

Persona-based information shapes linguistic perception: Valley Girls and California vowels¹

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This paper investigates the effect of persona-based information on implicit linguistic perceptions of a sociolinguistic feature – the backed TRAP vowel. TRAP-backing is associated both with macro-social region (California) and with a particular persona that inhabits this region (the Valley Girl). An eye-tracking paradigm is used to examine these associations in early, automatic stages of perception. One group of listeners was told the speaker was from California, while another group was told that the speaker had been described as a Valley Girl. Findings demonstrate that both the California information and the Valley Girl information caused listeners to expect the speaker to exhibit TRAP-backing. While previous studies have highlighted the influence of macro-sociological categories on linguistic perception, the present study suggests that persona-based social meanings can also serve to influence perception, supporting theories that foreground personae as social constructs crucial to interaction.

KEYWORDS: Sociolinguistic perception, personae, sociophonetics, California vowels

INTRODUCTION

Personae and sociolinguistic styles

A growing body of work in sociolinguistics has focused on the ways language variation is related to social meaning (Eckert 2008). Such studies have made relevant the construction of sociolinguistic styles: meaningful clusters of linguistic features that are continuously recombined and reinterpreted in practice to interactional and social ends (Coupland 2007). Research in this vein has examined the nature of the social meanings that styles can index, calling upon work in linguistic anthropology that theorizes the fundamental role of *social types* in the formation and circulation of linguistic styles or registers (Agha 2003). These theories argue that registers come to be ideologically associated not with macro-social categories like gender, age and class, but with the social personae or characterological figures. In this view,

links between linguistic styles and personae build up to constitute and reflect large-scale macro-social patterns (Ochs 1992). As Eckert notes, 'clearly, women (and men) are not saying "I'm a woman" when they use a "female-led" change ... this generalization says nothing about the kinds of behaviors and ideologies that underlie these patterns' (2008: 455).

Studies of sociolinguistic style have indicated that social meanings related to the particular attitudes, behaviors and stances that make up personae are more immediately relevant in interactions than macro-social categories (Moore 2012). Such studies have focused on production patterns (e.g. Podesva 2007) or on more explicit linguistic evaluations (e.g. Campbell-Kibler 2011). However, little is known about the ways that specific personae can influence linguistic perception in early and automatic processing. If personae are indeed immediate social constructs in interactions, it is reasonable to expect that these social types play a role in the more implicit modes of linguistic perception that occur in real-time interactions.

Sociolinguistic perception

Sociolinguistics has seen a recent surge in the use of techniques that target sociolinguistic perceptions of speech (see Drager 2010 for an overview). These studies tap into the links that listeners create between a social meaning and a linguistic feature, assessing how these links manifest themselves in more and less automatic tasks. In a commonly used paradigm, researchers provide listeners with social expectations about a speaker, then examine the effects this information has on linguistic behavior, like phoneme categorization. This top-down social information has been presented in more or less implicit ways, from explicit written information (Niedzielski 1999) to pictures (Hay, Warren and Drager 2006) to a stuffed animal strategically placed in the room (Hay and Drager 2010). The automaticity and implicitness of the task itself can also be manipulated through the use of different types of paradigms often adapted from speech perception, psycholinguistics, or social psychology (Koops, Gentry and Pantos 2008; Campbell-Kibler 2012).

The vast majority of work on the effects of social information on linguistic behavior has examined links between linguistic features and larger scale macro-social categories like speaker location of origin (Niedzielski 1999), gender (Strand 1999), race (Staum Casasanto 2008), age (Koops, Gentry and Pantos 2008) and socio-economic status (Hay, Warren and Drager 2006). However, considering the fundamental nature of personae as asserted by work on sociolinguistic style, the present study examines how social information can affect linguistic behavior when the speaker is presented as inhabiting a particular *persona*, as compared to a macro-social category. This study thus investigates a single linguistic feature that is linked both with a macro-social regional dialect as well as with at least one specific persona associated with this region: the backing of the TRAP vowel in California.

The backing of TRAP as Californian

For at least the last few decades, non-pre-nasal TRAP-backing has been documented in California as part of an ongoing chain shift in which the front lax vowels are backing and lowering (Kennedy and Grama 2012). This change in progress has been reported primarily in the urban, coastal areas of California, like the San Francisco Bay Area (Hall-Lew 2009), the Los Angeles area (Hagiwara 1997) and other cities of the Southern Californian coast (Kennedy and Grama 2012). But recent work has also found the feature in speakers from less-urban, inland communities in California as well, though to a lesser degree than on the coasts (Podesva et al. in press). Thus, while the change appears to have originated in urban, coastal communities of California, its wide reach makes the feature associable with the state as a whole.

Given the presence of TRAP-backing in California production patterns, it is unsurprising that the feature is associated with personae that embody California identity. Like other features related to place-linked personae (/aw/-monophthongization in Johnstone and Kiesling 2008; rhoticization in Zhang 2008), TRAP-backing is linked not only with the state of California generally, but also with a stereotyped persona that is associated with California – the Valley Girl. This social type is a popularly recognized female persona that is typically white, feminine, affluent, materialistic and superficial. Language attitudes surveys on perceptions of California both within and outside of the state show reference to a stereotyped linguistic style associated with the Valley Girl (Fought 2002; Bucholtz et al. 2007), a highly stigmatized language variety often called Valspeak (Donald et al. 2004). The crux of overt comment on Valspeak largely rests on lexical items, particularly discourse marker *like* (Dailey-O’Cain 2000). Although little to no explicit meta-linguistic discourse surrounds TRAP-backing’s associations with California or associated personae, studies as early as Hinton et al. (1987) mention that features of vocalic Californian features, including TRAP-backing, have been used in mock stylizations of the Valley Girl persona.

The present study examines how the macro-social (California) and the persona-based (Valley Girl) social meanings of TRAP-backing arise in perception. In the task described below, groups of listeners were provided with different information about a speaker, with one group receiving macro-social information (California region of origin) and another group receiving persona-based information about the same speaker (Valley Girl persona). Findings demonstrate that both types of information can influence linguistic perception at automatic levels.

METHODS

To probe early and automatic processing, the present study uses eye-tracking (Tanenhaus et al. 1995) during a word identification task.² Eye movements

serve as a proxy for a listener's automatic decision-making process: where on the screen the listener's eyes are focused indicates which words they are considering when making their choice. The paradigm used in this task draws largely upon the design of Koops, Gentry and Pantos' (2008) study on the effects of perceived speaker age on perceptions of the PIN and PEN vowels in Houston, Texas.

In each trial of the present study, listeners were provided with four orthographic words displayed in corners of a screen. Participants were given five seconds to familiarize themselves with the words, then an icon corresponding to the speaker they would hear in that trial appeared in the center of the screen (full screen as shown in Figure 1). Participants were instructed to fix their gaze on this icon (in the case of Figure 1, an outline of the state of California). Once this had occurred, an auditory word played over headphones (indicated in the word bubble of Figure 1). Listeners then used the mouse to click on the word they heard. Once they clicked on one of the words, the experiment advanced to the next trial.

For critical trials, one of which is depicted in Figure 1, the four visual words consisted of a TRAP-LOT pair (e.g. SACK and SOCK) and a distracter pair (e.g. LEAK and LAKE). In these critical trials, the auditory word played was an ambiguous token between the TRAP and LOT minimal pair shown. Creation of these tokens is detailed in the Auditory Stimuli section below. Each participant saw a total of four critical (TRAP-LOT decision) trials.

Only critical trials were analyzed in this study, but filler trials in both the voice used in critical trials and in a distracter voice were included to obscure the focus on TRAP in this study. Listeners completed a total of 32 total trials, 16 in the critical voice (including the four critical trials), and 16 in the

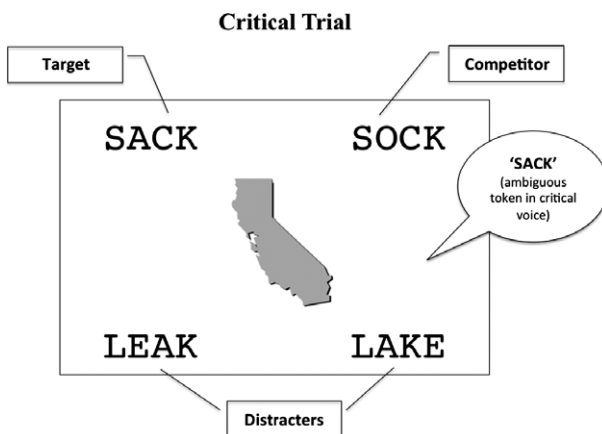


Figure 1: Example critical trial screen. The icon is an outline of the state of California. Word in bubble indicates auditory token played

distracter voice. Two trial lists were created with different critical trials, for a total of eight critical auditory stimuli across participants, listed in the Auditory Stimuli section below. In each trial, all four visual words contained the same number of orthographic letters, and each minimal pair differed phonologically only in the vowel sound of the word. Placement of each orthographic word on the screen was balanced across trials, and the order in which the trials were presented was randomized for each participant.

As each trial unfolded, participants' eye movements on the screen were tracked using a ToBII T606XL remote eye tracker, with the experiment presented through EPrime experimental software synced to the eye tracker. Of particular interest in the present study is the proportion of time that a listener spent fixating on a TRAP or LOT word before making their mouse-click decision between the two, particularly as influenced by the social information a given participant received about the speaker.

Auditory stimuli

The critical auditory stimuli used in this experiment consisted of words re-synthesized from natural read productions of eight monosyllabic TRAP-LOT minimal pairs: BLACK-BLOCK, HAT-HOT, LACK-LOCK, PAT-POT, RACK-ROCK, SACK-SOCK, STACK-STOCK and TAP-TOP. Words were produced by a trained sociophonetician (the author), a female native speaker of American English. An open-ended pilot survey examined listener impressions of the critical voice generally. The voice was overwhelmingly heard as a white female with a mean perceived age of 32, and location of origin split between the East Coast, the Midwest, and the Western United States, including California.

Nine-step continua from each of the recorded TRAP tokens to respective LOT tokens (e.g. SACK to SOCK) were then created using the Akustyk package (Plichta 2013) in Praat (Boersma and Weenink 2011), with the command *Create speech continuum*. Prior work examining sociolinguistic perception has made use of such re-synthesized continua (e.g. Plichta 2004), which make possible the manipulation of particular aspects of vowel quality without introducing additional acoustic confounds. Vowel tokens were then chosen from the midpoint of each continuum to create the ambiguous TRAP-LOT tokens used as critical auditory stimuli in the experiment. Where necessary, liquid onsets were included in the vowel resynthesis. Fricatives were also resynthesized and spliced into continuum steps to avoid effects of perceptible coarticulation. Naturalness ratings of each stimulus were collected from 10 online participants per word, on a scale from 1 'sounds like a human' to 10 'sounds like a computer, or manipulated.' All recordings used were given an average rating of between 1 and 3 out of 10.

A list of filler words was recorded in the critical voice, to be used in filler trials. In addition, filler words were also recorded in a distracter voice,

produced by a white male in his 30s from the Midwestern United States. This distracter voice was included to take focus away from the critical voice in the experiment, as well as to ostensibly make necessary the visual icons used to cue the upcoming voice (and social information). Filler words from both speakers were recorded in the same manner as the critical TRAP-LOT stimuli. All words were sampled at the same rate as the critical resynthesized tokens and scaled for amplitude, so that manipulated tokens would not stand out with regard to volume or recording quality from filler tokens.

Visual stimuli

Visual icons were used to present social information about the speakers, as a means of assessing the differences between macro-social information and persona-based information on word identification and eye movements. A given listener was placed in one of three groups, and prior to the identification task, each group received different social information about the speakers they would hear in the task, corresponding to visual icons. Participants were presented with two icons, one to represent the critical voice, and one to represent the distracter voice.

All icons corresponding to the critical voice (row 1) and distracter voice (row 2), along with the instructions provided about the meaning of these icons, are shown in Figure 2. In one group (No Information, or Baseline, condition), the critical voice was represented by a green circle and the distracter voice was represented by an orange circle, with no social descriptions of the speakers provided. In another group (macro-social California condition), the critical voice was represented by an outline of the shape of California and the distracter voice by the shape of Michigan, with listeners explicitly told that one speaker was from California, the other from Michigan. In the third group (persona-based Valley Girl condition), the critical voice was represented by a drawing of a pink purse and shopping bag, with listeners told that this speaker had 'been described as a Valley Girl,' while the distracter voice was represented with a drawing of taped black plastic-framed glasses, with listeners told that this speaker had 'been described as a nerd.'

After receiving explicit information about the voices and viewing the icons, participants were informed that the icons would be shown in each trial, to cue which of the two voices they would hear. This allowed for a reminder of the relevant social information with each trial of the task.

Participants

Following the main task, each listener self-reported age, gender, locations lived throughout their lives and ages at which they lived there, native languages, and self-perceived LOT-THOUGHT merger (asked whether the words COT and

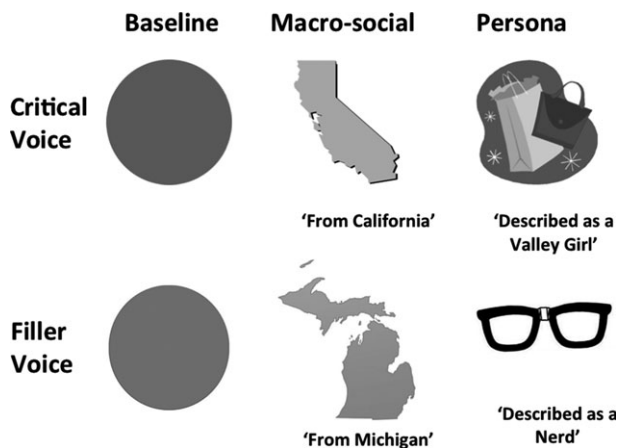


Figure 2: Icons used to correspond to social information conditions

CAUGHT sounded the same or different). Locations lived were coded according to U.S. dialect region as designated by the Atlas of North American English (Labov, Ash and Boberg 2006) based on where the listener lived between ages 8–18. Data from participants who did not self-report as natively American English speaking, lived outside of the U.S. between the ages of 8 and 18, averaged abnormally slow reaction times (more than 3000 ms), or whose eye gaze was not accurately recorded in all parts of the screen were removed prior to analysis. After these eliminations, data was analyzed for a total of 29 participants.

Of the 29 analyzed, participants were fairly split between California (N = 16) and non-California (N = 13) natives, although all of the participants lived in California at the time of study. The dialect region of the West made up a majority of the sample (N = 17), with the next largest categories being the Mid-Atlantic and New England (both N = 3). Unsurprisingly given this regional breakdown, a majority of the participants reported self-perceived COT-CAUGHT merger (N = 20 'same' responses). There were slightly more females (N = 17) than males in the sample. The mean age of participants was 25, and a large majority of participants were between the ages of 18 and 29 (N = 24).

RESULTS

Analyses were performed on two components of the critical trials:

1. word choice between TRAP word and LOT word as determined by mouse-click; and

2. how frequently the speaker fixed their gaze on the target (TRAP) word and the competitor word (LOT) in the time between the onset of the auditory stimulus and the point at which a decision was made.

In both analyses, responses were compared between listeners in the No Information baseline condition, the California condition, and Valley Girl condition.

Word choice

Mouse-click word choice between TRAP and LOT was analyzed in critical trials (four per participant, $N = 116$), comparing responses from speakers in each of the conditions (No Information, California, and Valley Girl). Analysis was performed using mixed-effect regressions in R, via the *lmer* function in the *lme4* package, with p-values obtained via the *lmerTest* package. This model estimated selection of a TRAP word (versus LOT) as the dependent variable, with a fixed effect of social information condition (default = No Information/Baseline condition), and random intercepts of participant and auditory stimulus (word). Models were also fitted including each aspect of participant social information as predictors of TRAP word selection. Effects of age, gender, COT-CAUGHT merger, California location of origin, and all-levels dialect region were not significant, nor were interactions of these factors with social information condition. Since a majority of speakers were members of the West dialect region, a post-hoc categorization split listeners into West (where TRAP-backing has been documented) versus non-West. A significant main effect did arise for binary West versus non-West dialect region, and this fixed effect was included in the final model, shown in Table 1.

The model indicated that with respect to word choice, the Valley Girl condition, but not the California condition, was significantly different from the Baseline condition at the $p < 0.05$ level. This indicates that listeners who think a speaker embodies a Valley Girl persona expect the speaker to exhibit TRAP-backing significantly more (mean=92%) than listeners who were given no information about this same speaker (mean=75%). Listeners in the California condition trended in the expected direction: they heard ambiguous tokens as

Table 1: Mixed effects regression summary of fixed effects for choice of TRAP versus LOT word ($N = 116$)

Predictor	Estimate	Std. error	T value	P value
(Intercept)	0.84609	0.08376	10.101	1.81e-10***
Condition = <i>California</i>	0.10456	0.08613	1.214	0.2348
Condition = <i>Valley Girl</i>	0.17855	0.8414	2.122	0.0426*
Western Dialect Region = <i>West</i>	-0.16015	0.07104	-2.254	0.0230*

* = significant at $p < 0.05$; *** = significant at $p < 0.0001$.

TRAP more frequently (mean=86%) than those in the Baseline condition, though not to a statistically significant degree (Table 1). The difference between the Valley Girl condition and the California condition was not significant.

The distinction between those who were raised in the Atlas of North American English's Western dialect region (Labov, Ash and Boberg 2006) and those raised elsewhere emerged as significant as well. Though it largely overlaps with the Western binary, California versus non-California was only marginally significant as a predictor. Unexpectedly, the effect of Western dialect indicates that participants who were *not* raised in the West were *more* likely to categorize an ambiguous token as TRAP (93% of the time) than Westerners were (77% of the time). No interactions between Western region and social information condition arose in the model; this trend occurred across the board, regardless of speaker information.

Eye movements

To examine behavior during the 1.3 second decision process prior to word choice, gaze was measured from onset of the target stimulus, plus 200 ms – the average time it takes to plan and execute an eye movement (Allopenna, Magnuson and Tanenhaus 1998) – to the point of decision (the mouse click). The eye-tracker recorded clear fixations on the screen corresponding to which word was being fixated. Eye movements between fixations, or *saccades*, were not included in analysis, nor were fixations to other areas of the screen (such as the icon, or the margins). The overall proportion of fixations of the TRAP word, the LOT word and distracters was found for each critical trial, for each participant (N = 116). Of particular interest in the present study is how much time the listener spent looking at the LOT word before making a decision between the TRAP and LOT pair. The more a listener fixated LOT, the more viable they considered the LOT word to map to the ambiguous token, and the less they considered the speaker to be exhibiting a backed TRAP.

Analyses were again performed via mixed effects models, with proportion of looks to the LOT word as the dependent variable. Fixed effect of social information condition was again included, with random intercepts of participant and auditory stimulus (word). All aforementioned participant information factors were tested in each model, but none yielded significant results (including Western dialect region, which was significant in word choice), nor did any possible interactions emerge as significant. A model predicting fixations to TRAP did not yield significant between-condition results, though trends can be viewed in the expected direction (Figure 3), such that listeners in the California and Valley Girl conditions fixated the TRAP word for a relatively greater amount of time than those who had no speaker information. The model predicting looks to the competitor (LOT word) showed that both the California and the Valley Girl conditions were significantly different from the

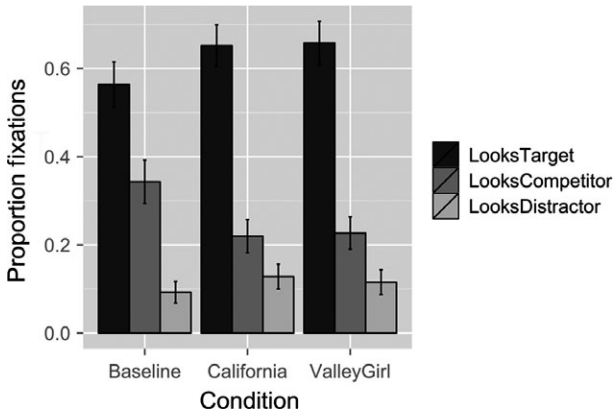


Figure 3: Mean proportion of looks to the target ($TRAP$), competitor (LOT) and distracter in critical trials by social information condition

Baseline in the expected direction (Table 2). That is, listeners in both the macro-social California condition and in the persona-based Valley Girl condition spent significantly less time fixating on the LOT competitor than those who had no information about the voice (Figure 3), and relatively more time fixating on the $TRAP$ word. No significant difference emerged in looks to the competitor LOT between the California and Valley Girl conditions. The results shown in Table 1 and Table 2 make clear that social information modulates both word choice and eye movements, indicating that listeners integrate this social information both at the time of making the decision (observable in word choice) and in the period before (observable in eye gaze).

However, these data may be further broken down to address the question of whether we see by-condition processing differences *regardless* of word choice. If we assume that listeners fixate longer on the word that they will ultimately choose, these fixation findings (Table 2) may, in a sense, be predicted by the condition-based differences in word choice, as the two are inevitably related. But to examine an even subtler level of processing, I ask whether condition-based differences in gaze fixation still emerge for speakers who all ultimately settled on

Table 2: Looks to competitor mixed effects regression summary of fixed effects, word choice collapsed ($N = 116$)

Predictor	Estimate	Std. error	T value	P value
(Intercept)	0.34508	0.04154	8.308	2.62E-10***
Condition = <i>California</i>	-0.12839	0.05871	-2.187	0.0310*
Condition = <i>Valley Girl</i>	-0.11785	0.05750	-2.049	0.0429*

* = significant at $p < 0.05$; *** = significant at $p < 0.0001$.

Table 3: Looks to competitor mixed effects regression summary of fixed effects, TRAP-selection trials only (N = 97)

Predictor	Estimate	Std. error	T value	P value
(Intercept)	0.27484	0.03993	6.884	5.8E-10***
Condition = <i>California</i>	-0.11704	0.05601	-2.090	0.0393*
Condition = <i>Valley Girl</i>	-0.07628	0.05406	-1.411	0.1615

* = significant at $p < 0.05$; *** = significant at $p < 0.0001$.

the same word selection. To address this question, I re-analyzed gaze fixations to competitor LOT on a subset of the data that included only those trials in which TRAP was ultimately selected. An analysis of the reverse case (looks to TRAP when LOT was ultimately selected) did not reveal significant condition effects, though since a large majority of listeners overall selected TRAP, more data yielding a LOT selection would be required to test this effect more robustly.

For trials in which TRAP was ultimately selected, the regression analysis demonstrated a significant by-condition difference between the Baseline and California conditions with respect to looks at LOT (Table 3). For listeners who ultimately selected TRAP, those who were told the speaker was from California considered the competitor LOT significantly less than listeners who were given no social information. In this subset, while listeners who thought the speaker was a Valley Girl were less likely to fixate the LOT competitor than those in the Baseline condition, yielding the expected effect, this difference was not significant at the $p < 0.05$ level. Looks to LOT were not significantly different between the two social information conditions (California and Valley Girl). Overall, the difference between the California and Baseline conditions in this analysis reveals that social information, in this case, related to region, can affect early and automatic processing regardless of the linguistic decision that is ultimately made.

DISCUSSION

The major aim of this study was to examine whether the association between a persona – the Valley Girl – and a linguistic feature – TRAP-backing – affected linguistic perception. Findings indicate that both at the level of word choice, and in the early and automatic processing prior to this choice, listeners integrate persona-based information into their linguistic expectations. In fact, at the level of word choice, the Valley Girl persona induced expectations of TRAP-backing to a significant degree as compared to the Baseline condition, while macro-social California information did not. Listeners who thought they were hearing a specific *type* of Californian were led to categorize an ambiguous word as TRAP-backing to a significant extent, while their counterparts who thought they were hearing a Californian did so to a marginal degree.

Furthermore, persona-based information figured in the eye-gaze results, though not superseding effects of macro-social information. In the aggregated eye-gaze results, both macro-social regional information and persona-based information led to significant favoring of the TRAP-backing interpretation as compared to the baseline no information condition. However, in the subtler analysis of condition differences across listeners who made the same lexical choice, listeners in the macro-social California condition showed a significant preference for TRAP-backing as compared to Baseline listeners, while those in the Valley Girl condition only trended in this direction. Like prior work on sociolinguistic perception (e.g. Hay and Drager 2010), this effect shows that top-down expectations of a speaker's region influences linguistic perception, and in this case, this occurs at very early and automatic levels of processing. As the California and Valley Girl conditions were never statistically significantly different from *one another*, it is not possible to claim that one type of information has greater impact on perception than the other in this study. Regardless, it is clear that persona-based information can and does influence listener behavior, and merits further consideration in studies of sociolinguistic perception.

These perceptual findings offer additional support for the significance of personae in linguistic variation (Podesva 2007; Zhang 2008). As many have argued, interactions are the sites where negotiations of linguistic styles and their social meanings take place (Bucholtz and Hall 2005). The finding that persona-based information can influence implicit linguistic processing – the type of processing used in these interactional contexts – supports claims that persona-based information figures in interactionally immediate ways.

The significant effects of macro-social information that emerged alongside the effects of persona-based information do not necessarily negate the theoretical emphasis that has been placed on personae. In fact, these theories conceptualize smaller interactional constructs like personae as necessarily connected to large-scale categories, as they both constitute and reflect them (Ochs 1992; Bucholtz and Hall 2005). It may be the case, for example, that listeners link information about California with particular California *types*, which are then linked with linguistic features like TRAP-backing. While the design of the present study cannot determine the presence or directionality of a link between social types and macro-social categories in perception, it does show that the focus on macro-social categories in work on sociolinguistic perception may not straightforwardly reflect how listeners connect social information with linguistic features. Further work testing more micro-level, and especially characterological, speaker information is required to investigate whether influences of macro-social categories on linguistic perception could be mediated by more specific personae, as indicated by theoretical and production-based work on personae in interactions (Moore and Podesva 2009).

As a final point, the effects of listener characteristics found in this study have potential ramifications for how links between the social and the linguistic are cognitively formed. With regard to word choice, listeners who were from the

Western dialect region were *less* likely to hear a given token as TRAP-backing than their non-Western counterparts, regardless of the social information provided. Given that nearly all of the Western dialect speakers are Californian, and TRAP-backing has largely been documented in California, this finding is surprising if we expect that speakers perceive what they produce (Preston 2005; though cf. Kendall and Fridland 2010). If a person who exhibits TRAP-backing is more likely to assume TRAP-backing from another speaker, we would expect Westerners to show a *greater* overall expectation of TRAP-backing, the opposite of the effect found here.

Although beyond the scope of the present study, this mismatch between production and perception suggests that sociolinguists might fruitfully investigate the connections between frequency-based experiences and ideologically-based representations in linking linguistic styles to social meanings. Though many studies of perception have theorized the role of repeated episodes or exemplars of experience in sociolinguistic perception, and in the perception of speech more generally (e.g. Goldinger 1998; though cf. Sumner et al. 2014), more work is required in order to understand how experienced episodes relate to, shape, are influenced by, or diverge from the ideological packages that link a linguistic feature to social meanings. Given the unexpected effect of Western dialect region in word choice, which cannot be explained by invoking frequency-based experience alone, the present study makes relevant the distinction between a link formed by repeated experience and a link formed for other ideological reasons. A study that more thoroughly examines listener experiences with particular social types and linguistic styles, along with analysis of productions from the listeners themselves, could help elucidate the drivers of this listener effect.

CONCLUSION

The present study both confirms and expands upon previous findings related to sociolinguistic styles and personae. Using an eye-tracking paradigm sensitive to early and automatic perception, this study examines how social information generally, and persona-based information specifically, can influence perception in the stages prior to a linguistic decision. Like other studies of sociolinguistic perception, these findings show the integral role that social information plays both in a lexical choice and in the processing leading up to this decision. The present study further advocates for an expanded view of what constitutes 'social information' in these approaches to include ideological objects like holistic personae. Results show that information about a speaker's persona can indeed influence implicit linguistic perception, a type of social information that some studies of social meaning have foregrounded (e.g. Moore and Podesva 2009) but as yet has remained understudied in implicit perception. In the case of this particular study, associations between the Californian feature of TRAP-backing and a persona that is associated with California, the Valley Girl,

emerge both at the level of word choice, and in the processing prior to this choice. Consistent with work on interactional patterns of production (e.g. Podesva 2007) and explicit social evaluations (e.g. Campbell-Kibler 2011), the present study shows that ideological associations between linguistic features and social types are vitally intertwined in implicit linguistic perception.

Examinations of perceptual connections between personae and linguistic features are crucial toward understanding how style-persona links are formed in the mind, and how they affect linguistic and social behavior. The findings presented here show that, perhaps independently from frequency-based experience, ideological constructs like personae connecting linguistic features with social meanings can structure low-level, automatic perceptions. While further work remains to examine the link between macro-social categories and micro-level social types in perception, it appears that ideas of a speaker's social persona as a whole essentially shape a listener's expectations of that speaker, and these expectations crucially influence the way that language is perceived.

NOTES

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 2. More detail about the procedure, design, and stimuli used in the experiment, along with complete trial lists, to be made available in D'Onofrio (forthcoming).
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