3.3. **Experiment 3-1: *Yeah-no* and Life-stage.**

Experiment 3-1 in this study was designed to determine if there is an effect of age, specifically, life-stage, on speaker-listeners' judgements of speakers who use the discourse marker yeah-no. Further to the analysis of age as a continuous variable, discussed above, the format by which the category is studied has also been examined in the literature. Age as a category can be represented along a scale of continuous apparent time, but there are normative hallmarks that can be divided into life stages to represent individuals' progress through time (Eckert, 2018).

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Community studies (Macaulay, 1977; Wolfram, 1969) found evidence to suggest a divide between preadolescents and adolescent age groups in the stratification of linguistic variables. Variationists have also examined the significance of life stages with regards to linguistic variation (Eckert, 1988; W. Labov, 1972a). Wolfram, specifically, found that the adolescent age group (14-17 years) in the study demonstrated stratification for fewer variables than both the preadolescent group (10-12 years) and the adult group. Furthermore, Burridge and Florey (2002) showed that yeah-no use varied across age brackets within the speech of adults; namely, 18-34, 35-49, 50+. Life stage thus offers an interpretive lens that can be lost in a continuous analysis, and hence is the format used in this current study. We examined if speaker-listeners judge speakers who use yeah-no as more likely to be students or employees. Given that younger speakers have a tendency to use yeah-no more often than older speakers (Moore, 2007), and that age plays an overall factor in the social stratification of yeah-no (Burridge & Florey, 2002), we expect that speaker-listeners will judge utterances of yeah-no as more likely to be said by a speaker with a younger rather than older life-stage; that is, speakers who are students. To investigate the role of alignment address, we conducted an online study that included an evaluation task and a self-report questionnaire to elicit whether the subject identified as a yeah-no user or a non-yeah-no user.

3.3.1. Experiment 3-1 Methods

The participants were recruited primarily through word of mouth and online networking sites, such as Facebook and Twitter. A total of 65 native Australian English participants (32 male, 33 female) took part in this experiment, with an age range of 18 to over 75 years at the time of testing (see Table 1). An additional 15 participants completed the study but were not included in the analysis. 14 were excluded as non-native Australian English speakers. The other speaker was excluded as a non-serious attempt, where all answers, including the controls, were

answered as neutral. 18 participants were students at the time of testing, and 47 volunteered that they were employees.

	18-25	26-35	36-45	46-55	56-65	66-75	75+	Total
Males	12	8	3	2	3	3	1	32
Females	13	3	7	5	5	0	0	33

Table 3-1. Experiment 3-1: The number of participants according to age and gender.

The stimuli included in the evaluation task consisted of a set of 120 sentences comprising three different condition types; YEAH-NO, LEXICAL CONTROL and FILLER. The complete list of sentences appears in Appendix C and E. The YEAH-NO condition was designed to examine if participants varied in their judgement between the linguistic variables *yeah-no* and *yeah*. The LEXICAL CONTROL condition tested if participants were able to use the adjective scale correctly, as the distinction between the two levels was overt through the use of lexical choices. The FILLER condition contained sentences that did not include the discourse markers being tested or the lexical items in the control condition, but rather, contained various lexical and semantic items to distract the participant from the YEAH-NO condition items. This was done to achieve the most natural response possible for the YEAH-NO stimuli.

20 sentences were used in the YEAH-NO condition and were identical apart from the sentence initial discourse marker (10 sentences x 2 variations [*yeah-no*, *yeah*]). The sentences were all positive with the variable in initial position and proceeded by content indicative of responding to an interlocutor in order to be consistent with previous *yeah-no* literature (Burridge & Florey, 2002; Erin Moore, 2007). For example, "Yeah no, they'll love it" was one of the variations from the 10 *yeah-no* sentences. 20 sentences made up the LEXICAL CONTROL condition and varied by one lexical choice that evoked the concept of life-stage (10 sentences

x 2 variations [student, employee]). An example of one of the pairs used as stimuli was "I have to go to class tomorrow" for student and "I have to go to work tomorrow" for employee. The LEXICAL CONTROL condition also aided in guiding the participant towards making a distinction between the two life-stages which can involve some overlap; that is, students could be participating in part-time employment, and employees could be undertaking study by correspondence. The remaining 80 sentences made up the FILLER condition. All stimuli items were checked by three native speakers to confirm the sentences reflected natural speech and were grammatically correct.

The participants performed the tasks in the format of an online survey administered by Qualtrics online survey software. All instructions, materials and stimuli were presented in English. Participants were able to choose the device (computer or mobile device), location and time of day they wanted to perform the task. By providing these freedoms for the participants and removing an interviewer from the procedure, we hoped to avoid potentially eliciting socially desired responses as opposed to naturalistic data.

In the first section of the survey, the evaluation task, participants judged if the presented sentence was more likely said by a student or an employee using a five-point adjective scale; student (1) or employee (5). The odd number provided participants the opportunity to indicate a neutral judgement of the sentences, an option that would not be possible with a forced choice method. Each sentence was presented in written form to the participant one at a time in pseudo-random order. That is, stimulus items from the same condition type were not paired together. Written speech was used as opposed to audio recordings to ensure that participants made their judgements on the sentences alone, without the use of acoustic characteristics to inform their judgements. For example, vowel formant frequencies are lower, bandwidths are wider and the fundamental frequency is generally lower for male speakers (Peterson & Barney, 1952).

The second section of the online survey was a self-report task whereby participants were asked to select from one of four available options to respond to a speaker's question. The questions and responses are provided in Appendix F. There were ten questions in total and the four responses included four sentences that were identical apart from the sentence initial variable. The options included 1) discourse marker *yeah-no*, 2) *yeah*, 3) *no,* and 4) no sentence initial variable. The aim for this section was to identify if the participant was someone who identifies as a *yeah-no* speaker in order to test the role of alignment in the awareness of socially-indexed meaning.

The final section of the survey was designed to collect participants' demographic data including their age, gender, occupation, birthplace, where they grew up, and whether they were studying at a university. This information was collected in the third and final section of the survey to both allow participants to fully understand the task before asking them to provide their demographic information and avoid the possible effect of secondary cue.

3.3.2. Experiment 3-1 Results

3.3.2.1.   Mean judgement scores for discourse markers

Figure 3-1. Experiment 3-1: Mean judgement score by condition.
Judgement scores ranged from 1 – Student (S) to 5 – Employee (E).

Figure 3-1 shows the mean adjective scale judgement scores for the discourse markers; *yeah-no, yeah*. Higher mean judgement scores indicate that participants judged the sentences as more likely said by speaker whose life stage is an employee, while lower mean judgement scores are more likely judged by the participants as a speaker whose life stage is a student. A score of 3 would suggest that participants do not associate the respective variable with the social category of age. Overall, *yeah-no* sentences were judged as more likely said by a student (2.29) compared to *yeah* sentences which were closer to no difference between life-stages (2.65). A Mann-Whitney U Test was conducted to assess the statistical reliability of the differences

shown in Figure 1. The test indicated that the dependent measure of mean judgement scores was greater for the *yeah* condition (*Mdn* = 2.3) than for the *yeah-no* condition (*Mdn* = 2.9), *U* = 522.5, *p* = < 0.05, η^2 = 0.099. This confirms our hypothesis that speaker-listeners can use the discourse marker *yeah-no* to identify the life-stage of the interlocutor.

3.3.2.2.   Mean judgement scores for discourse markers by self-reports

Recall that in the self-report section of the online study the participants were asked to select from one of four available options to respond to a speaker's question. The options included 1) discourse marker *yeah-no*, 2) *yeah*, 3) *no,* and 4) no sentence initial variable. We coded participants who selected *yeah-no* as a response to the speaker's questions as *yeah-no* users and those who did not choose *yeah-no* as non-*yeah-no* users. As discussed above, traditionally, self-reports run the risk of collecting unnatural reflections of speech, as the speaker can respond with their socially desired response, which may not reflect their actual usage. However, for this study, we were specifically interested in speaker-listeners' alignment, that is, whether they identified as a user of the discourse marker *yeah-no*, as well as their evaluations of marker's socially indexed meaning. In particular, we sought to investigate whether speaker-listeners' alignment to the variable mediates their evaluations. For this next analysis, we thus separated *yeah-no* users from non-*yeah-no* users to compare their mean judgement scores.
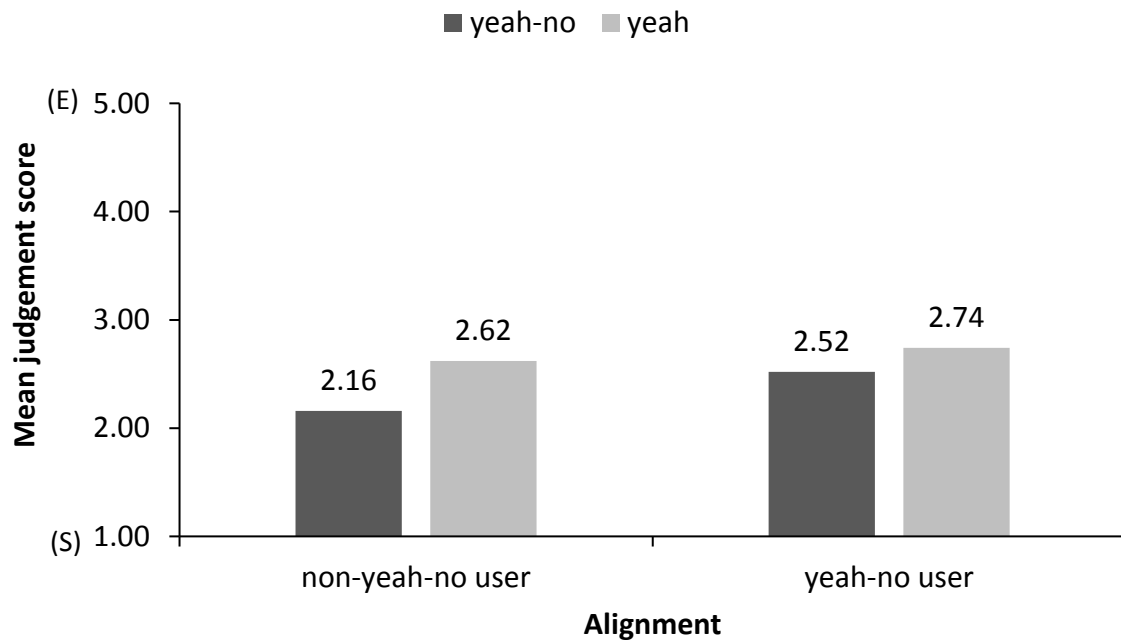
Figure 3-2. Experiment 3-1: Mean judgement scores for discourse markers by self-report identification. Judgement scores ranged from 1 – Student (S) to 5 – Employee (E).

The results presented in Figure 3-2 show the mean judgement scores for the discourse markers by the self-report status of the participants, *yeah-no* users and non-*yeah-no* users. For both groups, *yeah-no* sentences were judged as more likely said by a student, compared to *yeah* sentences. The difference between the mean judgements varied according to the group. For non-*yeah-no* users, the difference between the variables was 0.46 and was statistically significant ($U = 522.5$, $p = < 0.05$, $\eta^2 = 0.073$). The *yeah-no* users, on the other hand, had a 0.22 difference between the variables and the difference was not statistically significant ($U = 276.5$, $p = > 0.25$, $\eta^2 = 0.025$). These results show that the effect of form on speaker-listeners' judgements of *yeah-no* is only present for those who don't identify as *yeah-no* users. *Yeah-no* users, contrastively, only show a slight tendency to judge the variable as being more likely said by a student. Thus, the participants' alignment to the variable impacted their judgements of its

social meaning. The significance of these findings will be discussed in the Discussion. However, before doing so, we turn to the second experiment in this study which examines individuals' alignment to *yeah-no* in terms of their judgements of speaker gender.

3.4. Experiment 3-2: *Yeah-no* and Gender

Experiment 3-2 in this study is designed to determine if there is an effect of gender on speaker-listeners' judgements of speakers who use the discourse marker *yeah-no*, and if the participants' alignment to the variable plays a role in their evaluations. Specifically, we wish to examine if speaker-listeners' judge speakers who use *yeah-no* as more likely to be male or female and whether the participants' alignment mediates this judgement. Previous literature has been inconclusive as to whether there is an effect of speaker gender on *yeah-no* production. While Burridge and Florey (2002) reported that there was no difference between the gender of the speaker and the production of *yeah-no*, Moore (2007) found that there was an effect of speaker gender on *yeah-no* production. Specifically, males used *yeah-no* more frequently than females. We therefore expect to find that speaker-listeners judge utterances of *yeah-no* as more likely to be said by a male speaker, but that this effect size will be small. To test this hypothesis, we conducted an online study that was similar to Experiment 3-1 with minor revisions to test for the social category of gender.

3.4.1. Experiment 3-2 Methods

A total of 55 native Australian English participants (25 male, 30 female) took part in this experiment. The participants selected from the age brackets provided to disclose their age (see Table 2). 21 participants were students at the time of testing, and 34 volunteered that they were employees. Again, the participants were recruited primarily through word of mouth and online networking sites, such as Facebook and Twitter. An additional 12 participants completed the

study but were not included in the analysis. Eight were excluded as non-native Australian English speakers. The other four participants were excluded as non-serious attempts.

	18-25	26-35	36-45	46-55	56-65	66-75	Total
Males	12	7	4	1	1	0	26
Females	12	7	3	5	2	1	30

Table 3-2. Experiment 3-2: The number of participants according to age and gender.

The stimuli and design of Experiment 3-2 were identical to Experiment 3-1, with only a revision to one stimulus condition to examine the social category of gender rather than life-stage. The complete list of sentences appears in Appendices B and C. The YEAH-NO and FILLER conditions were identical, however, the LEXICAL CONTROL condition was revised to test the social category of gender on two levels, male and female (10 sentences x 2 variations [male, female]). An example of one of the stimulus pairs was "I'm working as a waiter" for male and "I'm working as a waitress" for female. The labels on the adjective scale were also amended to reflect this change, with the poles of the adjective scale labelled for male (1) and female (5).

3.4.2. Experiment 3-2 Results

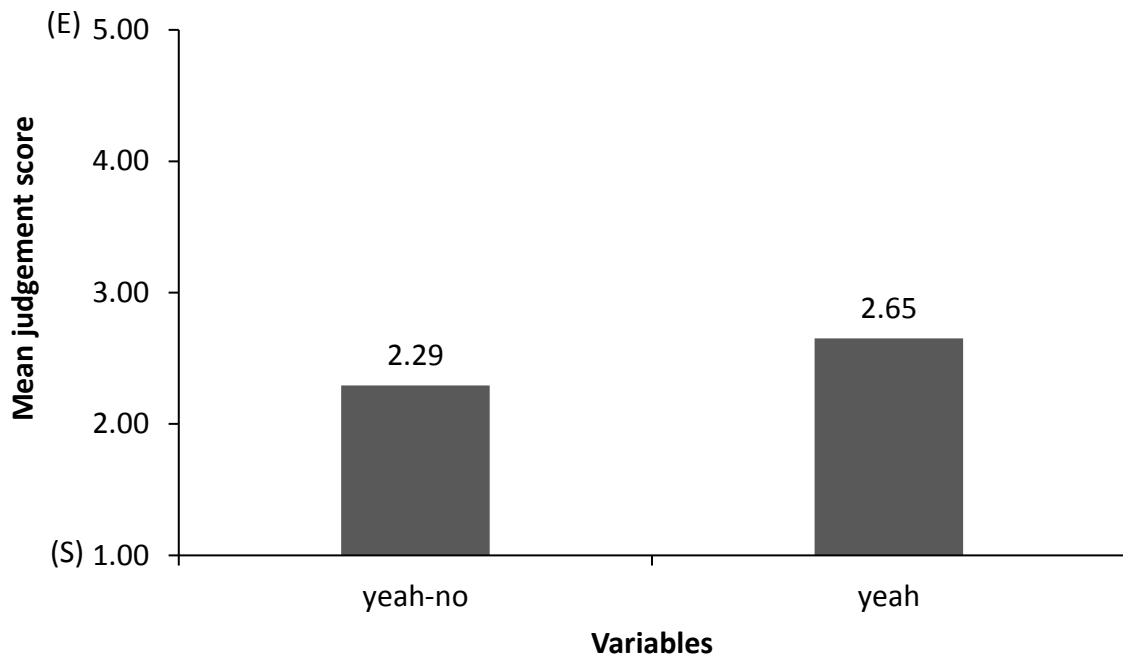#### 3.4.2.1.   *Mean judgement scores for discourse markers*
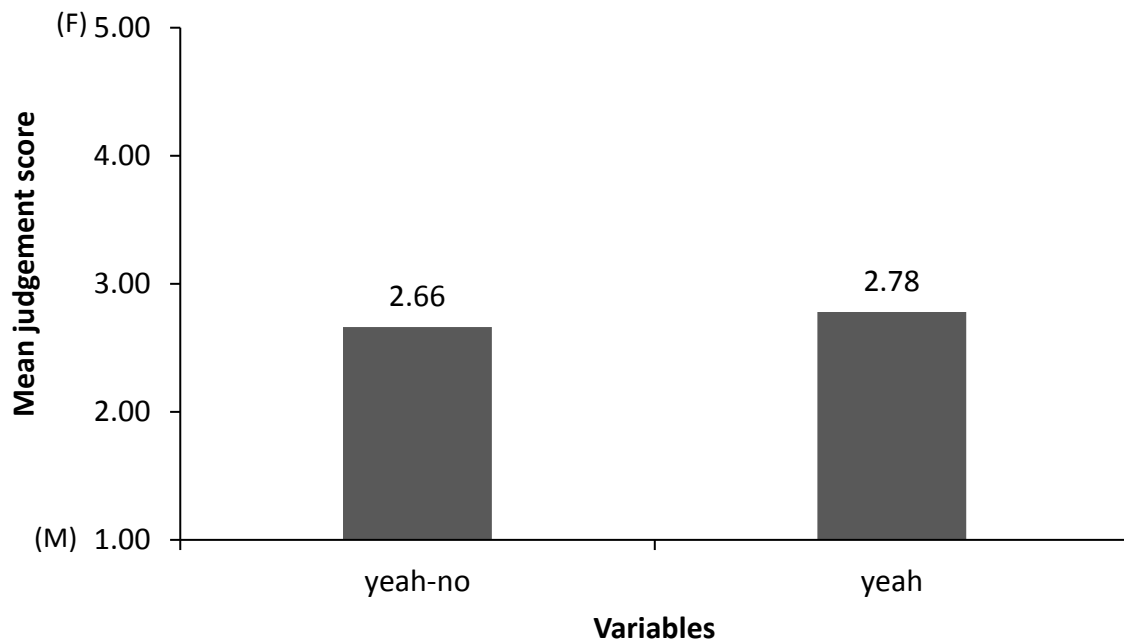
Figure 3-3. Experiment 3-2: Mean judgement score by condition.
Judgement scores ranged from 1 – Male (M) to 5 – Female (F).

Figure 3-3 shows the mean adjective scale judgement scores for the discourse markers; yeah-no, yeah. Higher mean judgement scores indicate that participants evaluated the sentences as more likely said by a female speaker. Yeah-no sentences were judged as slightly more likely to be said by a male speaker (2.66) compared to a yeah sentences which were closer to no difference between the gender of the speaker (2.78). Both means however are close to a neutral score of no difference between genders. This result reflects the findings in in Burridge and Florey (2002). That is, there was no overt difference in terms of speaker gender between the discourse markers, despite an effect of gender being found in Moore (2007). A Mann-Whitney

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U Test reflected the described observation, specifically, that there was no significant difference between the markers, *yeah-no* and *yeah*, ($U = 1291.5$, $p = > 0.1$, $\eta^2 = 0.016$).

3.4.2.2. *Mean judgement scores for discourse markers by self-reports*

We again separated *yeah-no* users from non-*yeah-no* users to compare mean judgement scores according to the participants' alignment.
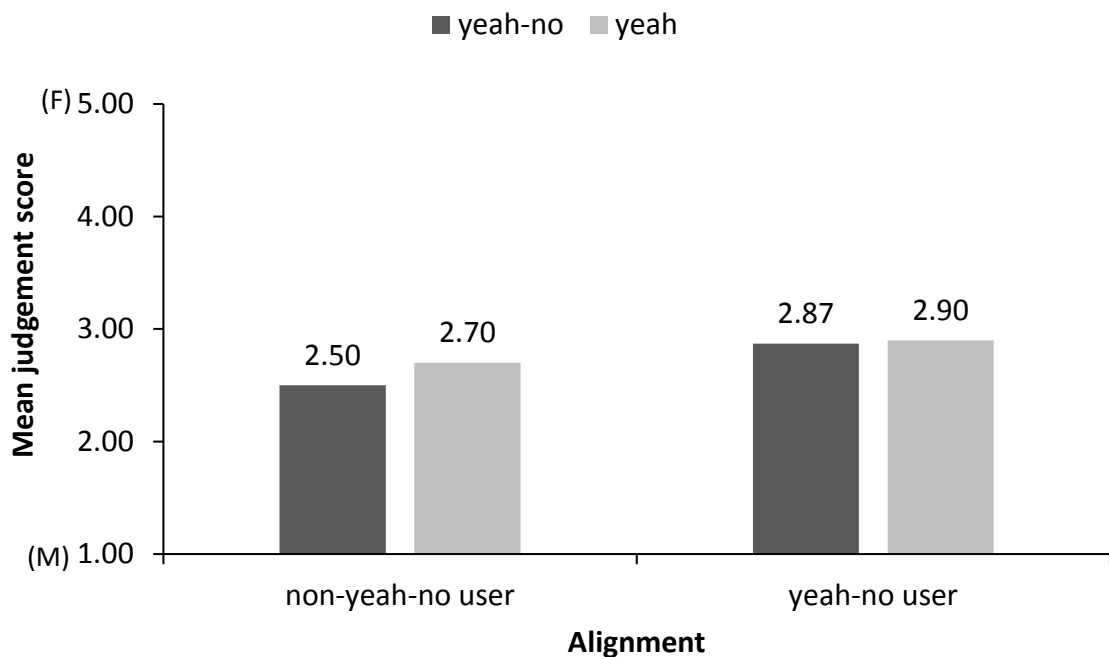
Figure 3-5. Experiment 3-2: Mean judgement scores for discourse markers by self-report identification. Judgement scores ranged from 1 – Male (M) to 5 – Female (F).

Figure 5 shows the mean judgement scores for the discourse markers by the self-report status of the participants, *yeah-no* users and non-*yeah-no* users. There is a very minor difference between the mean judgements of the *yeah-no* users (0.03), which is reflected in the non-significant result of a Mann-Whitney U Test ($U = 238.5$, $p = > 0.5$, $\eta^2 = 0.007$). The pattern was consistent for the non-*yeah-no* users ($U = 434.5$, $p = > 0.2$, $\eta^2 = 0.017$). For both user groups, the judgements were close to the neutral judgement of 3 on the adjective scale, which

represents no difference between forms when judging the gender of the speaker. The slight difference between the user groups suggests that speaker-listeners who do not identify speakers of *yeah-no* may still have a sensitivity to detect the social meaning of gender, however the sensitivity is very slight.

3.5. General Discussion

The results of both evaluation studies indicated that alignment plays a role in the awareness of socially indexed meaning. In Experiment 3-1, the Australian English discourse marker *yeah-no* was judged as more likely to be said by a student; a speaker with a younger life stage than an employee. This effect was strongest for those who did not identify as *yeah-no* users. The results were in line with the corpus studies previously conducted on the discourse marker (Burridge & Florey, 2002; Erin Moore, 2007), with the exception that the age effect in Burridge and Florey showed a higher frequency of use for the 35-49 age range. In Experiment 3-2, there was no overall effect of form, despite a higher frequency of variable use found in the speech of males by Moore (2007). The most interesting finding, however, was in regard to the participants' alignment. While no overall effect of form existed in the gender experiment, participants who identified as non-*yeah-no* users had a significant effect of form. Participants who did not select *yeah-no* in the self-report section judged *yeah-no* sentences as more likely to be said by a male. Thus, the converging evidence across experiments suggests that the alignment of the individual mediates evaluations of socially indexed meaning.

Our finding pertaining to the role of alignment offers an exciting contribution to the research surrounding social meaning. The existing literature examining the awareness of social meaning found that judgements were tied to the a priori beliefs of the listener. Specifically, stereotypes play a significant role in the evaluations of socially indexed categories. This was particularly evident in listener judgements in Campbell-Kibler's (2008) research into the

realisation of (ING), and Levon's (2014) work on listener reactions to intersecting categories of sexuality, gender and social class. Now, the results of the current study can further develop this line of research. We not only have evidence to support that an individual's attitudes towards a speech community mediate their judgements, as does their endorsement of normative stereotypes, but we can now demonstrate the significance of the individual's alignment. That is, the positioning of the individual through their speech choices towards a given community and variable is a factor which contributes to the awareness and control of social meaning. It appears that individuals who identify as part of a given speech community by either proudly, or naturally, volunteering their use of a given linguistic variable are less sensitive to the social meaning surrounding said variable. Those who do not identify as a user of a particular linguistic feature show a marked awareness of the form's socially indexed meanings. Furthermore, it is possible that these non-users are in fact users who have a high degree of linguistic insecurity. That is, the non-users may be reporting speech that is away from what they deem to be socially undesirable and this socially desired usage is enhancing their sensitivity to the linguistic variable and its correlating social meanings. Thus, an individual's alignment, as with their beliefs and endorsement of stereotypes, is a significant contributor to the cognitive factors which mediate the evaluations of social meaning.

Returning to the mismatches found between the production and evaluations of social meaning on linguistic variants, for the cases where listeners were unable, or simply were not aware of correlating social meanings for in the systematic stratification of linguistic variables, the apparent lack of association may be due to the listeners' alignment. For example, if the listeners identified as users of the alveolar form of the (ING) variant, they may not have been sensitive to the additional social meanings which were not perceived by listeners. Such as the social categories of gender, socioeconomic status, dialect, age and race that were also shown to correlate with (ING) (Fischer, 1958; Labov, 1966; Shopen, 1978; Shuy, Wolfram, & Riley,

1968; Trudgill, 1974). Similarly, if some listeners did show an effect, but were not significant as part of the statistical analysis of the population, this could be due to the listeners' linguistic insecurity towards the variant. The ratio of those who show a sensitivity may be smaller than that of the listeners who don't have a high linguistic security, but the effect was unable to be identified without examining individuals' alignment to the variable. Approaching this line of reasoning from an alternate angle, it is also possible that speakers who align with a variable do not create associations between the linguistic variants and social categories of their community. That is, their variable use is natural and automatic, compared to explicit learned, conscious language choices. Thus, users of a given variant may have implicit knowledge of speech patterns in their community but show no awareness as the relationship between the variant and its social categories is meaningless for the purpose of their communication.

An interesting point pertaining to the discourse marker *yeah-no* specifically, is the overt nature of the variable in the community. The variable is highly marked, if not stereotyped, and the media attention surrounding the variable suggests it is highly salient in the speech community. The variable's status in the community as "speech junk" and a "verbal crutch" could be considered as negative, certainly a vernacular speech variant, and would thus be expected to impact individuals' alignment. As discussed earlier, Labov's (1966c) study, whereby New York speakers showed a tendency to report higher usage of standardised forms than their actual usage, differed significantly to Trudgill's (1972) findings in the opposite direction which showed a tendency for speakers to report higher usage of non-standardised forms than their actual usage. Given the status of *yeah-no*, it appears that individuals are aligning in a similar way to Trudgill, suggesting that *yeah-no* has a non-standard social desirability bias. Future work comparing variables which have standard or positive connotations compared to vernacular or negative connotations would be a very interesting line of further enquiry for understanding the role of alignment. Additionally, since we expect

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stronger reactions regarding alignment to a variable that has a marked status in the community compared to variables which are considered to be indicators in a speech community, a study comparing variables with different levels of social salience is highly encouraged to further unpack the investigation of alignment with regards to the awareness and control of social meaning.

Further to the association between *yeah-no* and its correlating social meanings, we have found a production- and evaluation-based match between the stratification of *yeah-no* and the social category of age. For speakers who did not identify as users of *yeah-no* we also found a match between the stratification of *yeah-no* and the social category of gender. Both findings suggest that an association exists between the discourse marker and the social categories of age and gender, and this finding can be interpreted as the variable indexing the categories as social meaning. Given that age and gender are the only categories to have been investigated within a sociolinguistic framework on the discourse marker *yeah-no*, we encourage further investigation of the variable and other potentially relevant categories, especially since it has been demonstrated that variables are capable of indexing multiple social meanings. With respect to the Australian road safety campaign, which uses *yeah-no* as their punch line, the categories of region and socioeconomic status appear relevant. Both categories have been discussed in the research regarding Australian English, specifically, the divide between Australian English accents (Cox & Palethorpe, 2010; Harrington et al., 1997; Mitchell & Delbridge, 1965). Namely, the Broad Australian accent, which is the most marked Australian accent and correlates with male speakers, public school type, and country regions of Australia. The interaction between form and education found in Experiment 3-2 also suggests that education may be a relevant social category. As previously mentioned, since age and gender were the only known correlating social categories with *yeah-no* we were forced to make restrictions in our investigations to probe the role of alignment, we do however, advocate further examination

into *yeah-no* in the hopes of improving our understanding of the current study's results and, more broadly, our understanding of sociolinguistics in Australian English.

The final point we wish to raise relates to the incorporation of self-reports in the design. We noted that researchers often cite the risks of using self-reports in linguistic research, as they do not reflect natural language in use. We do not contest this; however, we can confirm from the results of this study that when examining an individual's awareness of socially indexed meaning, self-reports offer a unique insight into how individuals align themselves to normative stereotypes concerning speakers and variables. The results showed, through a combined method of evaluation tasks and self-reporting, that the alignment of the individual plays a role in the evaluation and awareness of social meaning. As such, our methodology builds upon research which has found that the association between linguistic variables and social categories can be mediated by both attitudinal and cognitive factors, such as the speaker's normative endorsements and beliefs. In future, a more robust examination of self-reports would aid to this line of research. The current study used an indirect self-report method to determine if an individual identified with a variable and its given speech community. Both direct and continuous investigations into individuals' alignment to a variable may offer finer grained and subtler nuances that could reveal more about how we perceive social meaning, and how we manipulate our speech for the purpose of communicating social meaning.

3.6. Conclusion

Following the findings in sociolinguistic research which provided evidence to suggest that individuals' beliefs play a role in the awareness and association of linguistic variables and social categories (Kleinschmidt, 2016; Levon, 2014), we sought to examine the role of speaker-listener alignment in the evaluations of meaning which is socially indexed. In two evaluation experiments, we investigated individuals' judgements of the Australian English discourse

marker *yeah-no* and their self-reported use as either a user of the variable or a non-user. The results of both experiments showed an effect of alignment. Specifically, while an effect of age was present for all participants, individuals who did not identify as a speaker of the discourse marker were more sensitive to both the socially indexed meanings of age and gender. Individual beliefs may therefore include not only endorsement of stereotypes, but also volunteered endorsement of the feature itself. This has important implications for the current direction of sociolinguistic research, as awareness and control of social meaning appears to be tied to attitudinal and cognitive factors pertaining to individuals' identities. As such, we strongly advocate the pursuit of this line of research and suggest the methodological techniques presented in the current study are used to serve as a springboard to further investigate to role of beliefs in the awareness of social meaning. Specifically, we recommend a combination of production, evaluation and, in particular, self-reports to tease apart the complexities surrounding the indexical nature of social meaning and the circular role of identity.

Chapter 4: Socially constructed beliefs override linguistic experience: politeness and gender in Japanese[4]

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Abstract

Human language is capable of conveying multiple levels of meaning between interlocutors. Socially relevant meaning is communicated through the association between linguistic forms and abstract social categories. Honorifics are one example, which involve the selection of suffixes to communicate status, difference or politeness. However, associations between forms and categories do not always align. This study investigated individuals' ability to override their linguistic experience with explicitly learned attitudes towards language and the social categories which characterise speakers. We examined the distribution and evaluation of Japanese addressee honorifics according to the social category of gender. Based on prior evidence, it was expected that females would make greater use of honorifics than males, reflecting the commonly held view that females are more polite; however, male speakers produced more honorifics than female speakers (Experiment 4-1). Individual evaluations, however, aligned with previous findings and the socially constructed norm; that addressee honorifics are more likely uttered by female speakers (Experiment 4-2). Our findings suggest that a mechanism exists by which speakers override their linguistic experience to reflect socially constructed beliefs about the distribution of forms in a speech community.

4.1. Introduction

Language variation is often socially meaningful. The correlation of linguistic forms with the social categories which characterise a speaker are claimed to reflect speakers' recruitment of the forms for the purpose of conveying social meaning. The extant view is that, based on prior experiences, listeners develop associations between forms and categories in memory (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999). These associations are then used in speech to convey social meaning and also serve as heuristic devices for listeners to evaluate relevant social information about their interlocutor. One such

example can be found in the distribution of the English variable (ING) (e.g., *walkin* vs. *walking*). Studies have shown that (ING) correlates, and thus is associated, with the social categories of gender, socioeconomic status, dialect, age and ethnicity (Fisher et al., 1986; W. Labov, 1966c; Shopen, 1978; Shuy et al., 1968; Trudgill, 1974). Social evaluation studies have shown that manipulating the realisation of the final nasals in (ING) influences listeners' judgments about the speaker (Campbell-Kibler, 2007, 2008, 2011). However, (ING), and many other linguistic forms at varying levels of description, have shown an asymmetry between correlations found in practice and those identifiable by individuals. The context of (ING) has been probed with regards to the mismatch (Pharao et al., 2014; Smyth et al., 2003), and more recently, studies have turned to examining the beliefs of the individual as a factor which mediate sociolinguistic evaluations (Kleinschmidt, 2016; Levon, 2014). While both lines of enquiry have yielded fruitful results, it is still unknown whether individuals possess a mechanism by which they can tune their sociolinguistic awareness of which people are likely to use which linguistic forms. Specifically, we do not know if individuals can override their linguistic experience with explicitly learned attitudes towards language and the social categories which characterise speakers. In the current study, we combined principles of cognitive psychology with those of theoretical linguistics to offer a novel solution. Specifically, we investigated a potential mechanism by examining the distribution and evaluation of Japanese addressee honorifics according to the social category of gender, to determine if a mismatch existed, and if so, whether the direction reflected the socially constructed norms of the speech community.

The ubiquitous nature of the association between linguistic forms and social categories suggests that individuals learn patterns of variation from exposure to the linguistic forms in their environment. Usage-based approaches of language learning offer an account for how the association between linguistic forms and social categories are established. Exemplar models assume that individual speech utterances are aggregated in memory as exemplar

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representations that contain rich linguistic and non-linguistic information (Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002). The formed aggregation results in a mapping of relevant social categories pertaining to the speaker to each exemplar (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999). Individual exemplars may be mapped to any number of social categories related to the background of the speaker or even the situational context, such as formality or politeness, and once an exemplar representation is stored in an individual's memory, it can be activated during both the production and perception of speech (Hay, Nolan, et al., 2006; Johnson, 1997; Lozito & Mulligan, 2010; Pierrehumbert, 2001). Thus, according to exemplar models, speakers are able to produce forms which index correlated social categories and perceive the social categories that are indexed onto the representations, constructing and inferring social meaning.

The process of indexicalisation is in line with usage-based accounts of language learning and has been directly explored in relation to sociolinguistic variation. In this process, indexicalisation occurs when meaning is indexed through the correlation between a signifier and the signified in space and time (Eckert, 2008; Silverstein, 1976, 2003). Linguistic forms are capable of indexing multiple meanings, leading to what Eckert (2008) describes as "a field of potential meanings — an *indexical field*, or constellation of ideologically related meanings, any one of which can be activated in the situated use of the variable." Using the (ING) example above, exposure to patterns of the perceived vernacular variant [n] would create a mental representation of the form and its associated social categories; namely, low intelligence and low education. A speaker could then use this feature as a stylistic device to create a particular social persona in their own speech. Consequently, we would then expect that individuals could also use the stored knowledge of the form to identify its associated traits in the speech of others. Alternative accounts have also been put forward to explain listeners' ability to identify

sociolinguistically relevant associations. The "sociolinguistic monitor" is a cognitive mechanism that has been proposed to be responsible for sociolinguistic perception (W. Labov et al., 2006, 2011). It is claimed to track, store and process socially salient quantitative linguistic distributions. Labov and colleagues argue that the sociolinguistic monitor is able to accommodate sociolinguistic information across large temporal windows, that it is highly sensitive, and that this sensitivity is nonlinear in nature. The concept of a sociolinguistic monitor is useful for providing an account of sociolinguistic perception, but it has fallen under scrutiny for not providing a detailed account of the monitor itself and how it differs from other, more general monitoring capabilities that could be called upon by listeners, and additionally, how the variants are identified by the monitor itself (Docherty & Foulkes, 2014).

Another alternative explanation is that of language regard (Preston, 2010, 2011, 2015). Preston proposes a processual model to account for how a listener moves from encountering a linguistic variant to producing a reaction to that variant in four steps; namely, *noticing, classifying, imbuing* and *reacting*. Crucially, the first two steps in Preston's model are dynamic in nature and contingent upon the salience of the variable. It is important to note that the notion of salience is a point of contention in sociolinguistics. For the purpose of this study, we consider salience as the relative ease with which a linguistic form is perceived by a listener (Levon & Fox, 2014). Salience in this case thus relates to the phonetic discreteness of the variable (Kerswill, 1985; Preston, 1996), its semantic transparency (Mufwene, 1991; Silverstein, 1981), its prosodic and pragmatic importance (Cheshire, 1996; Yaeger-Dror, 1993), and its distinctiveness in relation to a listener's native variety (Sibata, 2013). In the sociolinguistic literature, the ease with which a form is perceived by a listener has been discussed in terms of social salience. Labov (1972b) proposed a model of social salience which delineates three variable types, demarcated by speakers' awareness of their existence. The first level are indicators, which show zero degree of social awareness and are therefore difficult to detect for

both linguists and native speakers. Markers are usually socially stigmatised forms characterised by sharp social stratification across groups and styles. The highest level of social awareness for variables is the stereotype category. Stereotyped forms display both social and stylistic stratification and are subject to explicit meta-commentary due to their overt level of social awareness in the speech community.

The salience of a variable in the speech community is therefore crucial to the success of a listener's awareness of the form. That is, in a language regard sense, if the variable is non-salient, at indicator level, it will not be learned through the noticing and classification by the listener. The language regard model therefore struggles to account for variables that begin as indicators, below the level of social awareness and, over time, develop into salient linguistic forms that are sociolingustically relevant, such as markers or stereotypes. An example of this situation was documented for /aw/-monophthongisation which characterises "Pittsburghese" (Johnstone et al., 2006). The monophthongisation of /aw/ was originally, in 1910, not noticed at all, but over time it was used by speakers and heard primarily as a correlator to socioeconomic class. The variable was then linked to place and finally was "enregistered" as part of the "Pittsburghese" dialect. Thus, despite the variable's origin as an indicator, it must have been acquired by individuals in order to be developed into a sociolinguistic marker and then a stereotype. Given the pervasive spectrum of evidence across a broad range of linguistic domains (Foulkes, 2010), exemplar theories of memory offer a more robust account for individuals' ability to produce socially correlating linguistic variables and perceive the social categories which have been shown to be indexed upon the variable.

Regional dialect labelling experiments (Baker et al., 2009; Clopper & Pisoni, 2004; Cramer, 2010) and social evaluation studies (Campbell-Kibler, 2007, 2008, 2011; Dailey-O'Cain, 2000; Staum Casasanto, 2010) have provided evidence that demonstrates individuals' awareness of categories that have been indexed onto linguistic forms. Campbell-Kibler's

research (2007, 2008, 2011), mentioned above, examined the effects of the sociolinguistic variable (ING) on listeners' attitudes about speakers. Listener judgements were manipulated by the realisation of the final nasals in (ING). Speakers who used the alveolar nasal *-in* [n] were judged as more casual and less educated/intelligent, while speakers who used the velar nasal *-ing* [ŋ] sounded more formal and more educated/intelligent. These results, however, differed from previous studies which examined the correlation of the forms. The social categories of gender, socioeconomic status, dialect, age and race were also found to be correlates of (ING) (Fischer, 1958; Labov, 1966; Shopen, 1978; Shuy, Wolfram, and Riley, 1968; Trudgill, 1974), however, the listeners in Campbell-Kibler's studies did not judge the speakers according to these expected associations. Asymmetries such as (ING) in production and evaluations have also been identified for other linguistic variables, including *t/d* deletion in English (Baugh, 1979; Campbell-Kibler, 2006a; G. R. Guy & Boyd, 1990; W. Labov, 1972c; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969); quotative and focuser *like* (Buchstaller, 2006; Dailey-O'Cain, 2000), fundamental frequency (Kirtley 2011; Linville 1998; Smyth, Jacobs and Rogers 2003), and /*ay*/ monophthongisation (Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008). The mismatch between social stratifications in production and the social categories identifiable in evaluative studies raises a number of significant questions regarding the communication of social meaning. In particular, the asymmetry begs the question: how can listeners use sociolinguistic variation in communication, if the associations which form socially relevant meaning are largely variable?

Studies have probed a number of potential explanations for the mismatches. Listener attitudes towards speakers, and/or the associated stereotypes of the speaker's demographics provided a fruitful line of enquiry. The context of the utterance, particularly in regards to listeners' attitudes towards the speaker, explained some of the variance found between production- and evaluation-based findings (Campbell-Kibler, 2008; Pharao et al., 2014; Smyth

et al., 2003). Listener perceptions of speech have also been shown to vary according to the social information provided about a speaker (Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Hay & Drager, 2010; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). Both lines of inquiry suggest that the a priori beliefs of the listener, that is, the stereotypes the listener has formed pertaining to their attitudes towards other individuals, play a significant role in listener evaluations of socially indexed meaning. Levon (2014) examined the extent to which stereotyped attitudes and beliefs about groups of speakers influenced listeners' evaluative judgements. Using a modified matched-guise paradigm, listener reactions to intersecting categories of sexuality, gender and social class were analysed in accordance with three linguistic variables which had previously been shown to correlate with the categories of interest; namely, sibilance, mean pitch, and TH-fronting. Levon found that listeners who endorsed normative stereotypes of masculinity and male gender roles used pitch and sibilance as salient cues which signalled 'nonmasculinity' and 'gayness'. For listeners who did not identify with these stereotypes, they showed no effect for pitch and sibilance.

Given that stereotypes are argued to serve as resource-preserving devices to tackle the overwhelming nature of reality (Macrae et al., 1994), it comes as no surprise that their formation can be both implicit, acquired individually through inference, and explicit, as part of society's collective knowledge (Stangor & Schaller, 2000; White & White, 2006). Formation via inference largely aligns with usage-based models of learning, including exemplar models. Socialisation, on the other hand, takes a more overt approach where the stereotype is imparted explicitly, even if subtly, on the members of the community. Individuals' beliefs can be formed via both methods, and thus, these two methods of stereotype acquisition raise the following questions: are associations between linguistic forms and social categories susceptible to both implicit and explicit learning; and, if so, could explicitly learned associations mediate associations learned implicitly?

Implicit learning pertains to the acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations (N. C. Ellis, 1994). The process is a nonconscious and automatic abstraction of the linguistic form and its associated concepts from experience of instances. Experimental psychological work on implicit learning has demonstrated that learners automatically acquire knowledge of the underlying patterns of sequential dependencies through repeated experiences of sequential behaviour (Reber, 1976, 1993; Reber et al., 1980). Constructionist accounts of child language acquisition (Tomasello, 1998, 2003) have also found that language acquisition was essentially sequence learning and that learners' long-term knowledge of lexical sequences in formulaic phrases served as the database for the acquisition of language grammar (N. C. Ellis, 2014). Implicit learning is therefore largely synonymous with usage-based approaches to language learning, including exemplar-based models, and by extension, the process of indexicalisation. It thus shares the predicament of asymmetry found in sociolinguistic production and perception correlations of linguistic variables and social categories. Implicit learning has also been shown to have limitations in second language learning. Naturalistic second language acquisition is often far less successful than first language acquisition. Years of exposure to linguistic forms can often fail to be learned by listeners, particularly those forms considered to be low in salience (N. C. Ellis & Sagarra, 2010). Low frequency and low salience forms are often difficult for second language learners to perceive, analyse, and acquire, especially in rich discourse environments where there are other more salient forms which make the low frequency forms redundant. Furthermore, implicit learning also suffers from the fact that knowledge of sound patterns have both a lack of sensitivity to some conditional relationships attested in corpora (Becker et al., 2011) and hallucinations, whereby listeners perceive forms that are likely even in the absence of phonetic evidence (Davidson & Shaw, 2012; Dupoux et al., 1999; Wilson, 2016).

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Explicit learning, on the other hand, is a conscious operation where the individual is made aware of the form which is lacking in salience. The listener's knowledge is attained explicitly, through overt instruction, or when the learner searches for information pertaining to an inconsistency and then builds and tests hypotheses relating to that previously non-salient form. In cases where a linguistic form lacks perceptual salience and goes unnoticed by learners (Schmidt, 1990, 2001), explicit learning provides the additional attention necessary for the relation to be learned. In the case of sociolinguistic variables, a form lacking in salience, at indicator level, could be elevated to either marker or stereotype level through explicit learning. That is, if a linguistic form needs to be above the level of indicator in order for it to be noticed and classified for the purpose of imbuing and reacting, it may well be that the variable needs to be overtly addressed in order for individuals to use the variable and its associated social categories for social meaning and potential identity construction. To test the role of explicit, consciously taught relations in the association between linguistic variables and social categories, we need to examine a variable and social category that has strong perceptual salience in a speech community and determine if a mismatch is present in the association in production and that in evaluations. A mismatch would provide evidence for explicit learning by demonstrating a different distribution to one learned through implicit learning alone.

The social category of gender is pervasive across linguistic domains and speech communities, abstracting over a range of globally and locally constructed speaker-listener practices (Eckert & Labov, 2017). The category of gender differs to that of sex, in that it is a socially constructed ideology that depends on perception rather than a biological category. Researchers have claimed that gender is as impactful to the constructions of identity as the dimensions of region and age (Podesva & Kajino, 2014), and the association between the social category and linguistic forms that are considered to be standard forms are ubiquitous across and within speech communities (Eckert, 1989a; W. Labov, 1970; Trudgill, 1972).

Japanese is a key language of interest too, given the ideology that surrounds the social construct of gender. During the Meiji period (1868-1912), male intellectuals pushed the notion of the 'ideal' woman, leading to the construction of Japanese Women's Language (Inoue, 2002, 2004, 2006; Nakamura, 2008). Japanese polite expressions, in particular, are among the most studied features of Japanese Women's Language (Adachi, 2002; Farnsley, 1995; Ide, 1982; Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996). They involve two kinds of honorifics: one expressed by altering the nominal elements (e.g., women's personal pronoun *atashi* marks the lowest degree of politeness, and *watakushi* marks the highest degree of politeness), and the other by altering the verbs (e.g., *iku* 'to go' is the plain/informal style, while *iki-masu* 'to go' is the polite/formal style). The type of predicate corresponds to the polite expressions that occur in the category of address forms. As the term suggests, the addressee of the speaker plays a significant role in the choice of form used by the speaker. Specifically, the social position, power and age of the addressee influences the speaker's choice as well as the formality of the speech context (Ide, 1982; Okamoto, 1997). Similarly to the motivations discussed above pertaining to women having a lower social status than men and having higher societal expectations, it has also been suggested that Japanese women use polite forms to express their deferential attitude, and to express a demeanour of high education and social class (Ide, 1982). Furthermore, the ideology of *yamato nadeshiko* 'personification of an idealised Japanese woman' also presents pressure for Japanese women to embody the traits of kindness, altruism and gentleness (Hearn, 1905; Starr, 2015; Sugihara & Katsurada, 1999). All of which encourage the use of polite expressions. Regardless of the motivations, the high perceptual salience of polite forms and gender in Japanese makes the linguistic variable, social category and language an ideal case study for this line of research.

Thus, the goal of the present study was to examine individuals' ability to override their linguistic experience with explicitly learned attitudes towards language and the social

categories which characterise speakers. Specifically, we examined the potential of explicitly learnt associations mediating associations implicitly learnt through linguistic exposure. Given that research suggests that Japanese females use more polite linguistic forms than Japanese males, we investigated the distribution and perception of the grammatically expressed clause final forms that mark the presence or absence of addressee honorifics in Japanese. If individuals showed a mismatch between the distribution of forms in production and their judgement of the forms according to gender in perception that reflect an explicitly learned abstract rule, it would suggest that there is a mechanism by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. The distribution of the forms according to the gender of the speaker was investigated by means of a corpus study in Experiment 4-1. In Experiment 4-2, we conducted a perception study to investigate individuals' judgements of the forms along a gendered continuum. To demonstrate a reliable mismatch to support our hypothesis, we would need to achieve two outcomes: 1. a significant difference in the distribution of the forms in production and, 2. a reversal of this distribution in perception.

4.2. Experiment 4-1

In Experiment 4-1, we conducted a corpus study using the Nagoya University Conversation Corpus (NUCC) to examine the distribution of grammatically expressed clause final forms that mark the presence or absence of addressee honorifics in Japanese. The NUCC was created between 2001 and 2003 and is a collection of 129 transcriptions of spontaneous conversations between Japanese speakers who shared close solidarity among one another; comprising of, friends, family members and colleagues. Each conversation includes between two and four participants with a duration between 30 and 60 minutes. The NUCC contains a total of 198 native speakers of Japanese of various ages and from diverse academic backgrounds, though the majority of participants were graduate students. In total, the NUCC consists of 129 files,

equating to approximately 100 hours of data. All files were recorded and transcribed in Japanese, capturing phonemic and morphological information, the desired features for this current study, in the transcriptions.

Following the findings discussed above (Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996), we expected that the presence of addressee honorifics would be more frequent in the speech of females. The NUCC has a greater participation of female ($n = 161$) compared to male speakers ($n = 31$), however, we are able to reliably analyse the distribution by averaging the forms according to each gender. This will provide a percentage value for addressee honorifics for both males and females. The value can then be compared across genders and with the value of the absence of honorifics. Ultimately, the results of this experiment will provide us with a distribution in production which we can then compare with the results of Experiment 4-2 to test our hypothesis that the distribution of linguistic variables and social categories learnt implicitly through exposure are overridden by explicitly learn associations.

4.2.1. Experiment 4-1 Methods

4.2.1.1.   *Stimulus materials*

As discussed in Section 4.1, the construction of polite expressions can be formed by altering the predicates. Japanese sentences can end with either the main predicate in plain form or polite form. Plain forms, verb + *-u* or *-ru,* as in *iku* 'to go' and *taberu* 'to eat', are used in informal speech and writing to mark solidarity between interlocutors. Polite forms on the other hand are marked with the presence of the addressee honorific *-masu*, as in *ikimasu* and *tabemasu.* Polite forms are used to signal a formal relationship between interlocutors, such as when meeting a person for the first time, talking to strangers, in workplace contexts, and when making public presentations. They can also be used to create social distance and signal respect among

interlocutors. Because of this distinction in degree of politeness, the contrast between plain forms and polite forms lend themselves as ideal variables for the current study.

4.2.1.2.   Procedure

We first extracted all cases of polite form addressee honorifics from all 129 conversations in the NUCC. Past and non-past variants were extracted in both positive and negative form. We then repeated this process for polite forms. A summary table of the extracted forms is provided in Table 4-1.

Type	Affirmative Non-past	Negative Non-past	Affirmative Past	Negative Past
Plain	*-u, -ru*	*-anai, -nai*	*-ta*	*-(a)nakatta*
Polite	*-masu, -desu*	*-masen, jaarimasen*	*-(i)mashita, -jaarimashita*	*-masendeshita, -jaarimasendeshita*

Table 4-1. Experiment 4-1: The variants extracted from the NUCC
search for plain and polite forms.

4.2.2. Experiment 4-1 Results

Gender	*N* plain forms	*N* polite forms	Total	% polite forms
Male	10,122	2,820	12,942	21.8
Female	59,657	8,013	67,670	11.8
Total	69,779	10,833	80,612	13.4

Table 4-2. Experiment 4-1: The results of the NUCC search for the number of plain and polite forms produced by males and females.

Table 4-2 shows the results of the search of the NUCC for the presence (polite forms) and absence (plain forms) of addressee honorifics. There was a total of 80,612 tokens, with the vast majority comprising of plain forms (86.6%) compared to polite forms (13.4%). In total, more tokens were produced by female speakers (67,670; 83.9%). Of the female tokens, 11.8% were polite forms, while 86.6% were plain forms. For the males, 21.8% were polite forms and 78.2% were plain forms. A chi-square test of independence was performed to examine the relation between the presence or absence of addressee honorifics and speaker gender. The relation between these variables was significant, $\chi^2(1, N = 80,612) = 924.306, p < .001$. Both male and female speakers use more plain forms than polite forms in the overall dataset. In addition, this result shows an unexpected finding which is contrary to previous findings. While previous research has frequently shown that female speakers use more polite language forms than male speakers, the result of this corpus study has shown the opposite. That is, male speakers use more polite forms than female speakers.

4.2.3. Experiment 4-1 Discussion

The results of the NUCC analysis provided a distribution of the presence (polite forms) and absence (plain forms) of addressee honorifics across male and female speakers. The higher frequency of plain forms overall likely pertains to the solidarity between the speakers. Recall

that the spontaneous conversations in the NUCC corpus were between speakers who shared solidarity among one another; including, friends, family members and colleagues. Vernacular, or in the case of Japanese, plain forms, are often used between interlocutors with a close social distance. As such, the high frequency of plain forms in the data set is not unexpected given the relationship between the interlocutors in the corpus. Standard forms are commonly used to express social distance between interlocutors and would be more likely present in corpora which were collected under more formal contexts. Furthermore, the greater number of forms, both plain and polite, found for females compared to males is again a feature of the NUCC.

The analysis of the distribution was therefore both interesting and surprising considering previous literature. Okamoto's (1995, 1997, 1994, 1996) datasets consisted of two collections of conversations. The first were 10 audio-taped informal conversations, each between five pairs of two female college students of high solidarity from Tokyo. The second collection comprised of short conversations between salespersons and customers across departments stores in Osaka and Kyoto. The first collection of data in Okamoto's set is comparable to the NUCC in terms of subject age and solidarity, while the second differs on both parameters. Okamoto (1999) was again a different dataset compared to the NUCC as the analysis was performed using audio-taped dyadic conversations carried out in diverse social contexts, including interactions between professors and students. It is therefore possible, that the NUCC dataset represents a more natural representation of the distribution of addressee honorifics with reference to the gender of the speaker. That is, the speakers of Okamoto's second dataset participated in an interview format, which is known to risk eliciting subjects' socially desired responses due to the presence of the interviewer, (c.f., observer effect (W. Labov, 1972b)).

Ultimately, despite this difference from previous findings, the results provide an accurate distribution that can be used for comparison with the results of Experiment 4-2, which examines participants' judgements of the variables along a gendered continuum. Specifically,

whether addressee honorifics, polite forms, are judged as more likely said by a male or female speaker.

4.3. Experiment 4-2

The corpus-based study in Experiment 4-1 examined the distribution of grammatically expressed clause final forms that mark the presence or absence of addressee honorifics in Japanese. While the finding that male speakers used more polite forms than female speakers was surprising, as it was contrary to expectations based on previous literature, the results did provide a distribution of the forms across genders. This distribution is necessary to compare with individuals' judgements in order to examine the hypothesis of the current paper: that the distribution of linguistic variables and social categories learnt implicitly through exposure are overridden by explicitly learnt associations. Specifically, we aim to investigate if individuals show a mismatch between the distribution of forms in production and their judgement of the forms according to gender in perception. A mismatch with the distribution of data collected in Experiment 4-1 has the potential to yield exciting results, as it would suggest that there is a mechanism by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. In this case, the perception that females use more polite forms than males may override the implicit experience of the individual, leading to an explicitly learnt belief which is contrary to the actual distribution of forms in production. Experiment 4-2 explores this possibility by method of a perception task. We then compare the results of Experiments 4-1 and 4-2 to see whether a mismatch is present between the distribution of forms in production and the perception of forms according to the gender of the speaker.

4.3.1. Experiment 4-2 Method

4.3.1.1.   Participants

Fifty-two native Japanese speakers took part in Experiment 4-2. The participants had an age range between 18 to 35 years at the time of testing and included 16 male and 36 female participants (see Table 4-3). Only one participant identified themselves as a worker, the other 51 were students, in line with the participants of the NUCC.

Participant gender	18-25	26-35	Total
Males	16	0	16
Females	35	1	36

Table 4-3. Experiment 4-2: The number of participants according to age and gender.

4.3.1.2.   Stimulus materials

The complete stimulus set presented during the task included 40 sentences comprising two condition types, PLAIN and POLITE, each containing 20 sentences (2 condition types × 10 sentences × 2 variations [interrogative, statement]). The sentences were identical apart from the presence, POLITE condition, or absence, PLAIN condition, of clause final addressee honorifics. The aim was to compare the results of Experiment 4-1 with participant perceptions. Specifically, we aimed to determine whether individuals' beliefs mediated patterns in production. All stimulus items were checked by three native speakers to confirm the sentences reflected natural speech and were grammatically correct.

Participants completed the perception task in the format of an online survey administered via Qualtrics (2015). All instructions, materials and stimuli were presented in Japanese. This procedure allowed the participant the freedom to choose the device they performed the procedure on (computer or mobile device), and the location and the time of day they wanted to perform the task. By providing these freedoms for the participants and removing an interviewer from the procedure, the design avoided potentially eliciting socially desired responses as opposed to naturalistic data.

In the first section of the survey, the task was to judge if the presented sentence was more likely said by a male or a female speaker. The participants were instructed to use a five-point adjective scale to indicate if the sentence was more likely said by a *male* (1) or by a *female* (5). Each sentence was presented in written form to the participant one at a time in pseudo-random order. Sentences presented in written form were used as opposed to audio recordings to ensure that participants made their judgements on the sentences alone, without the use of acoustic characteristics to inform their judgements. For example, vowel formant frequencies are lower, bandwidths are wider and the fundamental frequency is generally lower for male speakers (Peterson & Barney, 1952). It is possible to examine the presence or absence of addressee honorifics through written stimuli as the forms occur both in speech and in writing.

The second section of the survey was designed to collect participants' demographic data including their age, gender, occupation, birthplace, language experience, and whether they were a student studying at a university. This information was collected in the second section of the survey to allow participants to fully understand the task before asking them to provide their demographic information.

4.3.2. Experiment 4-2 Results
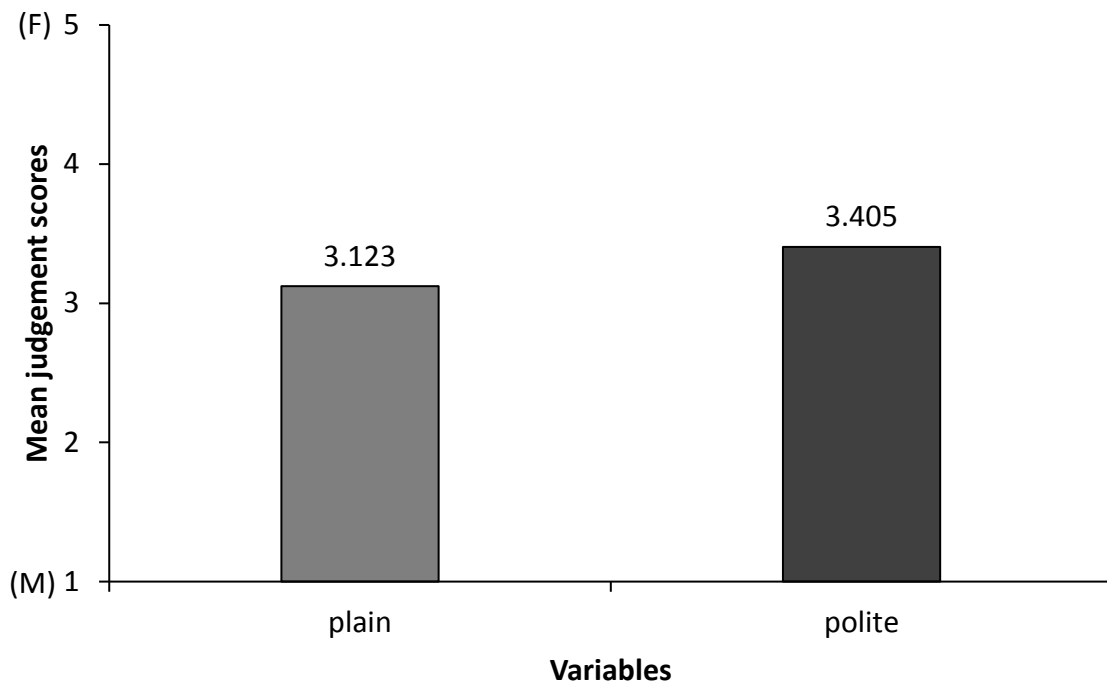
Figure 4-1. Experiment 4-2: Mean judgement scores for clause final
PLAIN and POLITE forms. Higher judgement scores indicate that
participants judged the sentences as more likely said by a female (F)
speaker, and lower scores a male (M) speaker.

Figure 4-1 shows the mean adjective scale judgement scores for the two condition types: PLAIN and POLITE. The higher mean judgement scores indicate that participants judged the sentences as more likely to have been said by a female speaker, while lower mean judgement scores are judged as more likely to have been said by a male speaker. Scores with a mean judgement value of 3 on the adjective scale show that participants thought the sentences had no difference according to the gender of the speaker. Overall, polite sentences in the POLITE condition were judged as more likely said by a female speaker (3.405) compared to the plain sentences in the PLAIN condition which were closer to no difference between genders (3.123).

A Mann-Whitney U Test was conducted to assess the statistical reliability of the differences shown in Figure 1. The test indicated that the dependent measure of mean judgement scores was greater for the POLITE condition ($Mdn = 3.3$) than for the PLAIN condition ($Mdn = 3.05$), $U = 841.5$, $p = 0.001$, $\eta^2 = 0.326$. The results of the perception study showed an opposite trend compared to the corpus analysis. Specifically, the corpus-based study in Experiment 1 showed that male speakers used more polite forms than female speakers, contrary to expectations based on previous literature. The result of the perception study was in line with previous studies, showing a significant tendency for sentences with polite forms to be judged as more likely to have been said by female speakers. Therefore, we have discovered a mismatch between the distribution of forms in production and participants' judgement of the forms according to gender in perception.

4.3.3. Experiment 4-2 Discussion

These results suggest that the presence or absence of addressee honorifics has an effect on individuals' judgements of the gender of the speaker. Specifically, the results suggest that when individuals encounter addressee honorifics in clause final positions, they judge the speaker as more likely to be a female speaker. This finding is in line with previous literature which has examined gender differences in Japanese. Researchers have shown that the presence of addressee honorifics are more frequently found in the speech of females (Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996). Despite this pattern being found in previous production studies, and in the current perception study, our corpus-based study in Experiment 4-1 showed a mismatch to the distribution. Male speakers used more polite forms than female speakers in the NUCC corpus. The mismatch between the production results in Experiment 4-1 and the evaluation results in Experiment 4-2 is therefore suggestive that there could be a

mechanism by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. In the case of polite forms in Japanese, the perception that females use more polite forms than males may override the implicit experience of the individual, leading to an explicitly learnt belief which is contrary to the actual distribution of forms in production.

4.4. General Discussion

The present paper provides robust evidence that explicit learning can offer an account for the asymmetry between associations found in production and those found in the evaluations of socially relevant variables. Specifically, it appears that explicitly learnt associations override associations that are learnt implicitly through linguistic exposure. The results of our corpus-based study, Experiment 4-1, showed that male speakers use more polite forms than female speakers, despite previous research finding that female speakers use more polite language than men (Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996). In our perception experiment, Experiment 4-2, this pattern was reversed to suit the belief that corresponds with societal expectations that women use more polite forms than men. Specifically, when individuals encounter addressee honorifics in clause final position, they perceive the speaker as more likely to be a female speaker. Our findings support the idea that evaluations of social meaning on linguistic variables are mediated by the abstract beliefs of individuals. We therefore suggest that a mechanism exists by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms.

Before we discuss the proposed mechanism in detail, it is important to review the evidence that supports both kinds of learning. Recall that implicit learning is in line with usage-based approaches of language learning, including exemplar-based models. Both implicit learning and exemplar-based models assume that individual speech utterances are aggregated

in memory via a natural process that occurs simply and without conscious operations. Individuals are theorised to be capable of activating stored representations that are learned through linguistic experience and use them in their own speech production. The distribution of the results of our corpus study in Experiment 4-1 aligns with this notion. The significant difference found between the presence or absence of addressee honorifics and the gender of the speaker indicated that a sociolinguistically relevant pattern of speech had been acquired by the participants. Male speakers had learned to use more polite forms than female speakers. The lack of perceptual salience of this pattern suggests it was acquired implicitly. If the participants were aware of this distribution, we would expect to see the pattern reflected in the results of Experiment 4-2. Therefore, the significant distribution of results and the mismatch present between the studies provided evidence to support implicit based learning.

The mismatch between the findings of Experiment 4-1 and those of Experiment 4-2 also provided evidence to support the notion of explicit learning. A direct match between the experiments would have indicated that individuals learn from implicit experience alone. Explicit learning, on the other hand, is a conscious operation where the learner is provided with the form through explicit instruction. The mismatch found suggested that individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. The ideology that surrounds the social construct of gender in Japanese is a likely catalyst for the socially constructed belief that women use more polite forms than men. The history and expectation are thus associations which would likely be attained through explicit instruction. This appeared to be the case with our experimental results. We found that when individuals encounter addressee honorifics in clause-final position, they perceive the speaker as more likely to be a female and do not reflect the pattern learned through implicit means. From both studies, we are therefore able to ascertain evidence to support both implicit and explicit modes of learning.

With the results of Experiments 4-1 and 4-2 offering accounts for both implicit and explicit approaches to language learning, we can now consider the potential that explicit learning functions as a mechanism that mediates associations that are learned implicitly through linguistic exposure, namely, whether explicit learning overrides implicit learning. Recall that research investigating the effectiveness of instruction and feedback of second language learners' acquisition demonstrated significant benefits from explicit instruction (Doughty & Williams, 1998; N. C. Ellis & Laporte, 1997; R. Ellis, 2001, 2008). Explicit learning is also claimed to provide the additional attention necessary for forms which lack perceptual salience to be learned. Ellis (2005) offered both an elegant and dynamic account for the interface of explicit and implicit knowledge. That is, the sequential motives of learning are novice + externally scaffolded attention → internally motivated attention → explicit learning → explicit memory → implicit learning → implicit memory, automatisation, and abstraction = expert. This structure is often associated with second language acquisition but does show merit to apply to a sociolinguistic framework. In the case of the linguistic features that characterised "Pittsburghese", the forms were present in the speech of the individuals, but not used as social markers or for the purpose of identity construction. The sequential pathway therefore did not contain any explicit learning. It was only after the features attained explicit attention that they moved from indicators to markers and stereotypes and were then able to be used for the purpose of identity construction. Therefore, explicit learning appears to be more dominant than implicit learning, at least in the case of linguistic perception. It is possible then, that the mismatches present in previous sociolinguistic studies between variables that were associated in production and those in evaluations (e.g., Campbell-Kibler, 2008; Plichta & Preston, 2005; Staum Casasanto, 2010) were due to a lack of salience between the form and social category in question. In the case of our current study, the ideology surrounding politeness and gender in Japanese drives individuals to ignore their linguistic experience and adopt an

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explicitly learned socially constructed association. That is, their explicit knowledge overrides their implicit experience.

There are alternate accounts that could explain the findings of our two experiments. One possibility is that the corpus data used in Experiment 4-1 differed from the data used in earlier studies which have examined Japanese polite expressions (Ide et al., 1986; Okamoto, 1995, 1997, 1999, 1994, 1996). The NUCC was created between 2001 and 2003, and therefore represents more current natural data than the data used in previous research. It is therefore possible that the pattern identified in Experiment 4-1, that males use more polite forms than females, represents a change in progress. Further research is required to investigate this possibility; however, the current results could be indicative of a changing landscape of politeness and gender in Japanese. Miyazaki (2002, 2004) found that some junior high school girls use masculine self-referential terms (e.g., *boku, ore*) instead of feminine forms (e.g., *watashi, atashi*), demonstrating that politeness and gender in Japanese are becoming more probabilistic in nature. If female speakers are actively trying to convey what would be considered a more masculine style of speech, they may be manipulating their own speech to contain less addressee honorifics with the intention of conveying a more masculine persona.

A second possibility pertaining to the data used in this study is that of context. Our data differed from previous studies in terms of social context. For example, Okamoto (1999) analysed audio-taped dyadic conversations carried out in diverse social contexts, including interactions between professors and students. The NUCC data on the other hand is largely comprised of data collected from graduate students. The importance of context has been addressed within a usage-based perspective. Bybee (2010 p. 55), noted that while meaning is always situated in context, our experience with the physical world is neither uniform nor flat, resulting in potential variations with how people come to perceive and care about certain parts of the temporal domain above others. The context of an utterance may therefore influence the

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overtness of categories, and this may explain the variance in category perception. Pharao et al. (2014) found support for this, in that socially-indexed meanings can be activated or changed depending on context. Smyth and colleagues (2003) found a similar result, whereby men speaking in formal contexts were more likely to be perceived as feminine/gay than when speaking in informal contexts. However, while there has been evidence to support the role of context in influencing the salience of social categories, additional research has found that context does not directly impact individual perceptions. Therefore, the importance of speech context in examining individual perceptions appears relevant, but to what extent remains to be investigated. We ultimately recommend expanding the current investigation to corpora which include a wider variety of speech contexts and speakers of older age groups in order to address this potential limitation.

The findings of this research add to a body of work examining sociolinguistic perception and cognition. However, there remain many unanswered questions about the details of the proposed mechanism that mediates individual beliefs. First, this work only examines a single linguistic variable with a single social factor. Research has demonstrated that linguistic variables are capable of indexing multiple social meanings (Campbell-Kibler, 2008; Eckert, 2008; Silverstein, 2003). It is possible that the mechanism is sensitive to these additional meanings and further study examining additional factors with the variables of addressee honorifics could address this possibility. The examination of additional variables, both Japanese and other languages, are also of interest to further investigate this line of research. Furthermore, this research was conducted with participants who only took part in one of the two experiments. We were therefore unable to perform any qualitative analyses to explain the results, such as whether the participants' own naturalistic speech production patterns were relevant to their patterns of awareness. As such, a combined approach that examines individuals' production of addressee honorifics, their evaluations of the forms, and additionally, their self-

reports about their use of the forms are needed to further investigate the potential mechanism we have explored in the present paper.

Overall, the results show that individuals are able to override their linguistic experience with socially constructed beliefs. In addition to implications regarding the method of acquisition pertaining to the association between linguistic variables and social categories, the findings also have implications for sociolinguistic research. Specifically, the successful evaluation of socially-indexed meaning may be contingent upon the beliefs of individuals, that is, whether the relationship between variable and the social category is salient in the speech community. Establishing the salience of a variable and its association to a given category is therefore crucial in determining whether social meaning is perceivable, and, by extension, if the indexed meaning can be successfully used for the purpose of identity construction.

Chapter 5: General Discussion and Conclusion

The final chapter of this dissertation begins with a review of the theoretical and empirical motivations for the current project, the aims of this thesis, and the main findings of the studies presented in the experimental chapters (Section 5.1). The findings of the current project are then discussed with regard to the key theoretical accounts pertaining to sociolinguistic control and awareness. Section 5.2 contains a discussion of the role of the situational context in the mediation of associations between linguistic variables and social categories in individuals' awareness of socially-indexed meaning. In Section 5.3, the level of social salience is evaluated with regard to individuals' awareness of the variable's indexed social meaning. Section 5.4 then discusses the role of individuals' beliefs and alignment to the linguistic variable. In Section 5.5, an evaluation of the models of sociolinguistic learning and conveyance is presented and discussed in light of the present study's findings. Then, in Section 5.6, the limitations of the present project are acknowledged and directions for future research are proposed. Finally, Section 5.7 concludes the dissertation by providing final remarks on the contributions of the current study, with specific regard to the implications the study makes to the broad and valuable body of research which examines individuals' awareness and control of sociolinguistic forms.

5.1. Thesis overview

As communication is inherently a social practice, the ways in which linguistic forms come to be associated with socially relevant meaning, and the ways these forms are used by individuals to communicate these imbued meanings, are important factors necessary to understand the relationship between language and society. In order to investigate social meaning, an empirical examination of the production and perception of sociolinguistic variation is required. Building on the growing body of work which examines individuals' agency and awareness of socially-

indexed meaning (Babel, 2016; Bell, 1984; Campbell-Kibler, 2007, 2008, 2011; Podesva et al., 2015), this dissertation's goal was to investigate the role of individuals' beliefs and their alignment to linguistic forms with respect to the awareness of socially-indexed meaning. The specific aim of the current study was to examine the apparent mismatch between expected socially-indexed meanings born of linguistic variables which are socially stratified and individuals' actual sociolinguistic awareness. The motivation for this line of enquiry stems from the gap that exists in our understanding of individuals' awareness of socially-indexed meaning. Specifically, the apparent mismatches between patterns observable in production and those present in individuals' awareness. While studies have shown evidence to suggest that individuals are aware of social meaning, many expected associations are not always, if at all, identifiable by listeners. The mismatch presents substantial implications for research that argues that variables are deployed as a resource by speakers to construct identities, stances or personas. In order for a sociolinguistic variable to be used for the purpose of conveying social meaning, the socially-indexed meaning of the variable must be shared knowledge across listeners in the given speech community. If listeners are not aware of the indexed meaning, speakers could still produce the form as a result of imitative social conditioning, but the intended social information would be unstable and thus unreliable for the purpose of communicating social information.

To address the gap in the research pertaining to apparent mismatches, an experimental series was designed which employed social evaluation judgements combined with corpus analyses and self-report tasks to investigate the role of the individual in the acquisition and communication of social meaning. The research questions targeted the situational context (no-context vs a workplace), the variant's social salience (stereotypes, markers and indicators), the alignment of the individual to a linguistic form (a user of the form vs a non-user), and the method by which the association between the form and social category were acquired

(implicitly vs explicitly). Two languages were chosen for their suitability and validity towards the current project's research questions and aims. Japanese and Australian English were selected as the speech communities provided the necessary social categories required to meet the criteria of the research questions: including, social categories that could be examined within rigid situational contexts, and social categories which were overt and carried high social salience in the speech community. Within the languages, sociolinguistically relevant variables and categories were chosen to provide a rigorous examination of individuals' perceptual awareness of socially-indexed meaning, investigate how associations are learned by individuals, and examine the role of individual alignment to a linguistic variable and its expected social meaning.

Chapter 2, the first of the three experimental chapters in this dissertation, presented the findings of the investigation of the possible indexical association, in no-context (Experiment 2-1) and context (Experiment 2-2) conditions, between Japanese linguistic variables that have shown social stratification with the gender of the speaker and the social category of gender in two online semantic differential perception tasks. Native Japanese speakers were presented sentences containing the variables and were asked to judge if the sentence was more likely said by a male or a female speaker using a five-point adjective scale. The results of Experiments 2-1 and 2-2 showed that for variables prescriptively associated with speaker gender, Japanese individuals showed awareness of the socially-indexed meaning of speaker gender and were able to identify the gender of the speaker from the presented variable alone. Individuals were however unable to do so for variation in the potential verb suffix. While no interaction was found between the ambiguity (deterministic vs. probabilistic) and condition type (particle vs. pronoun) of the variable on individuals' judgements, the significant finding for variables prescriptively associated with speaker gender, in contrast to those which have an overt salience in the community but not prescriptively to speaker gender, suggested that the variable's social

salience wasn't necessarily the factor which contributes to its awareness, but rather, the explicit attitudes towards the variable's association with social categories in the speech community. In terms of the situational context, examined through comparisons between the no-context condition provided in Experiment 2-1 and the given context of the workplace provided in Experiment 2-2, knowledge of the speech context of the variables had a limited effect on individuals' judgements. Only the potential suffix variant, *ra*-deletion, showed a significant effect of situational context. This finding suggested that knowledge of the situational context weakened the slight maleness judgement in favour of another socially indexed meaning. Taken together, the results indicated that the social salience of the linguistic variable in the speech community affects listener awareness of the variable's socially-indexed meaning. However, at least in the case of this research, the situational context of the variable does not have a significant effect on speaker-listener awareness.

The experiments presented in Chapter 3 investigated the role of Australian English individuals' alignment in the evaluation of socially-indexed gender and age by method of a combination of online semantic differential perception tasks and self-reporting tasks. In the first part of Experiment 3-1, examining age, participants judged if presented sentences were more likely to be said by a speaker with a younger or older life stage, that is, by a student or by an employee using a five-point adjective scale. The second part of the experiment was a self-report task where participants were asked to decide which of four responses they would most likely choose in responding to a speaker's question; one response of which included *yeah-no* to determine if the participant identified as a *yeah-no* user. The results indicated that sentences including *yeah-no* were judged as more likely to be said by a student, which was consistent with the pattern found in previous research (Erin Moore, 2007). The effect of the variable on individuals' judgements was also found to be stronger for participants who did not identify as *yeah-no* users. This suggested that an individual's alignment to a variable impacts their

awareness and, potentially, their acquisition of the variable's social meaning. Experiment 3-2 was identical in design to Experiment 3-1 but examined the social category of gender. While there was no significant effect of discourse marker on individuals' judgements across the sample, participants who identified as *yeah-no* non-users showed a significant effect of discourse marker. This finding supports the hypothesis that the individual's alignment to the linguistic form, either as a user or a non-user of the feature, impacts their awareness of the socially-indexed meaning of the variable.

Lastly, the aim of the experiments in Chapter 4 was to investigate the method by which the association between a linguistic variable and a social category is learned, either implicitly or explicitly, through comparing the results of a corpus analysis with an online semantic differential perception task. The goal here was to determine if explicitly learned associations were capable of overriding associations learnt implicitly. If individuals showed a mismatch between the distribution of forms in production and their judgement of the forms according to gender in perception that reflect an explicitly learned abstract rule, it would suggest that there is a mechanism by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. Such a finding would offer another potential explanation for the apparent mismatches between the social stratification of a sociolinguistic variable and individuals' awareness of its imbued meaning. In order to test this hypothesis, a variable with high social salience and a social category that was heavily weighted in the community was required. Thus, the distribution and perception of the grammatically expressed clause final forms that mark the presence or absence of addressee honorifics in Japanese was chosen for the study. The results of the corpus study, Experiment 4-1, showed that male speakers use more polite forms than female speakers, despite previous research finding that female speakers use more polite language than men (Ide et al., 1986; Okamoto, 1994, 1995, 1996, 1997, 1999). In the perception experiment, Experiment 4-2, the pattern was reversed to

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align with the belief that corresponds with societal expectations that women use more polite forms than men. Specifically, when individuals encounter addressee honorifics in clause final position, they perceive the speaker as more likely to be a female speaker. The findings support the idea that evaluations of social meaning on linguistic variables are mediated by the abstract beliefs of individuals, suggesting that a mechanism exists by which individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms.

When considered together, the empirical findings of the current study are the results of a rigorous investigation into the awareness and control of sociolinguistic variation and, by extension, socially-indexed meaning. The results of the experimental series presented evidence to suggest that the explicit beliefs and the alignment of the individual to a linguistic form mediates their linguistic experience and thus shapes their awareness of a form's socially indexed meaning. While the situational context of the linguistic form did not impact individuals' judgements considerably in the current study, the social salience of the form was shown to play a role as a factor which mediates individuals' awareness of the form's socially-indexed meaning. Ultimately, the findings demonstrate that while social meaning is nuanced and flexible, the attitudes of individuals and speech communities lie at the heart of the shaping and communication of social information. The following sections offer a discussion of the synthesised findings of this dissertation and their implications for the study of social meaning, with specific regard to the role of the individual in the acquisition and conveyance of social meaning.

5.2. The role of the situational context

Studies which have explored the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variables have discussed the context of the utterance as a possible explanation for the mismatch (Campbell-Kibler, 2008;

Pharao et al., 2014; Smyth et al., 2003). In this dissertation, speaker context refers to the individuals' attitudes towards the speaker (i.e., positive and/or negative evaluations of the speaker's traits), and situational context refers to changes in the setting and dimension of the interaction (i.e., the location of the utterance, the social distance between the interlocutors and the formality of the setting). Studies which have investigated the role of speaker context have found that listeners' judgements of speech are affected by whether the listeners' evaluations of the speaker were positive or negative (Campbell-Kibler, 2008). Additionally, research examining the perception of speech has shown that judgements can be affected by social information about the speaker (Hay & Drager, 2010; Hay, Nolan, et al., 2006; Hay, Warren, et al., 2006; Koops et al., 2008; Niedzielski, 1999; Strand, 1999). While studies have explored the influence of situational context, compared to speaker context, the area remains largely underexplored with regard to individuals' awareness, despite encouraging results pertaining to the role of the situational context as a factor mediating individuals' awareness of socially-indexed meaning (Pharao et al., 2014; Sherwood, 2015; Smyth et al., 2003). The current study thus sought to further explore the influence of the situational context on individuals' judgements and the ensuing research question was addressed in Chapter 2.

While the results of the present study found that the situational context largely did not affect participant judgements, the results do not necessarily indicate that context does not play a role in the evaluation of social meaning. As outlined in Section 1.2 and briefly recalled above, the context of the utterance, both pertaining to the speaker and the situation, has been shown to influence individuals' evaluations of speech. The minimal effect here could be born of the association between the variable and the situational context. That is, the situational context may be specific to variable being studied. For example, the PROBABILISTIC particles and pronouns in the current study were expected to be affected by the given context of the workplace. The first-person singular pronoun *watashi* is used as a polite form in men's speech, and a plain form

in women's speech. Thus, the expectation was that listeners' knowledge that the utterance was taking place in a workplace environment would suggest to individuals that the variable was used in a more formal context and would therefore be more ambiguous and less likely to be spoken by a female in the context condition. The difference in means (no context, 3.86; context, 3.69) trended with the current study's predictions, but it was not statistically significant in the sample size. The small effect size in this case could be born of a weakening in the importance of the situational context for pronouns. Work by Miyazaki (2002, 2004) found that some junior high school girls use masculine self-referential terms (e.g., *boku, ore*) instead of feminine forms (e.g., *watashi, atashi*). If Japanese individuals no longer hold rigid distinctions regarding the situational context, particularly for recovering socially-indexed meaning, they may not be sensitive to a gendered difference born of the setting. The situational context then may not be relevant in the case of these particular variables, and, in the case where a result was found, the setting may be related to another contextual category.

In regard to the perceived vernacular variant of the potential suffix allomorphs, the significant effect of situational context suggested that knowledge of the setting weakened the slight maleness judgement in favour of another socially indexed meaning. Recall that previous research which has examined *ra*-deletion and the contextual category of social status found that individuals were able to judge the social status of a speaker's interlocutor by the use of potential verb suffix allomorphs alone (Sherwood, 2015). Individuals used the short form, *-re*, to identify the interlocutor as having a close social distance to a speaker. When a long form was heard, individuals judged that the interlocutor had a greater social distance to the speaker, such as a superior. Unlike the first-person singular pronoun, *watashi*, the vernacular short form of the suffix, *-re,* the variable's connection to the social status of the interlocutor may be influencing judgements due to its overlap with the concept of a workplace setting. The setting of the utterance may be of lesser importance compared to the social status of the interlocutor

(see Sherwood, 2015), or the formality of the speech context, as in Smith et al. (2003). Therefore, while the situational context does appear to be relevant in understanding the apparent mismatches in individuals' awareness of social meaning, further work is needed to investigate whether certain contexts are more heavily weighted than others, and whether the chosen settings have overt or covert salience in the speech community.

5.3. Social salience and attentional weighting

In addition to encoding exemplars, or episodes, in memory, exemplar-based models offer accounts for the activation and recall of stored experiences (Goldinger, 1997; Johnson, 1997; Pierrehumbert, 2001). As discussed in Section 1.1, representations contain rich linguistic and non-linguistic information (J. Bybee, 2001; Foulkes & Docherty, 2006; Goldinger, 1997, 1998; Johnson, 1997, 2006; Pierrehumbert, 2001, 2002). The aggregation of form and meaning results in a mapping of relevant social categories pertaining to the speaker to each exemplar (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, et al., 2006; Johnson et al., 1999). Here, frequency too plays a role in the formation of exemplar clouds (J. Bybee, 2010). The more frequently a form has been experienced, the denser the cluster, and the more accessible the form becomes.

By design, exemplar models give equal weight to each exemplar and predict that more frequently experienced forms will lead to stronger representations of those words in memory. This leads to the expectation that sociolinguistic variables that are more prevalent in the speech community will have stronger salience and lead to more accurate evaluations of social meaning by individuals. We have already seen that this is not the case. Variables with high social salience do not always show a one to one mapping with the social stratification of the variable in the speech community. The apparent mismatches discussed in this dissertation are one such point of contention. Furthermore, some findings cannot be accounted for with purely

frequency-based models. For example, Sumner (2013) found that in a study of recognition memory for variants of word-medial /nt/, infrequent, idealised forms were remembered equally well as frequent, casually articulated forms. The frequency of the experienced exemplars therefore could not predict how strongly a given form would be activated during processing. Theories incorporating exemplar weights (Nosofsky, 1991; Sumner et al., 2014) suggest that memory effects such as those identified in Sumner (2013) which cannot be predicted by frequency-based accounts can be explained by differences in how strongly certain episodes are encoded. An attentional mechanism for these differences was thus proposed (Sumner et al., 2014), whereby some exemplars draw more attention than others and their encoding is therefore strengthened.

The concept of attentional weighting is therefore in line with the findings of Chapter 4: where explicitly learnt associations were shown to be capable of overriding implicitly learnt ones. Addressee honorifics and the social category of gender had a clear correlation in the speech community that expressed societal norms in awareness. Participants were able to recognise the socially-indexed meaning of gender, despite the fact that the indexed meaning did not correlate with the social stratification of the form—the association that would be predicted by an exemplar-based model. In the findings of Chapter 3, individuals' social desirability played a role in the awareness of socially-indexed meaning. For the participants who volunteered that they used the sociolinguistic variable *yeah-no* in their speech, only a slight awareness of social meaning was found in the case of the social category of age. For individuals who identified as a non-user of *yeah-no*, a different pattern emerged. Non-users were sensitive to the status of the variable in the speech community, and their sensitivity drew attention to the socially-indexed meaning of the variable. In both cases, the awareness of the socially-indexed meaning of the form was contingent upon social factors. Sumner et al. (2014) also supports this claim, suggesting that factors contributing to the attentional weighting of

each exemplar are socially driven. Sumner et al. claim that positive social evaluation by individuals and the implications of social power are likely to draw greater amounts of attention to variables and thus lead to greater encoding. The results of this study build upon Sumner et al. by contributing negative social evaluation to the model of attentional weighting. In addition to positive social evaluations, negative evaluations too appear to draw greater amounts of attention and create greater encoding. This in turn continues to offer support for usage-based models of acquisition but suggests the models may need revising to account for variables and social categories which may draw greater attentional weight than others. Ultimately, the notions of social salience and attentional weighting demonstrate that not all experiences have equal social significance and, thus, associations that bear social meaning need to be investigated with this finding in mind.

5.4. The alignment of the individual to a sociolinguistic variable

Given that evaluative judgements of sociolinguistic variables are based on attitudes, it is not surprising that previous studies found that judgements were tied to the a priori beliefs of the listener. Campbell-Kibler's (2008) research into the realisation of (ING), and Levon's (2014) work on listener reactions to intersecting categories of sexuality, gender and social class, have both shown that stereotypes play a significant role in the evaluations of socially indexed categories. The current study's findings contribute to this line of enquiry. In addition to beliefs and endorsement of stereotypes, the present study demonstrated the significance of the individual's alignment to the variable as either a user or a non-user. From the results, it appears that individuals who identify as part of a given speech community by either proudly, or naturally, volunteering their use of a given linguistic variable are less sensitive to the social meaning surrounding said variable. Those who do not identify as a user of a particular linguistic feature show a marked awareness of the form's socially indexed meaning. This pattern could

offer an explanation for the apparent mismatches between individuals' awareness of socially-indexed meaning and the social stratification of linguistic variables. For the cases where individuals did not show awareness of an expected socio-indexical relationship, it could be that the individuals are users of the variable in question and are not sensitive to its distribution in the community. Those who do show awareness may be non-users and sensitive to the use of the variable and its associated meaning(s). Furthermore, it is possible that non-users are in fact users who have a high degree of linguistic insecurity. That is, the non-users may be manipulating their speech away from what they deem to be socially undesirable and this manipulation is enhancing their sensitivity to the linguistic variable and its correlating social meanings.

In addition to the notion of sensitivity as a factor which mediates awareness, it is possible that speakers who align with a variable do not create associations between the linguistic variants and social categories of their community. For these speakers, their use of the sociolinguistic variable in question may be natural and automatic, compared to explicitly learned, conscious language choices. They then may only have implicit knowledge of speech patterns and, by extension, the socially-indexed meanings of variables in their community and may show no awareness of the variant's social meaning as the association is meaningless for the purpose of their communication. For the non-users, on the other hand, their sensitivity to the form and their own language use may draw attention to the variable and thus create overt associations between the linguistic variable and its correlating social categories. The sensitive listeners may then have overt awareness of the form's socially indexed meaning, while the non-sensitive individuals only have implicit knowledge of the variable's socially indexed meaning. Work which teases apart salience and individual alignment to variables would therefore aid our understanding of cognitive factors which mediate the evaluations of social meaning.

One final point that needs to be addressed regarding the alignment of the individual is in regard to attitudes. As positive and negative evaluations of speakers have been shown to be significant in individuals' awareness (Campbell-Kibler, 2008), individuals' attitudes regarding the variable in the community are another factor worth exploring. The discourse marker *yeah-no* is highly marked, if not stereotyped, in the speech community and the media attention surrounding the variable suggests it is highly salient. The variable's status in the community as "speech junk" and a "verbal crutch" could be considered as negative, certainly a vernacular speech variant, and would thus be expected to impact individuals' alignment. However, as discussed in Section 1.2, the results of Labov's (1966b) study, where New York speakers showed a tendency to report higher usage of standardised forms than their actual usage, differed significantly to Trudgill's (1972) findings in the opposite direction which showed a tendency for speakers to report higher usage of non-standardised forms than their actual usage. Given the status of *yeah-no*, it appeared that individuals were aligning in a similar way to Trudgill, suggesting that *yeah-no* has a non-standard social desirability bias. Future work comparing variables which have standard or positive connotations compared to vernacular or negative connotations would be a very interesting line of further enquiry for understanding the role of alignment. Additionally, work comparing variables with different levels of social salience could further unpack the investigation of alignment with regards to the awareness and control of social meaning.

5.5. On the existing models of sociolinguistic learning

Two important factors were raised in Chapter 1 that are necessary to account for the acquisition and conveyance of social meaning: sociolinguistic awareness (Section 1.2) and speaker agency (Section 1.3). Despite both factors being established in the literature, the question remained as to why we find apparent mismatches between individuals' awareness of socially-indexed

meaning and the social stratification of linguistic variants from speakers' production. The results presented in Chapter 4 support the proposed explanation that evaluations of social meaning on linguistic variables are mediated by the abstract beliefs of individuals. Recall that indexicalisation- and usage-based accounts of learning are implicit acquisition models where associations between linguistic forms and social categories are acquired automatically. Conversely, explicit learning is a conscious operation where associations and patterns are learnt intentionally. Based on the findings of the current study, it appears that a mechanism exists by which individuals are capable of overriding their linguistic experience (i.e., implicit associations) to reflect socially constructed beliefs (i.e., explicit associations) about the distribution of forms.

Before discussing such a mechanism, it is important to review the evidence that supports both kinds of learning. Implicit learning and exemplar-based models both assume that individual speech utterances are aggregated in memory via a natural process that occurs naturally and without conscious operations. Individuals are theorised to be capable of activating stored representations that are learned through linguistic experience and are subsequently able to use them in their own speech production (Eckert, 2008; Silverstein, 2003). The results of the corpus study in Chapter 4 aligns with this notion. The significant difference found between the presence or absence of addressee honorifics in Japanese and the gender of the speaker indicated that a sociolinguistically relevant pattern of speech had been acquired by the participants. That is, males had learned to use more polite forms than females. The lack of perceptual salience of this pattern suggests it was acquired implicitly. If the participants were aware of this distribution, we would expect to see the pattern reflected in the results of the online semantic differential perception task, Experiment 4-2. Thus, the significant distribution of results and the mismatch present between the two experiments in the Chapter provided evidence to support implicit based learning.

The mismatch between the findings of the corpus, Experiment 4-1, and those of perception task, Experiment 4-2, also provided evidence to support the notion of explicit learning. A direct match between the experiments would have indicated that individuals learn from implicit experience alone. Explicit learning, on the other hand, is a conscious operation where the learner is provided with the form through explicit instruction. The mismatch found suggested that individuals override their linguistic experience to reflect socially constructed beliefs about the distribution of forms. The ideology that surrounds the social construct of gender in Japanese is a likely catalyst for the socially constructed belief that women use more polite forms than men. The history and expectation are thus associations which would likely be attained through explicit instruction. This appeared to be the case with the experimental results in Chapter 4. The results suggest that when individuals encounter addressee honorifics in clause-final position they perceive the speaker as more likely to be a female and do not reflect the pattern learned through implicit means.

With the results of the experiments in Chapter 4 offering accounts for both implicit (Experiment 4-1) and explicit (Experiment 4-2) approaches to language learning, the potential for a mechanism that mediates implicitly learnt associations with those that are explicitly learnt can now be discussed in light of the findings. As discussed in Section 1.3, research investigating the effectiveness of instruction and feedback of second language learners' acquisition has demonstrated significant benefits from explicit instruction (Doughty & Williams, 1998; N. C. Ellis & Laporte, 1997; R. Ellis, 2001, 2008). Explicit learning has also been claimed to provide the additional attention necessary for forms which lack perceptual salience to be learned. Ellis (2005) offered both an elegant and dynamic account for the interface of explicit and implicit knowledge. That is, the sequential motives of learning are novice + externally scaffolded attention → internally motivated attention → explicit learning → explicit memory → implicit learning → implicit memory, automatisation, and abstraction

= expert. This structure is often associated with second language acquisition but does show merit to apply to a sociolinguistic framework. In the case of the linguistic features that characterised "Pittsburghese" in Johnstone et al. (2006), the forms were present in the speech of the individuals, but not used as social markers or for the purpose of identity construction. The sequential pathway therefore did not contain any explicit learning. It was only after the features attained explicit attention that they moved from indicators to markers and stereotypes and were then able to be used for the purpose of identity construction. Therefore, explicit learning could be more dominant than implicit learning, at least in the case of linguistic perception. If so, it is possible that the mismatches present in previous sociolinguistic studies between variables that were associated in production and those in evaluations (e.g., Campbell-Kibler, 2008; Plichta & Preston, 2005; Staum Casasanto, 2010) were due to a lack of salience between the form and social category in question. While alternative accounts may offer explanations for the pattern of results in the present study (see Section 4.4), it appears that the ideology surrounding politeness and gender in Japanese drives individuals to ignore their linguistic experience and adopt an explicitly learned socially constructed association. Thus, the findings of the present study suggest that a mechanism exists whereby individuals are capable of overriding their implicitly learnt associations with those that are explicitly learnt and reflect the socially constructed norms of the speech community. This, by extension, suggests that usage-based accounts of learning may require revising to account for associations which cannot be established via implicit learning alone.

5.6. Limitations and future directions

Despite the fact that the experimental series of the present project was rigorously designed to systematically probe various aspects of socially-indexed awareness and control, methodological limitations can be identified with respect to the stimulus materials and

procedures used. Here, the restrictions and motivations of the stimuli and design are discussed. Future directions are also pointed out to encourage further research into the role of beliefs and individual alignment to variables with regard to sociolinguistic communication.

In order to investigate the role of explicit beliefs and speaker alignment in the awareness of socially-indexed meaning, the design of the current study required a few key restrictions on the stimuli to accurately investigate the research questions and test the hypotheses. The first stimulus restriction pertains to the linguistic variables used in the experimental series. The choice of variables stemmed from the research questions born of the gap in the literature surrounding the apparent mismatches in speaker-listener production and awareness of social meaning. In Chapter 2, awareness of the gender of the speaker and the social category of gender, in context and no-context conditions, was investigated with regard to Japanese linguistic variables that have previously shown social stratification. Chapter 3 investigated the role of Australian English individuals' alignment in the perception of socially-indexed gender and age on the highly stigmatised discourse marker *yeah-no*. Finally, Chapter 4 examined sociolinguistic awareness with specific enquiry into comparing the method by which the association is learned, either implicitly or explicitly, through speakers' use and evaluations of the gender of the speaker and the social category of gender on addressee honorifics in Japanese. In each experiment, the chosen variables were highly marked, and, potentially, stereotyped in the given speech community. The reason for selecting variables with strong social salience was twofold. Firstly, as awareness refers to individuals' overt consciousness regarding differences between forms, categories and relationships, it was necessary to select variables which had a high probability of being identified by the participants in order to test the role of explicit beliefs and speaker alignment to sociolinguistic variables. Markers or stereotypes were thus needed to satisfy this criterion. Secondly, the research questions probing situational context, social salience and individual alignment, provided independent variables to be tested against the

individual's awareness. For each experiment, the successful identification of a socially-indexed category was required to investigate these independent variables, leading to a need for selecting variables which carried overt salience in the speech community. While these restrictions allowed for a thorough investigation of the study's research questions, such a rigorous design runs the risk of being unable to capture nuanced effects on variables which are considered to be indicators; particularly in the case of examining individuals' alignment. Further investigation is therefore recommended to examine variables of differing social salience to probe the extent of such an effect on sociolinguistic awareness.

The second stimulus restriction of the study was in relation to the social categories in question. While it is well known that linguistic variables are capable of indexing multiple social categories, which are in essence complex, dynamic and contextually dependent, it is this very nature which led to the constraint of restricting the analysis to just two potentially indexed meanings: age and gender. As the aim of this project was to examine the role of individuals' beliefs and alignment, this restriction in design was ultimately necessary; however, it is important to note that the design cannot capture the subtle nuances of the variables being tested. Indexical relationships and interrelated meanings likely remain, particularly with regard to styles and their indexical fields. To investigate these subtler meanings on linguistic variables, a thorough empirical investigation of a single variable, or combination forming a style, is required. Furthermore, with regard to social categories, while the category of gender was selected for each of the experiments in the series, the socially constructed category of gender frequently yields mismatches between correlations in production and awareness (e.g., Baugh, 1979; Campbell-Kibler, 2007; G. R. Guy & Boyd, 1990; Kirtley, 2011; Labov, 1972; Plichta & Preston, 2005; Rickford, 1999; Staum Casasanto, 2010; Wolfram, 1969). These mismatches across studies was one of the primary motivations for examining gender in the current study, and while the findings in the current study were largely significant, the cases which were not

may indicate that the category is not strongly indexed onto the variable, but rather, enacts a more "supportive" rather than "defining" meaning for the purpose of identity, persona and stance construction. Future work examining a potential weighting of social categories is therefore recommended to investigate the possibility of categories varying in their social significance.

The final point which needs to be raised in terms of future directions pertains to the incorporation of self-reports in the design of the current study. While researchers often cite the risks of using self-reports in linguistic research, as they do not reflect natural language in use, the results of the present study demonstrate that when examining an individual's awareness of socially indexed meaning, self-reports offer a unique insight into how individuals align themselves to normative stereotypes concerning speakers and variables. By employing a combinatory method of evaluation tasks and self-reporting, the alignment of the individual was shown to play a role in the evaluation and awareness of social meaning. As such, the use of self-reports builds upon existing research which has found that the association between linguistic variables and social categories can be mediated by both attitudinal and cognitive factors (Kleinschmidt, 2016; Levon, 2014). In future, a more robust examination of self-reports would aid to this line of research. The current study made use of an indirect self-report method in the experiments of Chapter 3 to determine if an individual identified with a variable and its given speech community. Both direct and continuous investigations into individuals' alignment to a variable may offer finer grained and finer nuanced results that could reveal more about how we perceive social meaning, and how we manipulate our speech for the purpose of communicating social meaning.

5.7. Conclusion

The complex phenomenon of speech is inherently social in nature. When we engage in speech, we not only communicate semantic, truth-conditional meaning, but also social information about our identities, stances, moods and goals through the linguistic forms we use. We convey who we are and who we wish to be through our linguistic choices, and, in turn, we judge the choices of our interlocutors to interpret the identity they wish to project. Our exposure to linguistic variables and speech communities forms the foundation of the tacit social knowledge we draw upon to communicate social meaning. This dissertation has explored the role of explicit beliefs and individuals' alignment to linguistic variables in the shaping of how individuals judge and construct attitudes about linguistic forms and their socially-indexed meanings. The findings offer support to the previous work examining social meaning and suggest that, in addition to our implicit exposure, we form socio-indexical associations based on explicit social expectations. Our alignment to sociolinguistic variables, either as a user or non-user of the feature, influences our sensitivity to the form's imbued meanings and ultimately our awareness of the meanings themselves.

While the design of the experimental series found significant evidence of socio-indexical awareness, the restrictive nature of targeting a single variable and a single social category in each experiment resulted in findings which may not have captured subtle nuances of related meanings. It is well known that linguistic variables are capable of indexing multiple social categories, which are in essence complex, dynamic and contextually dependent. However, as the aim of this project was to examine the role of individuals' beliefs and alignment the restrictions in design were necessary. Overall, the results of the study were encouraging, and will serve well as a baseline for research into the effect of the individual on sociolinguistic awareness. Future work is recommended to unpack this line of enquiry by further investigating

the variables used in this study, and other variables, with regard to styles and their indexical fields.

To conclude, the results of the present study build upon the broad and valuable body of work examining social meaning. By investigating the apparent mismatches between the socially stratified patterns of sociolinguistic variables and individuals' awareness of expected socially-indexed meaning, the experimental series was able to explore the role of the explicit beliefs and individuals' alignment to sociolinguistic variables as factors which may offer an explanation for these mismatches. The encouraging findings pertaining to the social salience of the variable, the individuals' linguistic sensitivity, and the ability for listeners to form arbitrary associations and override implicit exemplars with explicit associations demonstrates that more work is needed to understand the attitudinal and cognitive factors relating to individuals' identities. Specifically, given that the values of the individual and the speech community lie at the heart of our awareness and control of sociolinguistic forms, a combination of production, evaluation and, in particular, self-reports are advocated to tease apart the complexities surrounding the indexical nature of social meaning and the circular role of identity.

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Appendices

Appendix A: Participant contact messages, information sheets and consent forms for English and Japanese subjects

Initial contact message, English participants

Research Participants Wanted

We are conducting an online survey about native speakers of Australian English's perception of the English language. If you were born in Australia and English is your native language you are welcome to participate this study.

The online survey will take approximately 20 minutes and you will be asked to rate displayed items on given scales from 1 to 5. There is also a brief demographic information section where you will be asked to provide your gender, age, birthplace, place where you grew up, occupation, and if you are a current student at University. The survey is anonymous and you can choose any location to complete the experiment.

If you would like to participate, please click the link below and you will be directed to the online survey.

[link to the experiment]

If you would like any more information regarding the survey, please contact Stacey Sherwood by email: s.sherwood@westernsydney.edu.au.

This study has been approved by the University of Western Sydney Human Research Ethics Committee (H12163). If you have any complaints or reservations about the ethical conduct of

this research, you may contact the Ethics Committee through the Research Ethics Officers (Tel: +61 2 4736 0229 or Email: humanethics@westernsydney.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Initial contact message, Japanese participants

日本語知覚知識についての研究参加者募集

日本語母語話者の日本語知覚知識に関するオンライン調査の研究参加者を募集しています。

参加者に必要な条件は、日本で生まれで母国語が日本語であることです。

このオンライン調査に参加していただいた場合、調査にかかる時間は20分ぐらいです。調査では、文章を読んで1から5のスケールに表示される 評価をしていただきます。また、参加者の 性別、年齢、出生地、育った場所、職業などについての簡単な質問項目もあります。オンライン調査は無記名で、参加者はオンライン調査をいつどこでするかご自分で選択することができます。

研究に参加していただける場合、下のリンクをクリックしてください。オンライン調査のアンケートのリンクにつながります。

[link to the experiment]

オンライン調査について更に詳しい情報を必要とされる場合は、ステイシー・シャーウッドまで次のメールアドレスにご連絡ください：

s.sherwood@westernsydney.edu.au

Participant Information Sheet, English participants

WESTERN SYDNEY
UNIVERSITY

Human Research Ethics Committee

Office of Research Services

The MARCS Institute for Brain,
Behaviour and Development

Participant Information Sheet (General)

Project Title: Social knowledge in the production and perception of linguistic variation.

UWS Ethics approval: H12163

Who is carrying out the study?
Stacey Sherwood (PhD Candidate) under the supervision of Dr. Robert Mailhammer and Dr. Mark Antoniou in the MARCS Institute for Brain, Behaviour and Development, Western Sydney University; Dr. Jason Shaw, Yale University; and Dr. Shigeto Kawahara, Keio University.

What is the study about?
The purpose is to investigate how native Australian English language listeners perceive English on social dimensions.

What does the study involve?
You will be shown a set of stimuli using online survey software, and will be asked to make a judgement about the social background of a speaker for a displayed item on a given scale from 1 to 5. There is also a brief demographic information section where you will be asked to provide your gender, age, birthplace, place where you grew up, occupation, and if you are a current student at University.

How much time will the study take?
The study will take approximately 20 minutes.

Will the study benefit me?
The study provides no immediate benefits to participants but the results are important for a scientific understanding of speech perception that may ultimately help improve understanding of language perception and production.

Will the study involve any discomfort for me?
No.

How is this study being paid for?
The study is unfunded.

Will anyone else know the results? How will the results be disseminated?
All aspects of the study, including results, will be confidential and only the researchers will have access to information on participants. This research is primarily part of a PhD project, and the

main outcome is a PhD thesis. Journal publications and media releases are also planned for the research to share the findings of the research to not only the scientific community but the wider public as well.

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and you can withdraw at any time without giving any reason and without any negative consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by forwarding the link to the survey and associated information sheet. If you do inform other people about the study and they would like more information, they can contact the chief investigator to discuss their participation in the research project. You are not obliged to forward the recruitment email to other eligible participants.

What if I require further information?
If you would like to know more information about any aspect of the study at any stage, please feel free to contact Stacey Sherwood at s.sherwood@westernsydney.edu.au

What if I have a complaint?
This study has been approved by the University of Western Sydney Human Research Ethics Committee. The Approval number is H12163.
If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel +61 2 4736 0229 Fax +61 2 4736 0013 or email humanethics@westernsydney.edu.au.
Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
If you agree to participate in this study, you may be asked to accept the terms of the Participant Consent Form.

Participant Information Sheet, Japanese participants

WESTERN SYDNEY
UNIVERSITY

Human Research Ethics Committee

Office of Research Services

The MARCS Institute for Brain,
Behaviour and Development

参加者情報シート

プロジェクト名：日本語母語話者の日本語知覚知識。

UWS 倫理承認：H12163

誰が調査を実施していますか。
マークスのインスティチュート・ブレーンとピヘイピアとデベロップメントのステ
イシー・シャーウッド（大学院生）です。ロバート・メールハンマー博士が研究監修
をしています。

関する研究とは何ですか。
この研究の目的は、日本語母語話者の日本語知覚知識を調べることです。特に、話
者の性別、社会的側面、及び会話の対話者といった要素が、どのように日本語話者
の知覚に影響を与えるかについて調べています。

この研究参加にはどのようなことが含まれますか。
研究参加者には、オンライン調査に答えていただきます。調査にかかる時間は 15 分
ぐらいです。1-5 のスケールで表示される文章を評価するように求められます。また、
簡単な参加者情報に関するセクションがあり、参加者の性別、年齢、出生地、育っ
た場所、職業について答えていただきます。

この研究参加にはどのくらい時間がかかりますか。
オンライン調査にかかる時間は 20 分ぐらいです。

この研究は、私に利益がありますか。

この研究は参加者に直接的な利益はありませんが、皆さんが答えてくださった調査の最終的な研究結果は 言語知覚と文産出の理解の向上に貢献し、更に音声知覚の科学的理解のためにも重要であります。

この研究参加は、不快感を伴いますか。
いいえ、不快感がありません。

この研究参加には、報酬がありますか。
いいえ、この研究参加には報酬はありません。

参加者が提供した情報は、誰がアクセスできますか。結果はどのように普及されるのですか。
参加者から提供ていただいた情報や記録は、全側面で匿名の機密情報となります。この研究を行っている研究者だけが参加者の情報にアクセスできるようになります。

研究参加を取り消すことはできますか。
この研究への参加は、皆さんの自由意志に基づくものです。ですから、同意書にサインしていただいた後からでも、同意や実験参加を取り消したりすることが可能です。その際、取り消しの理由などを提示する必要もございません

この研究について他の人に伝えてもいいですか。
はい、調査に関連した情報のリンクを転送することによって他の人に伝えることができます。さらに詳しい情報をご希望される方がいた場合は、研究プロジェクトの主任調査員に直接連絡していただけます。あなたは他の参加者に募集のメールを転送する義務はありません。

私がさらに情報が必要な場合はどうしたらいいですか。
研究のどの段階でも、研究の側面についての詳細をお知りになりたい場合は、
s.sherwood@westernsydney.edu.au を通してステイシー・シャーウッドまでお気軽にお問い合わせください。

もしこの研究に不満がある 場合はどうしたらいいですか。

この研究は、西シドニー大学のヒューマン研究倫理委員会によって承認されています。承認番号は H11020 です。

この研究についての苦情および、倫理上の懸念などがございましたら、電話+61 2 4736 0229 ファックス+61 2 4736 0013 またはメール hu manethics@westernsydney.edu.au　でリサーチサービスの事務所を通じて倫理委員会に連絡してください。

皆さんから提起されたすべての問題は、機密情報として調査し、その結果を皆さんに通知いたします。

この研究に参加していただく場合は、参加者の同意書の条件に同意を求められることがあります。
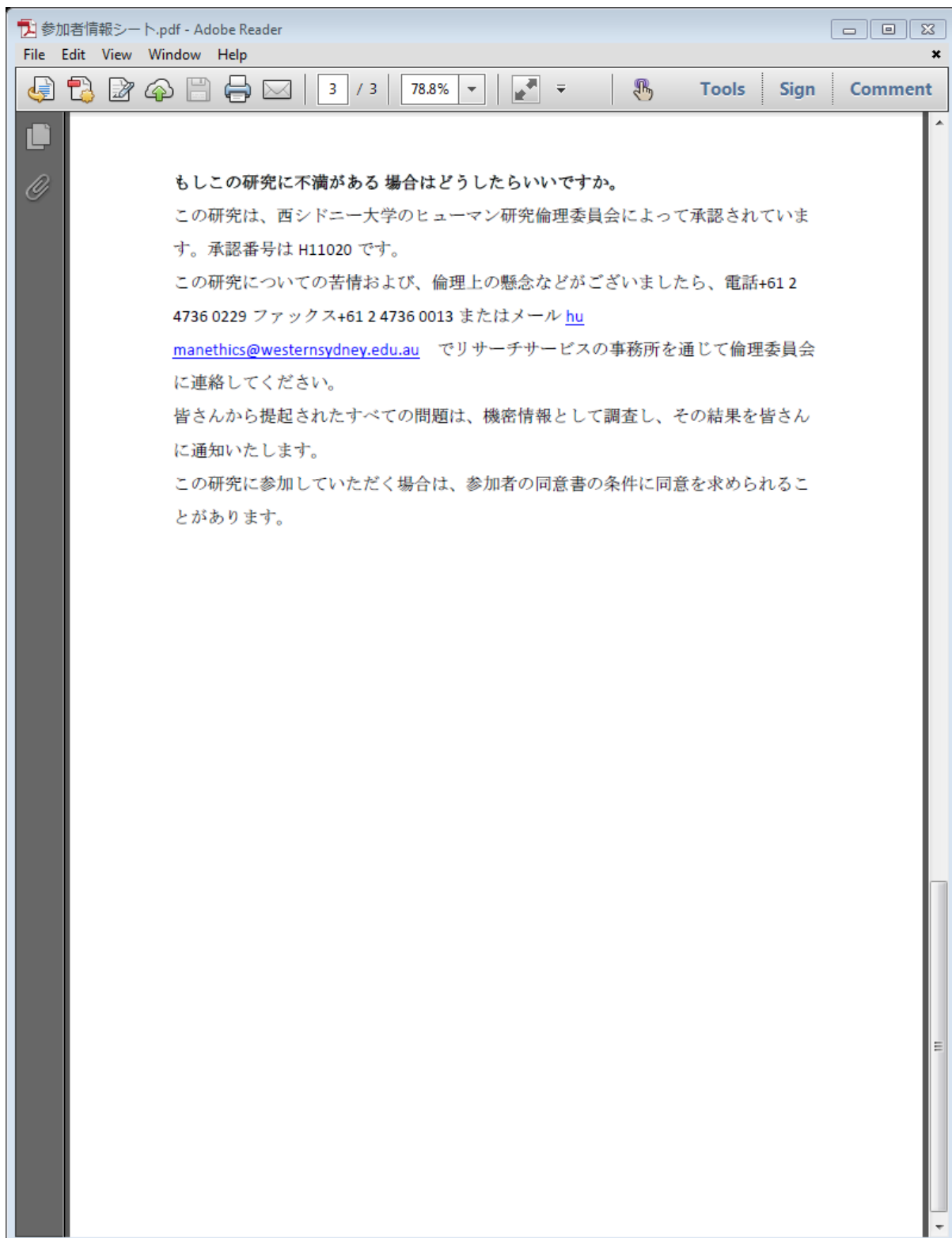
Online consent form, English participants

[Native listeners' perceptual knowledge of English]

We are conducting an online survey about native speakers of Australian English's perception of the English language. You will be asked to rate the displayed items on the given scales from 1-5. There is also a brief demographic information section where you will be asked to provide your gender, age, birthplace, place where you grew up, occ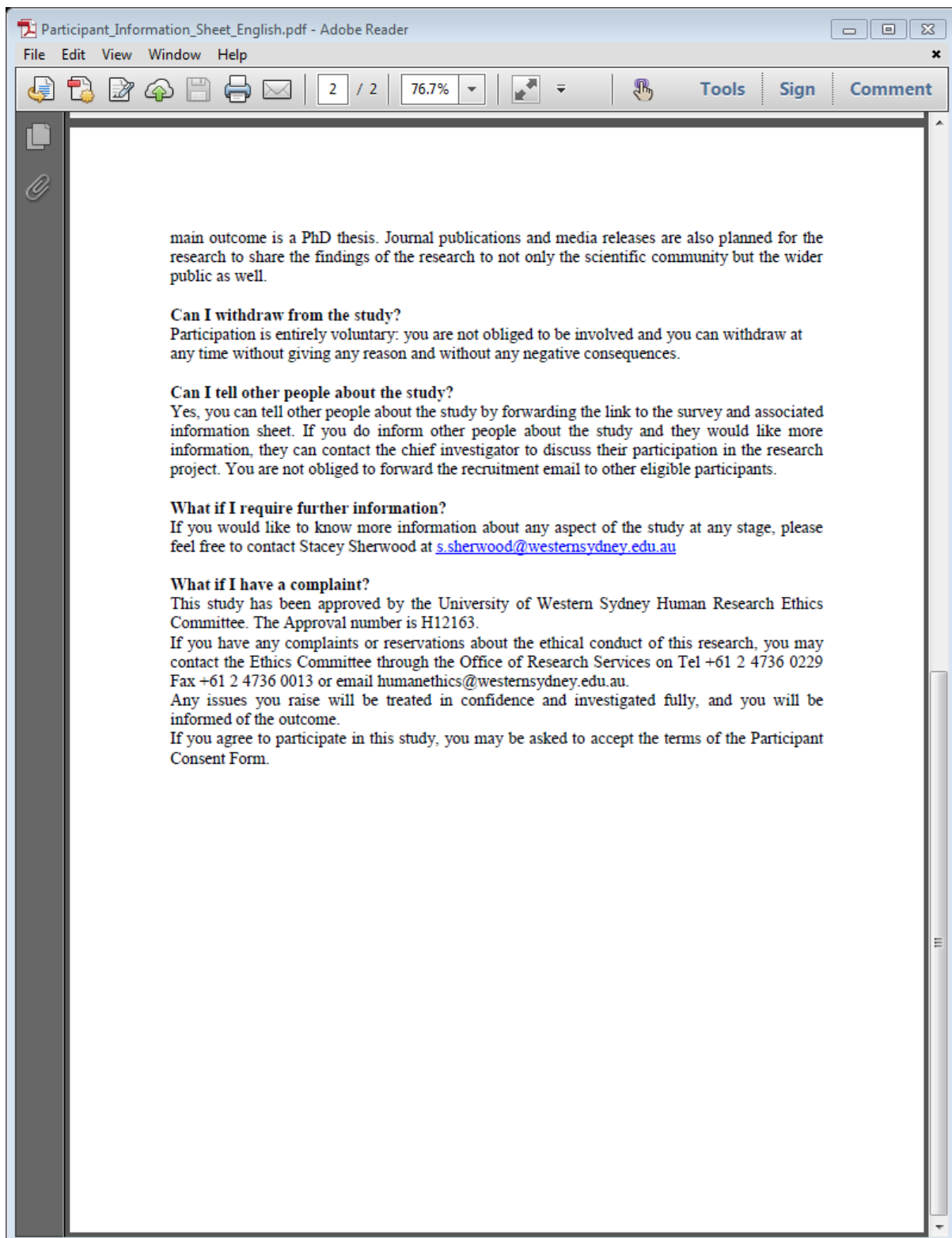upation, and if you are a current student at University. By participating, you will gain first-hand experience in linguistic research.

All aspects of the survey, including results, will be confidential and anonymous. Only the researchers will have access to information on participants. The findings from this survey will constitute part of a thesis and may be submitted for publication to a journal article, and presented at conferences. This survey will not provide any discomfort or harm to you. Participation is entirely voluntary: you are not obliged to be involved and - if you do participate - you can withdraw at any time without giving any reason and without any negative consequences.

This study has been approved by the University of Western Sydney Human Research Ethics Committee (H12163). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Research Ethics Officers (Tel: +61 2 4736 0229 or Email: humanethics@westernsydney.edu.au). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Your consent to participate is given once you click on the Start button.

[Start]

Online consent form, Japanese participants

[日本語母語話者の知覚知識]

私たちは、日本語母語話者の日本語知覚知識に関するオンライン調査を実施しています。調査では、日本語文についての評価を 1-5 で表示されるスケールを使って評価していただきます。出題文の中には、あなたが不自然だと感じる言い方が含まれている場合もありますが、直感で回答してください。また、参加者の 性別、年齢、出生地、育った場所、職業などについての簡単な質問項目もあります。参加していただくことにより、どのように言語学研究をおこなっているかについての経験も得ることができます。

参加者が提供してくださった全情報と記録は匿名の機密情報となります。また、参加者情報にアクセスできるのは、この研究を行っている研究者のみです。この調査結果は論文の一部として出版され、また学術雑誌、学会等などでも発表される予定です。この調査は、参加者が不快感や危害を感じたりする可能性はありません。この実験への参加は、皆さんの自由意志に基づくものです。ですから、同意書にサインしていただいた後からでも、同意や実験参加を取り消したりすることが可能です。その際、取り消しの理由などを提示する必要もありません。

この研究は、西シドニー大学のヒューマン研究倫理委員会によって承認されています。もし、この研究の倫理上の懸念や苦情などをお持ちの場合は、研究倫理担当役員を通じて倫理委員会にお問い合わせください（電話：**+61 2 4736 0229** または電子メール：humanethics@westernsydney.edu.au）。参加者から提起されたすべての問題は、機密情報として調査され、その 結果をお知らせいたします。

参加に同意する場合は、[>>]ボタンをクリックしてください。

Appendix B: Stimulus list used in Experiments 2-1 and 2-2

RANUKI		
code	RANUKI test items	Meaning
long form items		
rare-01	このバスは５０人の乗客が乗せられるのでは。	This bus can carry fifty passengers.
rare-02	そのドアが開けられるのでは。	I can open that door.
rare-03	名簿に名前が載せられるのでは。	(I) can put my name on the list.
rare-04	佐藤さんに本があげられるのでは。	(I) can give the book to Satou.
rare-05	別の本が見せられるのでは。	(I) can show a different one.
rare-06	土曜日にゴミが捨てられるのでは。	I can throw away garbage on Saturdays.
rare-07	ここでも電気がつけられるのでは。	I can turn on the lights.
rare-08	向こうで円がドルに替えられるのでは。	You can change money over there.
rare-09	近くでもタイ料理やベトナム料理が食べられるのでは。	(You) can eat Thai food and Vietnamese food around here.

rare-10	綿密な計画が立てられるのでは。	I can make a detailed plan.
short form items		
re-11	このバスは５０人の乗客が乗せれるのでは。	This bus can carry fifty passengers.
re-12	そのドアが開けれるのでは。	I can open that door.
re-13	名簿が名前に載せれるのでは。	(I) can put my name on the list.
re-14	佐藤さんに本があげれるのでは。	(I) can give the book to Satou.
re-15	別の本が見せれるのでは。	(I) can show a different one.
re-16	土曜日にゴミが捨てれるのでは。	I can throw away garbage on Saturdays.
re-17	ここでも電気がつけれるのでは。	I can turn on the lights.
re-18	向こうで円がドルに替えれるのでは。	You can change money over there.
re-19	近くでもタイ料理やベトナム料理が食べれるのでは。	(You) can eat Thai food and Vietnamese food around here.
re-20	綿密な計画が立てれるのでは。	I can make a detailed plan.

PRONOUN		
PROBABILISTIC: 僕・私		
code	僕 test items	Meaning
prob_pro_01	それは僕の本だ。	That's my book.
prob_pro_02	僕のミスだった。	My mistake.
prob_pro_03	僕はテニスがうまいよ。	I'm keen on tennis.
prob_pro_04	いや、僕はスポーツが苦手だ。	I'm bad at sports.
prob_pro_05	僕の時計はどこにあるかな。	Where's my watch?
prob_pro_06	僕は週末釣りに行く。	I'm going fishing.
prob_pro_07	これは僕のノートだ。	That's my notebook.
prob_pro_08	僕は心配性だ。	I do a lot of worrying.
prob_pro_09	僕は大丈夫。	I'm okay.
prob_pro_10	僕はコメディが好きだ。	I like comedies.
code	私 test items	Meaning
prob_pro_11	それはわたしの本だ。	That's my book.
prob_pro_12	わたしのミスだった。	My mistake.
prob_pro_13	わたしはテニスがうまいよ。	I'm keen on tennis.
prob_pro_14	いや、わたしはスポーツが苦手だ。	I'm bad at sports.

prob_pro_15	わたしの時計はどこにあるかな。	Where's my watch?
prob_pro_16	**わたし**は週末釣りに行く。	I'm going fishing.
prob_pro_17	これはわたしのノートね。	That's my notebook.
prob_pro_18	わたしは心配性ね。	I do a lot of worrying.
prob_pro_19	わたしは大丈夫。	I'm okay.
prob_pro_20	わたしはコメディーが好きよ。	I like comedies.
DETERMINISTIC :おれ・あたし		
code	俺 test items	Meaning
det_pro_01	俺、何歳に見えた？	How old do I look?
det_pro_02	俺に任せてください。	Let me handle this.
det_pro_03	俺をなめるなよ。	Don't make fun of me.
det_pro_04	俺は知らないよ。	I don't know.
det_pro_05	俺には意味が分からない。	It doesn't make sense to me.
det_pro_06	俺を忘れたの？	Have you forgotten about me?
det_pro_07	俺は渋谷で時計を買うつもり。	I'll buy a watch at the store.
det_pro_08	この箱は重すぎて俺には無理です。	This box is too heavy for me to carry.

det_pro_09	俺、夕食を作っておいたよ。	I cooked dinner.
det_pro_10	どうして俺？	Why me?
code	あたし test items	Meaning
det_pro_11	あたし、何歳に見えた？	How old do I look?
det_pro_12	あたしに任せてください。	Let me handle this.
det_pro_13	あたしをなめるなよ。	Don't make fun of me.
det_pro_14	あたしは知らないよ。	I don't know.
det_pro_15	あたしには意味が分からない。	It doesn't make sense to me.
det_pro_16	あたしを忘れたの？	Have you forgotten about me?
det_pro_17	あたしは渋谷で時計を買うつもり。	I'll buy a watch at the store.
det_pro_18	この箱は重すぎてあたしには無理です。	This box is too heavy for me to carry.
det_pro_19	あたし、夕食を作っておいたよ。	I cooked dinner.
det_pro_20	どうしてあたし？	Why me?
SENTENCE FINAL PARTICLE		
PROBABILISTIC: んだ・わ		

code	んだ test items	Meaning
prob_par_01	あれ、会議が始まるんだ。	Oh, the meeting is about to begin.
prob_par_02	元気がないんだ。	You look down.
prob_par_03	あら寝過ごしたんだ。	I overslept.
prob_par_04	知らないんだ。	I don't know.
prob_par_05	この箱、重いんだ。	This box is heavy.
prob_par_06	今、行くんだ。	I'm leaving.
prob_par_07	その靴がほしいんだ。	I want those shoes.
prob_par_08	あの和食が高いんだ。	The foods in Japanese restaurants are expensive.
prob_par_09	トムは日本に来るんだ。	Come here quickly.
prob_par_10	困ったんだ。	I don't know what to do now.
Code	わ test items	Meaning
prob_par_11	あれ、会議が始まるわ。	Oh, the meeting is about to begin.
prob_par_12	元気がないわ。	You look down.
prob_par_13	あら寝過ごしたわ。	I overslept.
prob_par_14	知らないわ。	I don't know.
prob_par_15	この箱、重いわ。	This box is heavy.
prob_par_16	今、行くわ。	I'm leaving.
prob_par_17	その靴がほしいわ。	I want those shoes.
prob_par_18	あの和食が高いわ。	The foods in Japanese restaurants are expensive.

prob_par_19	トムは日本に来るわ。	Come here quickly.
prob_par_20	困ったわ。	I don't know what to do now.
DETERMINISTIC ：ぜ・わよ		
code	ぜ test items	Meaning
det_par_01	すごくかっこいいの着ているぜ。	You're dressed really smart.
det_par_02	この焼き鳥おいしいぜ。	This yakitori is tasty.
det_par_03	バス、来なかったぜ。	The bus didn't come on time.
det_par_04	スキーに行くぜ。	Let's go skiing often.
det_par_05	今家にいるぜ。	Let's go home.
det_par_06	これから一生懸命やるぜ。	I will do my best from now on.
det_par_07	できるぜ。	You can do it.
det_par_08	いや、だって遠いぜ。	But it's far away.
det_par_09	想像以上に難しいぜ。	It's a lot more difficult than I imagined.
det_par_10	おかしいぜ。	This is strange!
code	わよ test items	Meaning
det_par_11	すごくかっこいいの着ているわよ。	You're dressed really smart.
det_par_12	この焼き鳥おいしいわよ。	This yakitori is tasty.

det_par_13	バス、来なかったわよ。	The bus didn't come on time.
det_par_14	スキーに行くわよ。	Let's go skiing often.
det_par_15	今家にいるわよ。	Let's go home.
det_par_16	これから一生懸命やるわよ。	I will do my best from now on.
det_par_17	できるわよ。	You can do it.
det_par_18	いや、だって遠いわよ。	But it's far away.
det_par_19	想像以上に難しいわよ。	It's a lot more difficult than I imagined.
det_par_20	おかしいわよ。	This is strange!
LEXICAL		
code	male lexical control items	Meaning
lex_control-01	私の名は弥太郎。	My name is Yatarou.
lex_control-02	ネクタイを忘れてきたよ。	I forgot my necktie
lex_control-03	最近、彼女にイライラする。	She drives me mad.
lex_control-04	このプラモデルは掘り出し物だよ。	This plastic model is a bargain.
lex_control-05	私の髭剃り、どこにある？	Where is my electric shaver?
lex_control-06	ブリーフケースをネットで買った。	I bought a briefcase online.
lex_control-07	私はサラリーマン。	I'm a Salaryman.
lex_control-08	パチンコが好き。	I like pachinko.

lex_control-09	私は主夫。	I'm a house-husband.
lex_control-10	昨日床屋へ行った。	Yesterday I went to the barber.
code	female lexical control items	Meaning
lex_control-11	私の名は桜。	My name is Sakura.
lex_control-12	ネックレスを忘れてきたよ。	I forgot my necklace.
lex_control-13	最近、彼氏にイライラする。	He drives me mad.
lex_control-14	このドレスは掘り出し物だよ。	This dress is a bargain.
lex_control-15	私のブレスレット、どこにある？	Where is my bracelet?
lex_control-16	化粧品をネットで買った。	I bought makeup online.
lex_control-17	私はホステス。	I'm a hostess.
lex_control-18	買い物が好き。	I like shopping.
lex_control-19	私は主婦。	I'm a housewife.
lex_control-20	昨日美容院へ行った。	Yesterday I went to the hairdresser.

Appendix C: Experiment 3-1 (Life-Stage) Evaluation Stimuli

Yeah-no (test items)		
yn-1	Yeah no, it's good	yeah-no
yn-2	Yeah no, they'll love it	yeah-no
yn-3	Yeah no, it's been fantastic	yeah-no
yn-4	Yeah no, it was really hot	yeah-no
yn-5	Yeah no, I think that could work	yeah-no
yn-6	Yeah no, they're right	yeah-no
yn-7	Yeah no, there's a lot happening this weekend	yeah-no
yn-8	Yeah no, fair enough.	yeah-no
yn-9	Yeah no, I'm interested	yeah-no
yn-10	Yeah no, that'd be right up there with last week	yeah-no
yn-11	Yeah, it's good	yeah
yn-12	Yeah, they'll love it	yeah
yn-13	Yeah, it's been fantastic	yeah
yn-14	Yeah, it was really hot	yeah
yn-15	Yeah, I think that could work	yeah
yn-16	Yeah, they're right	yeah
yn-17	Yeah, there's a lot happening this weekend	yeah
yn-18	Yeah, fair enough.	yeah
yn-19	Yeah, I'm interested	yeah
yn-20	Yeah, that'd be right up there with last week	yeah
Lexical (control items)		
lex_control-1	I have to go to class tomorrow	student
lex_control-2	I was tired from doing my assignment	student
lex_control-3	I am supposed to go on a school trip next week	student
lex_control-4	I was called in by the principal earlier	student
lex_control-5	I think the new teacher will be here soon	student
lex_control-6	I like to go to lunch with my classmates	student
lex_control-7	I don't graduate until next year	student
lex_control-8	I only had one subject to attend today	student
lex_control-9	That guy was in my class last year	student

lex_control-10	My grandparents come visit me once a month	student
lex_control-11	I have to go to work tomorrow	employee
lex_control-12	I was tired from doing overtime	employee
lex_control-13	I am supposed to go on a business trip next week	employee
lex_control-14	I was called in by the manager earlier	employee
lex_control-15	I think the new boss will be here soon	employee
lex_control-16	I like to go to lunch with my co-workers	employee
lex_control-17	I don't retire until next year	employee
lex_control-18	I only had one meeting to attend today	employee
lex_control-19	That guy was in my division last year	employee
lex_control-20	My grandkids come visit me once a month	employee

Appendix D: Experiment 3-2 (Gender) Evaluation Stimuli

Yeah-no (test items)		
yn-1	Yeah no, it's good	yeah-no
yn-2	Yeah no, they'll love it	yeah-no
yn-3	Yeah no, it's been fantastic	yeah-no
yn-4	Yeah no, it was really hot	yeah-no
yn-5	Yeah no, I think that could work	yeah-no
yn-6	Yeah no, they're right	yeah-no
yn-7	Yeah no, there's a lot happening this weekend	yeah-no
yn-8	Yeah no, fair enough.	yeah-no
yn-9	Yeah no, I'm interested	yeah-no
yn-10	Yeah no, that'd be right up there with last week	yeah-no
yn-11	Yeah, it's good	yeah
yn-12	Yeah, they'll love it	yeah
yn-13	Yeah, it's been fantastic	yeah
yn-14	Yeah, it was really hot	yeah
yn-15	Yeah, I think that could work	yeah
yn-16	Yeah, they're right	yeah
yn-17	Yeah, there's a lot happening this weekend	yeah
yn-18	Yeah, fair enough.	yeah

yn-19	Yeah, I'm interested	yeah
yn-20	Yeah, that'd be right up there with last week	yeah

Lexical (control items)		
lex_control-1	I went to the barber	male
lex_control-2	I like soccer	male
lex_control-3	I'm a stay at home dad	male
lex_control-4	I left my necktie at home	male
lex_control-5	The football tryouts went great today	male
lex_control-6	I got a new pair of cufflinks for my birthday	male
lex_control-7	I've had this briefcase since I started working here	male
lex_control-8	I use a lot of cologne when I go out to dinner	male
lex_control-9	I'm working as a waiter	male
lex_control-10	I got a stain on my new vest	male
lex_control-11	I went to the hairdresser	female
lex_control-12	I like shopping	female
lex_control-13	I'm a stay at home mum	female
lex_control-14	I left my necklace at home	female
lex_control-15	The netball tryouts went great today	female
lex_control-16	I got a new pair of earrings for my birthday	female
lex_control-17	I've had this handbag since I started working here	female
lex_control-18	I use a lot of perfume when I go out to dinner	female
lex_control-19	I'm working as a waitress	female
lex_control-20	I got a stain on my new blouse	female

Appendix E: Experiment 3-1 and 3-2 Evaluation Stimuli Fillers

Fillers (filler items)	
mf-1	The boys have had a good year
mf-2	Where's my bike?
mf-3	I had a lot of fun on my holiday
mf-4	This box is too heavy to lift
mf-5	The bus is running late

mf-6	I went out for dinner with my family for my birthday
mf-7	I had lots of pets when I was a kid
mf-8	My brother ended up getting grounded
mf-9	I prefer swimming in the summer
mf-10	I like to jog in the morning
mf-11	My dogs are well-trained
mf-12	I heard a lot of thunder last night
mf-13	I going to pick up a parcel this afternoon
mf-14	I think we should start work on our project right away
mf-15	It was cloudy over my house this morning
mf-16	My dad was caught in traffic today
mf-17	I definitely prefer tea over coffee
mf-18	I always oversleep
mf-19	I had a big lunch today
mf-20	That movie was pretty great
mf-21	I still try to keep in touch with my friends
mf-22	I like to make my bed in the mornings
mf-23	I have to meet a friend at the library
mf-24	I always get a chocolate milkshake after practice
mf-25	My favourite meat is steak
mf-26	I don't drink much alcohol
mf-27	I have a chisel but it's blunt
mf-28	I like watching comedies
mf-29	I get a lot of headaches
mf-30	I want to paint the lounge room a better colour
mf-31	I'll be going home for the weekend
mf-32	I didn't sleep well last night
mf-33	I had bacon and eggs for breakfast
mf-34	I'm saving money so that I can buy a new car
mf-35	I know what I'll do
mf-36	I can't read when it's this noisy
mf-37	The cheesecake was delicious
mf-38	I'll take you to the station
mf-39	I'll let you know if its cancelled

mf-40	I just saw her at the bus stop
ff-1	I'll make the dessert
ff-2	I think I look fat in this
ff-3	I'll have to start cooking dinner soon
ff-4	Of course I can come to dinner
ff-5	Actually, I've never been skiing
ff-6	I know how to get there
ff-7	I prefer aeroplanes because I can sleep easily
ff-8	He said that Thursday is best for the meeting
ff-9	I like the blue sweater the best
ff-10	After that we just went home
ff-11	I had a driving test on Thursday
ff-12	My two cats like to sleep on my bed
ff-13	My commute takes 45 minutes
ff-14	My son likes basketball.
ff-15	He was sick so we had a substitute teacher.
ff-16	I can't tell yet which restaurant I like better
ff-17	Dinner is ready
ff-18	I go to the gym every day
ff-19	If you eat too much, you'll get sick
ff-20	The only thing I need to be happy is free time.
ff-21	My grandmother knitted me a blanket for my birthday
ff-22	I'll use this one
ff-23	I'll leave in thirty minutes
ff-24	They sometimes play baseball.
ff-25	I don't know what to do!
ff-26	Long time no see!
ff-27	You look tired.
ff-28	See you later.
ff-29	We should go to the park
ff-30	I still can't sleep
ff-31	One should not listen to the opinions of bad friends.
ff-32	I wonder what the population is
ff-33	I feel stupid being forced in to buying expensive things like this

ff-34	His new car is really something
ff-35	She is my girlfriend
ff-36	I'm going to the ballet
ff-37	See you at lunch
ff-38	Don't worry
ff-39	I'm full
ff-40	This is a recent photo

Appendix F: Self report stimulus list used in Experiments 3-1 and 3-2

Instruction	Which of these options would you be most likely to use to reply to the speaker?
Question 1	"Do you like jogging?"
Response A	Yeah no, sometimes during the afternoon.
Response B	Yeah, sometimes during the afternoon.
Response C	No, sometimes during the afternoon.
Response D	Sometimes during the afternoon.
Question 2	"I think we should begin our project right away."
Response A	Yeah no, you're totally right.
Response B	Yeah, you're totally right.
Response C	No, you're totally right.
Response D	You're totally right.
Question 3	"Do you drink much tea?"
Response A	Yeah no, I mostly drink coffee.
Response B	Yeah, I mostly drink coffee.
Response C	No, I mostly drink coffee.
Response D	I mostly drink coffee.
Question 4	"That movie wasn't very good."
Response A	Yeah no, it was pretty awful.
Response B	Yeah, it was pretty awful.
Response C	No, it was pretty awful.
Response D	It was pretty awful.
Question 5	"How did your tryouts go?"
Response A	Yeah no, I think I did pretty good.
Response B	Yeah, I think I did pretty good.
Response C	No, I think I did pretty good.
Response D	I think I did pretty good.

Question 6	"Do you think you're going to start training soon?"
Response A	Yeah no, I've been thinking about that for a while now.
Response B	Yeah, I've been thinking about that for a while now.
Response C	No, I've been thinking about that for a while now.
Response D	I've been thinking about that for a while now.
Question 7	"Did you go in today?"
Response A	Yeah no, but only for a couple of hours.
Response B	Yeah, but only for a couple of hours.
Response C	No, but only for a couple of hours.
Response D	But only for a couple of hours.
Question 8	"Do you see your friends often?"
Response A	Yeah no, they visit me every now and then.
Response B	Yeah, they visit me every now and then.
Response C	No, they visit me every now and then.
Response D	They visit me every now and then.
Question 9	"That was fantastic!"
Response A	Yeah no, I was in pretty good form.
Response B	Yeah, I was in pretty good form.
Response C	No, I was in pretty good form.
Response D	I was in pretty good form.
Question 10	"Have you tried the new pizza yet?"
Response A	Yeah no, I will next week.
Response B	Yeah, I will next week.
Response C	No, I will next week.
Response D	I will next week.

Appendix G: Stimulus list used in Experiment 4-2

Sentence	Meaning	Condition	Variation
どう思う？	What do you think?	PLAIN	Interrogative
どう思いますか？	What do you think?	POLITE	Interrogative
電話番号知ってる？	Do you know the number?	PLAIN	Interrogative
電話番号知っていますか？	Do you know the number?	POLITE	Interrogative
一緒にお昼ご飯食べない？	Shall we eat lunch together?	PLAIN	Interrogative
一緒にお昼ご飯食べませんか？	Shall we eat lunch together?	POLITE	Interrogative
いつ出かけるの？	When will you leave?	PLAIN	Interrogative
いつ出かけますか？	When will you leave?	POLITE	Interrogative
誰に手紙を書くの？	Who will you write the letter too?	PLAIN	Interrogative
誰に手紙を書くのですか？	Who will you write the letter too?	POLITE	Interrogative
先生は生徒に本を送る。	The teacher will send the book to students.	PLAIN	Statement
先生は生徒に本をお送ります。	The teacher will send the book to students.	POLITE	Statement
田中さんを待っている。	(I'm) going to wait for Ms. Tanaka.	PLAIN	Statement
田中さんを待っています。	(I'm) going to wait for Ms. Tanaka.	POLITE	Statement
このコーヒーは変な味がする。	The coffee tastes bad.	PLAIN	Statement
このコーヒーは変な味がします。	The coffee tastes bad.	POLITE	Statement
明日日本に行く。	(I'm) going to Japan tomorrow.	PLAIN	Statement
明日日本に行きます。	(I'm) going to Japan tomorrow.	POLITE	Statement
中村さんがいる。	Ms. Nakamura is here.	PLAIN	Statement
中村さんがいます。	Ms. Nakamura is here.	POLITE	Statement
どの帽子があなたの？	Which hat is yours?	PLAIN	Interrogative

どの帽子があなたのですか？	Which hat is yours?	POLITE	Interrogative
今何時？	What time is it?	PLAIN	Interrogative
今何時ですか？	What time is it?	POLITE	Interrogative
スキー好き？	Do you like skiing?	PLAIN	Interrogative
スキー好きですか？	Do you like skiing?	POLITE	Interrogative
飲み物は何がいい？	What kind of drink would you like?	PLAIN	Interrogative
飲み物は何がいいですか？	What kind of drink would you like?	POLITE	Interrogative
あれは何？	What's that?	PLAIN	Interrogative
あれは何ですか？	What's that?	POLITE	Interrogative
姉は映画に夢中だ。	My sister is crazy about movies.	PLAIN	Statement
姉は映画に夢中です。	My sister is crazy about movies.	POLITE	Statement
私はテニス部員。	I'm in the tennis club.	PLAIN	Statement
私はテニス部員です。	I'm in the tennis club.	POLITE	Statement
このチームが好き。	I like this team.	PLAIN	Statement
このチームが好きです。	I like this team.	POLITE	Statement
最近、私仕事しすぎ。	(I'm) overworked recently.	PLAIN	Statement
最近、私仕事しすぎです。	(I'm) overworked recently.	POLITE	Statement
私は左利き。	(I'm) left handed.	PLAIN	Statement
私は左利きです。	(I'm) left handed.	POLITE	Statement

Appendix H: Preliminary report: Comparing Japanese individuals' responses between scalar and binary procedural designs

The following preliminary report was designed to test the hypothesis that the findings of Experiment 2-1 were a type-two error, whereby the methodological procedure, the adjective scale, failed to detect a gender effect. The hypothesis was based on the findings of previous research which demonstrated that Japanese participants more frequently reported difficulty with Likert scales, and more frequently selected the midpoint of the scale (Lee et al., 2002). Thus, two versions of Experiment 2-1 (a scalar design H-1; and a binary design H-2) were conducted to establish if there was a difference in participant responses between varying procedures.

Experiment H-1: Scalar

Experiment H-1: Method

Participants

63 native Japanese participants (30 male, 33 female) took part in this experiment, with an age range of 18 to 75 years at the time of testing (see Table H-1). They had grown up in a variety of prefectures, including, Tokyo, Saitama, Yamaguchi and Kagawa. 35 participants were students at the time of testing, and 28 volunteered that they were employed (not students).

Participant gender	18-25	26-35	36-45	46-55	56-65	66-75	Total
Males	17	7	3	1	1	1	30
Females	15	8	4	4	2	0	33

Table H-1. Experiment H-1: The number of participants according to age and gender.

The participants performed the perception task in the format of an online survey administered by Qualtrics online survey software. All instructions, materials and stimuli were presented in Japanese. This procedure allowed the participant the freedom to choose the device they performed the procedure on (computer or mobile device), the location and the time of day they wanted to perform the task. By providing these freedoms for the participants and removing an interviewer from the procedure, we hoped to avoid potentially eliciting socially desired responses as opposed to naturalistic data.

The participants were instructed to use a five-point adjective scale to indicate if the sentence was more likely said by a male (1) or by a female (5). The odd number provided participants the opportunity to indicate a neutral judgement of the sentences, an option that would not be possible with a force choice method. Each sentence was presented in written form to the participant one at a time in pseudo-random order. Written speech was used as opposed to audio recordings to ensure that participants made their judgements on the sentences alone, without the use of acoustic characteristics to inform their judgements. For example, vowel formant frequencies are lower, bandwidths are wider and the fundamental frequency is generally lower for male speakers (Peterson & Barney, 1952). It is possible to examine ra-deletion through written stimuli as the phenomenon has been shown to occur both in speech and in casual and informal writing (Ito & Mester, 2004).

The complete stimulus set presented during the task included 120 sentences comprising four different condition types; RANUKI, PRONOUN, SENTENCE FINAL PARTICLE and LEXICAL. The RANUKI condition was designed to test if participants could identify the gender of a speaker from that speaker's use of potential verb suffix allomorphs alone. The other three conditions did not contain potential verb suffix allomorphs, but instead used pronoun choices, lexical choices and sentence final particles to evoke participants' perceptions of gender. These

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additional conditions were designed to keep participants naïve about the *ra*-deletion stimulus items being tested. Furthermore, we would be able to compare the predicted gender effect for *ranuki* (see Section 2.2 for details), with other known gender effects which influence pronoun choices (Ide & McGloin, 1990) and sentence final particle choices (e.g., Ide, 1979). All stimuli sentences were presented in plain form in an effort to avoid evoking gender attitudes through distinctions in politeness (Ide, 1990). Note that in Japanese, plain form refers to one of the two grammatically expressed clause final forms that marks the absence of addressee honorifics, namely, *-ru.* The other, the polite form *-masu,* marks the presence of addressee honorifics.

Ten vowel-final verbs were chosen as the RANUKI stimuli. The verbs appeared in both the long form of the potential verb suffix, *-rare*, and the short form of the potential verb suffix, *-re*. All RANUKI stimuli verbs had *e* as the final vowel, were measured as two morae in length, were monomorphemic, were main clauses, were positive sentences, and were preceded by the case particle *ga* to avoid any confusion of the semantic meaning (10 verbs X 2 variations (long, short)). This allowed us to control for the previously identified linguistic factors that are known to influence the distribution of the allomorphs (Matsuda, 1993; Sano, 2009, 2011).

20 sentences were chosen as PRONOUN stimuli, with two subgroups within the condition, namely, DETERMINISTIC and PROBABILISTIC. The ten sentences used in the DETERMINISTIC subgroup included the first-person pronouns 俺 *ore,* used primarily by male speakers, and あたし *atashi*, which is used primarily by female speakers (10 sentences X 2 deterministic pronoun variations (male, female)). While the ten sentences in the PROBABILISTIC subgroup included the first-person pronoun ぼく *boku,* which is preferred by male speakers, but can also be used by female speakers, and わたし *watashi*, which is preferred by female speakers, but is also used by male speakers (10 sentences X 2 probabilistic pronoun variations (male, female)). Due to the rarity of the DETERMINISTIC pronouns occurring in the speech of the opposite gender,

we expected to see a larger effect size in the DETERMINISTIC subgroup results compared to the PROBABILISTIC subgroup.

20 sentences were chosen as SENTENCE FINAL PARTICLE stimuli, again including the DETERMINISTIC and PROBABILISTIC subgroups. The ten sentences used in the DETERMINISTIC subgroup included the sentence final particle ぜ *ze,* used primarily by male speakers, and わよ *wayo*, which is used primarily by female speakers (10 sentences X 2 deterministic sentence final particle variations (male, female)). While the ten sentences in the PROBABILISTIC subgroup included the sentence final particle んだ *nda,* which is preferred by male speakers, but can also be used by female speakers, and わ *wa*, which is preferred by female speakers, but is also used by male speakers (10 sentences X 2 probabilistic sentence final particle variations (male, female)). Again, due to the rarity of the DETERMINISTIC sentence final particles occurring in the speech of the opposite gender, we expected to see a larger effect size in the DETERMINISTIC subgroup results compared to the PROBABILISTIC subgroup.

The remaining 20 stimuli made up the LEXICAL stimuli (10 sentences X 2 lexical variations (male, female). An example of a lexical choice more likely said by a male was 主夫 'house husband', and the female variation for this sentence was 主婦 'housewife'. While lexical features other than pronoun and vulgar expressions are not often examined for gender effects, they were included in this study to act as filler sentences that could be compared with the other test conditions. All stimuli items were checked for inter-rater reliability by two Japanese native speakers to confirm the sentences reflected natural speech and were grammatically correct.

The second section of the survey was designed to collect participants' demographic data including their age, gender, occupation, birthplace, where they grew up, and whether they were a student studying at a university. This information was collected in the second section of the survey to both allow participants to fully understand the task before asking them to provide

their demographic information, and to avoid any possible biasing effect of the survey on gender responses.

Experiment H-1: Results

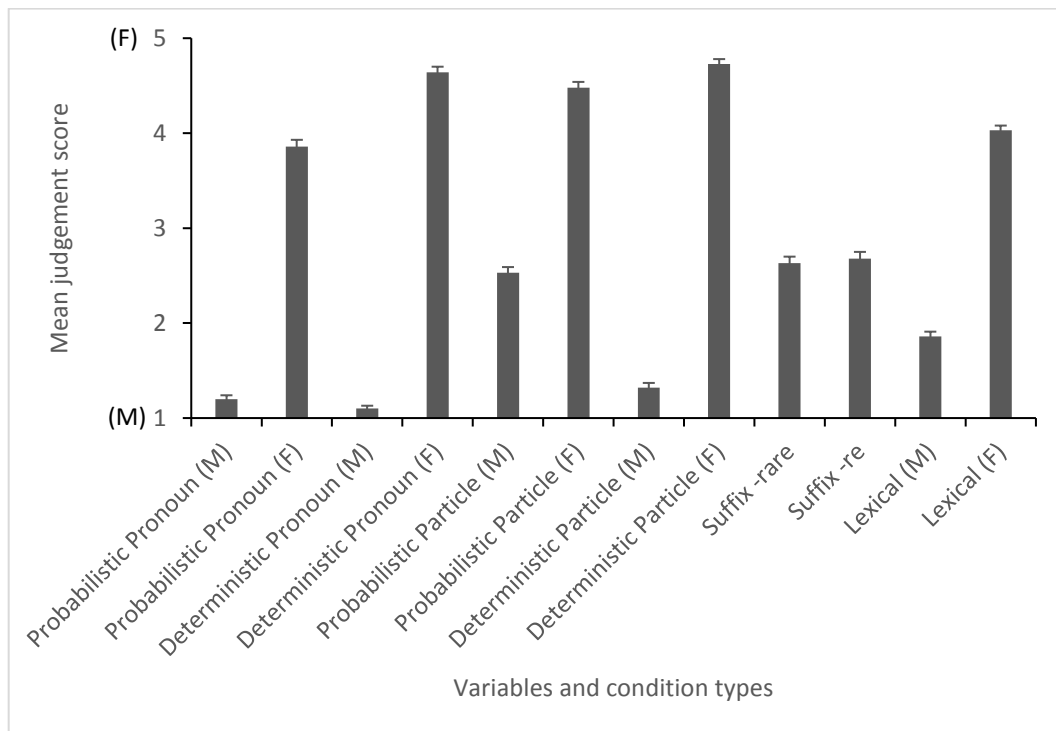*Mean judgement scores by condition*

Figure H-1. Experiment H-1: Mean judgement score by condition.
Judgement scores ranged from 1 – Male (M) to 5 – Female (F). Error
bars represent standard error.

Figure H-1 shows the mean adjective scale judgement scores by condition, including the subgroups of the PRONOUN and SENTENCE FINAL PARTICLE conditions. The higher mean judgement scores indicate that participants judged the sentences as more likely said by a female speaker, while lower mean judgement scores are more likely judged by the participants as being said by a male speaker. The results of the PRONOUN, SENTENCE FINAL PARTICLE and LEXICAL conditions are in line with previous research (Ide, 1979; Ide & McGloin, 1990). The items in the DETERMINISTIC subgroups for both the PRONOUN condition and the SENTENCE FINAL PARTICLE condition are clearly identified as more likely said by a male or female speaker. This

is also consistent for the PROBABILISTIC subgroups for both the PRONOUN condition and the SENTENCE FINAL PARTICLE conditions and the LEXICAL condition. The effect size is however smaller for the PROBABILISTIC subgroups and the LEXICAL condition, but it is still far stronger than the RANUKI condition. Surprisingly, there is almost no difference in mean judgements for long form items, *-rare* (2.63)*,* and short form items, *-re* (2.68). This is despite the significant gender effects reported in both the corpus study results and the self-report results. This result was further investigated by examining the distribution of responses.

A gender score was created to examine if the overall speech community is not sensitive to the gender effect, or if there are some individuals who believe *ra*-deletion indicates female and others who think *ra*-deletion indicates male. To calculate the gender score, the participant's mean *-re* score was subtracted from their mean *-rare* score. Positive gender scores suggest the participant perceives *-re* items as more likely said by males. And negative gender scores suggest the participant perceives the *-re* items are more likely said by females.

Gender score distribution for RANUKI test items.
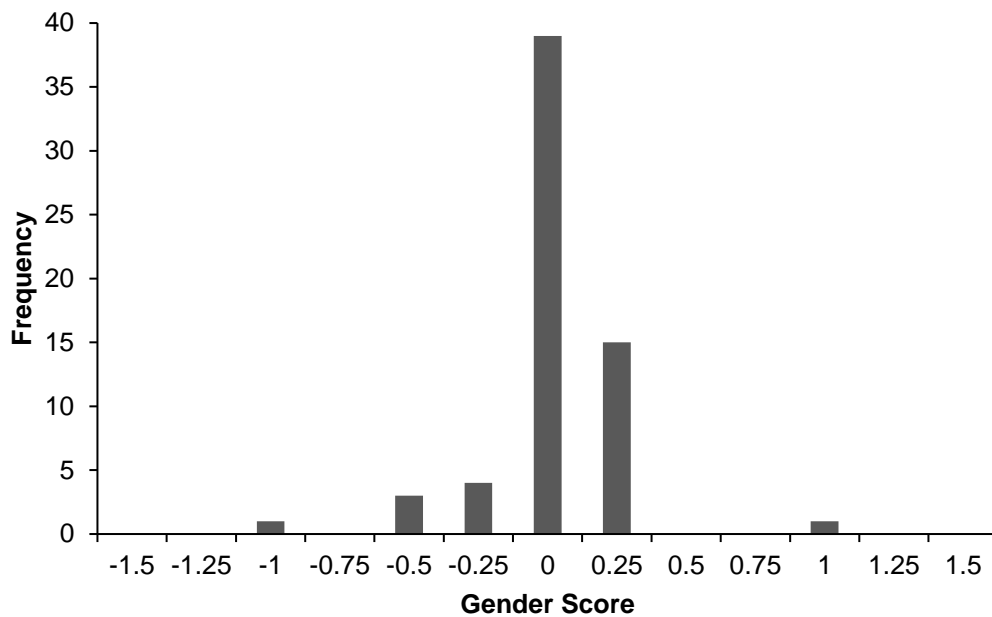
Figure H-2. Experiment H-1: Distribution of participants' gender scores. Positive gender scores indicate the participant judged ra-deletion sentences as more likely said by a male speaker.

Figure H-2 shows the frequency distribution of the gender scores for each participant. The majority of gender scores are clustered around the mean gender score (-0.5), indicative of a normal unimodal distribution. This suggests that the majority of participants are not sensitive to a gender effect, i.e., the participants are unable to identify the gender of a speaker through potential suffix allomorphs alone. There are however individuals who do use potential suffix allomorphs to identify the gender of the speaker. Four participants had a negative gender score that was less than one standard deviation below the mean (<-0.6). And one participant had a positive gender score that was greater than one standard deviation above the mean. Table H-2 provides the demographic breakdown for each of these participants. There were no conclusive patterns to suggest an underlying reason that might explain why these particular individuals were sensitive to an effect of gender on *ra*-deletion.

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Gender Score	Age	Gender	Life Stage	Birthplace	Raised in	Occupation
-0.7	18-25	Male	Student	Tokyo	Tokyo	
-0.7	18-25	Female	Student	Miyagi	Miyagi	
-0.6	46-55	Female	Worker	Osaka	Osaka	School administration
-1.2	36-45	Female	Worker	Tokyo	Tokyo	Salaryman
0.8	46-55	Female	Worker	Kanagawa	Tokyo	Housewife

Table H-2. Experiment H-1: Qualitative analysis of participants with a gender score greater than and less than one standard deviation from the mean.

Despite the significant main effect of gender on *ra*-deletion distribution found in the corpus studies (Matsuda, 1993; Sano, 2009, 2011) and in self-reports (Sherwood, 2015), the results of Experiment H-1 suggest that the gender effect is not overt in awareness. Specifically, it does not appear to be the case that Japanese native speakers are able to identify the gender of a speaker through potential suffix allomorphs alone, a least, not in a context free-way. The possibility that this result is a type two error, whereby the methodological procedure, the adjective scale, failed to detect a gender effect is explored in the following experiment (H-2). This possibility is supported by previous research which demonstrated that Japanese participants more frequently report difficulty with adjective scales, and more frequently select the midpoint of the scale (Lee et al., 2002). The change in procedure for Experiment H-2 from an adjective scale to binary choices will therefore be able to test whether there is in fact no gender effect in perception, or if the null result is caused by the methodological design of Experiment H-1.

Experiment H-2: Binary

Experiment H-2: Method

Participants

56 native Japanese participants (24 male, 32 female) participated in Experiment H-2, with an age range of 18 to 65 years (see Table H-3). 21 participants reported that they were students at the time of testing, while 35 reported that their life stage was a working adult.

Participant gender	18-25	26-35	36-45	46-55	56-65	66-75	Total
Males	13	3	3	4	1	0	24
Females	26	0	1	5	0	0	32

Table H-3. Experiment H-2: The number of participants according to age and gender.

Stimuli and Procedure

The design of Experiment H-2 was identical to Experiment H-1, with the exception of the response procedure. In this task, the participants were asked to use the forced binary choices (male, female) to indicate if the sentence was more likely said by a male or a female speaker.

Predictions

For Experiment H-2, the expectation was a small difference in gender judgements of *ra-*deletion found in Experiment H-1 to increase in size. Specifically, short form items should be more likely judged as being said by a female speaker. This result would then be in line with the gender effect previously identified in the corpus results and would be consistent with

research that suggests Japanese native speakers have difficulty using adjective scales to record their judgements.

Experiment H-2: Results
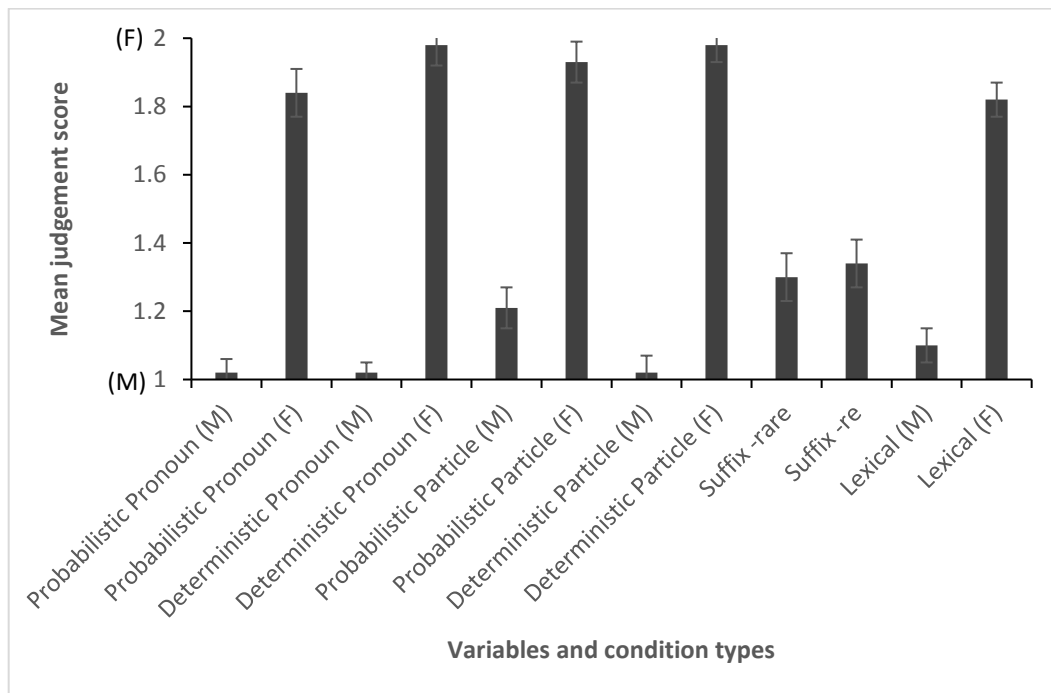
Mean judgement scores by condition

Figure H-3 Mean judgement score by condition. Ra-deletion test items are shown in darker pattern. Error bars indicate 95% confidence intervals. A higher judgement score indicates that participants judged the sentences as more likely said by a female speaker

The mean binary judgement scores for Experiment H-2 are shown in Figure H-3. As with the results reported in Experiment H-1, higher mean judgement scores indicate that participants judged the sentences as more likely said by a female speaker, while lower mean judgement scores are more likely judged by the participants as being said by a male speaker. The results of Experiment H-2 are largely consistent with those of Experiment H-1. Items in the DETERMINISTIC subgroups for both the PRONOUN condition and the SENTENCE FINAL PARTICLE condition are clearly identified as more likely said by a male or female speaker. And items in

the PROBABILISTIC subgroups and the LEXICAL condition are consistent with this pattern, despite showing smaller effect sizes. Again, we found a very small difference in the mean judgement scores for long form items, *-rare* (1.30)*,* and short form items, *-re* (1.34). While this small difference is in the same direction as Experiment H-1 and the corpus study results, i.e., short form items were more likely judged as being said by a female speaker, the difference is not statistically significant.
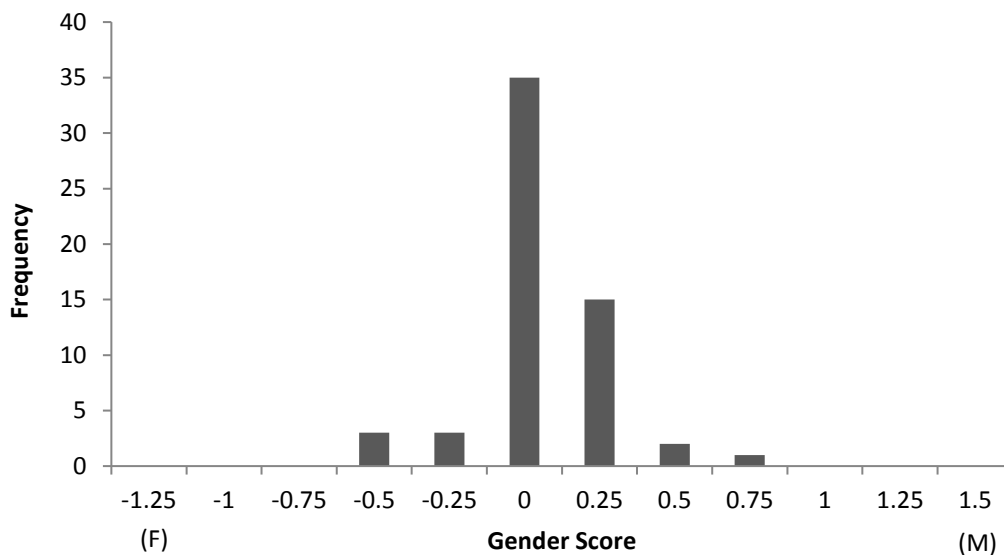
Gender score distribution for RANUKI test items.

Figure H-4: Distribution of participants' gender scores. Positive gender scores indicate the participant judged ra-deletion sentences as more likely said by a male speaker

Figure H-4 shows the distribution of gender scores that were calculated to compare the distribution of ranuki items with Experiment H-1. We again found that the majority of gender scores clustered around the mean gender score (-0.04), reflecting a normal unimodal distribution. This result was consistent with Experiment H-1 and suggests that the majority of participants are not sensitive to a gender effect and are unable to identify the gender of a speaker through potential suffix allomorphs alone. There were however more individuals in Experiment H-2 who did use potential suffix allomorphs to identify the gender of the speaker. Three

participants had a negative gender score that was less than one standard deviation below the mean. And three participants had positive genders score that was greater than one standard deviation above the mean. Table 2 provides the demographic breakdown for each of these participants. There were no conclusive patterns to suggest an underlying reason that might explain why these particular individuals were sensitive to an effect of gender on *ra*-deletion.

Gender Score	Age	Gender	Life Stage	Birthplace	Raised in	Occupation
-1	18-25	Female	Worker	Tokyo	Tokyo	Contractor
-0.7	46-55	Male	Worker	Osaka	Osaka	University Professor
-0.6	46-55	Male	Worker	Niigata	Tokyo	University Professor
0.4	46-55	Female	Worker	Tokyo	Tokyo	Sign language interpreter
0.5	18-25	Male	Student	Chiba	Chiba	Student
0.6	36-45	Male	Worker	Shizuoka	Shizuoka	Housewife

Table H-4. Experiment H-2: Qualitative analysis of participants with
a gender score greater than and less than one standard deviation
from the mean.

General Discussion

This preliminary report was designed to test the hypothesis that the findings of Experiment 2-1 were a type-two error, whereby the methodological procedure, the adjective scale, failed to detect a gender effect. The hypothesis was based on the findings of previous research which demonstrated that Japanese participants more frequently reported difficulty with Likert scales, and more frequently selected the midpoint of the scale (Lee et al., 2002). In two versions of Experiment 2-1 (a scalar design H-1; and a binary design H-2) the hypothesis was tested to establish if there was a difference in participant responses between varying procedures. The results of the binary design, Experiment H-2, were not different from the adjective scale version, Experiment H-1. Only a very small difference was found in the mean judgement scores for long form items, *-rare* (1.30)*,* and short form items, *-re* (1.34). While this small difference was

in the same direction as the adjective scale version of Experiment H-1 and the corpus study results (i.e., short form items were more likely judged as being said by a female speaker) (Matsuda, 1993; Sano, 2009, 2011), the difference did not reach statistical significance. A type-two error is therefore unlikely to explain the findings of Experiment 2-1. Furthermore, the results of this preliminary report suggest that, at least in this design, Japanese participants do not show a difficulty with scalar designs. Further work is therefore needed to unpack the results to determine why some Japanese participants more frequently report difficulty with Likert scales while others do not show this difficulty.

Appendix I: Indicating and perceiving social hierarchy through language variation: the case of ranuki in Japanese. Abstract of oral presentation made at NWAV-AP4, National Chung Cheng University, Chiayi, Taiwan, and at Tokyo Circle of Phonologists, Tokyo University, Tokyo, Japan.

Linguistic variation occurs both across groups of speakers and within individual speakers. Recent studies suggest that variation within individual speakers may be attributed to the speaker positioning themselves to the relevant social categories of their environment for the purpose of identity construction (e.g., Eckert, 1989, 2000; Mendoza-Denton, 2014; Zhang, 2005). However, it is not yet known whether listeners can perceive this relative positioning. To investigate this question, we conducted two experiments to examine the production and perception of a pattern of variation in Japanese verbal morphology; known as *ranuki* 'ra-deletion' in Japanese. *Ranuki* occurs when the standard potential (meaning 'potential', or 'ability to do') verb suffix *-rare* is sometimes realised in a reduced form, *-re*, by deleting the syllable *-ra.*

80 native Japanese speakers participated in a direct elicitation study (40 male). The participants were presented with a questionnaire in a one-on-one interview session and were asked to report how they would say a given sentence to a friend and to a superior. The results showed that self-reports by Japanese speakers are influenced by their interlocutor ($F[1,78]= 269.812$, $p = < 0.001$). Japanese speakers reported a tendency to use the long form of the suffix when speaking to superiors and the short form when speaking to friends. This suggests that the social status (friend vs. superior) of the interlocutor relative to the speaker-listener is socially indexed by the choice of potential verb suffix allomorph. A perception study then examined whether participants use patterns of *ranuki* to identify hierarchical social relations between interlocutors. 60 native Japanese speakers participated in this perception study (25 male; 35

female). The task was to judge if the presented sentence was more likely said to a friend or to a superior. The results indicated that participants were able to recover the social status of the interlocutor from a speaker's use of potential verb suffix allomorphs ($F[1,59]= 35.130$, $p = < 0.001$). Listeners were more likely to answer that the sentence was said to a superior when the long form of the suffix was used. The findings of these two experiments suggest that speaker-listeners use suffix variation to index their position on the social hierarchy and also that, in perception, they are aware of others positioning themselves relative to the social status of their interlocutor.

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Appendix J: Identity trumps linguistic experience: the case of yeah-no in Australian English. Abstract of oral presentation made at ALS, University of South Australia, Adelaide, Australia.

The social categories that characterise a speaker frequently correlate with the use of linguistic variables. Sociolinguists suggest that this correlation is perceivable as social meaning that is indexed upon the variable (e.g., Campbell-Kibler, 2008; Eckert, 2008; Podesva, 2011). However, variables and social categories which correlate in production are not always perceivable as social meaning by speaker-listeners (e.g., Buchstaller, 2006; Dailey-O'Cain, 2000; Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008). In this study, we investigated the role of speaker identity in the perception of social meaning. We conducted two perception-based experiments on the Australian English discourse marker *yeah-no*. Previous studies have identified that the distribution of *yeah-no* is influenced by social factors including age and gender (Burridge & Florey, 2002; Moore, 2007), but to date, how listeners perceive *yeah-no* has not been examined. Thus, this study seeks to determine if (1) the correlation between *yeah-no* and the social categories of age and gender are perceivable as social meaning by speaker-listeners, and (2) if the affiliation of the speaker-listener affects their perception of the socially indexed meaning of the variable.

65 native Australian English speakers participated in Experiment A, which examined *yeah-no* and the social category of age (32 male, 33 female). The participants performed a perception task in the format of an online survey using Qualtrics. First, participants judged if the presented sentences were more likely to be said by a speaker at a younger or older life stage, that is, by a student or by an employee. The second part of the experiment was a self-report task where participants were asked to decide which of four responses they would be most likely to choose in responding to a speaker's question; one response included *yeah-no* to determine

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if the participant identified as a *yeah-no* user. The results indicated that sentences including

yeah-no were judged as more likely to be said by a student ($F[1,64] = 18.497$, $p < .001$). This

effect was stronger for participants who did not identify as *yeah-no* users. Experiment B was

identical in design to Experiment A but examined the social category of gender, and involved

55 participants (25 male, 30 female). While there was no significant effect of discourse marker

on participant judgements across the sample, participants who identified as *yeah-no* non-users

showed a significant effect of discourse marker ($F[1,31] = 8.241$, $p = .007$). That is, participants

who did not identify as *yeah-no* users were more likely to judge *yeah-no* as said by a male

speaker rather than a female speaker.

Overall, the two perception experiments were consistent with the distribution found in

earlier production studies. *Yeah-no* was associated with the social category of life-stage, but

the category of gender was only significant for speaker-listeners who did not identify as *yeah-no* users. This finding has implications for research pertaining to social meaning. If the

successful perception of socially indexed meaning is contingent upon an interlocutor's

identification with a variable or group, it suggests that abstraction plays a larger role in

linguistic perception than implicit linguistic experience. Furthermore, speaker-listener identity

may explain the asymmetry found in previous social evaluation studies. Our study shows that

it is important to combine production-, perception- and self-report-based research methods to

tease apart these various factors.

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Appendix K: The asymmetry of politeness in Japanese: when explicit abstract rules override implicit linguistic experience. Abstract of oral presentation made at VALP-4, Macquarie University, Sydney, Australia.

The ubiquitous nature of the association between linguistic variation and social categories suggests that individuals learn patterns of co-occurring social categories and respective variables from linguistic exposure. Standard exemplar models assume that individual speech utterances are aggregated in memory into exemplar representations that allow speakers to produce forms which index correlating social categories, and additionally, allows listeners to perceive the social categories that are indexed onto the representations (Drager, 2005; Foulkes & Docherty, 2006; Hay, Warren, & Drager, 2006; Johnson, Strand, & D'Imperio, 1999). Third wave sociolinguistic researchers propose that this learned association is perceivable as social meaning (e.g., Campbell-Kibler, 2008; Eckert, 2008; Podesva, 2011). However, variables and social categories which correlate in production are not always perceivable as social meaning by speaker-listeners (e.g., Buchstaller, 2006; Dailey-O'Cain, 2000; Kirtley, 2011; Plichta & Preston, 2005; Rahman, 2008). This mismatch is a problem for the standard account because it questions whether the association between social categories and linguistic variables are really automatic. A possible explanation for this mismatch lies with abstraction. If abstract rules which govern the associations between variables and social categories are learned explicitly, they may mediate the associations which are learned implicitly through exposure. We investigated this possibility in two ways: via a corpus analysis and a perception experiment to examine whether the co-occurrences of addressee honorifics in Japanese and the gender of the speaker in speech production are mediated by abstract rules in perception. The reason Japanese was chosen here was twofold: firstly, for its grammatical marking of politeness, and secondly, for the overt expectations of women's speech in society (Ide, 1982).

The results of the Nagoya University Conversation Corpus analysis showed a higher frequency of polite forms produced by male speakers (21.8%) compared to female speakers (11.8%). This was contrary to previous studies which found a higher frequency of polite forms produced by female speakers (Ide, 1982; Ide, Hill, Carnes, Ogino, & Kawasaki, 1992; Inoue, 2002). The perception study then examined participants' judgements along a gendered continuum of sentences which varied in the presence or absence of addressee honorifics. 52 native Japanese speakers took part in the experiment (35 females; 16 males). The results indicated that sentences including polite forms were judged as more likely said by a female speaker ($t(51)= -3.570$, $p \leq .001$). This result fits with societal expectations which supported the hypothesis that individuals would expect polite forms to be said by female speakers.

Overall, the corpus and perception studies demonstrated a mismatch in production and perception. Specifically, male speakers had a higher frequency of polite forms in production, while polite forms were judged as being more likely said by a female speaker. We find this result to be in favour of a potential mechanism which mediates individuals' implicit language experience with the explicit acquisition of abstract rules, bringing the field of sociolinguistic inquiry regarding social meaning in line with theories pertaining to language acquisition and processing.

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