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Language change is *wicked*: semantic and social meaning of a polysemous adjective[1]

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As a result of an ameliorative shift-to-opposite, the polysemous adjective *wicked* is an auto-antonym, having two senses opposite in meaning, that is, 'evil' and 'good'. We discuss two studies which explore the social life of this word, with the first focusing on its production and the second on its perception. In the first study, conducted in Cornwall, United Kingdom, we find that young men are most advanced in the use of *wicked* 'good' while young women appear not to contribute to the incrementation, that is, the advancement, of this change. In the second study, conducted online across England, we find *wicked* 'good', relative to its synonym *good*, to be perceived as less young and to be evaluated positively across disparate characteristics relating to status and solidarity, particularly by older men. We find *wicked* 'evil', in contrast to its synonym *evil*, to be evaluated higher in status-type characteristics. This newly uncovered indexical field of *wicked* presents a possible explanation for the observed changes in production, contributing to ongoing questions about the role of social meaning in driving the incrementation of change. More generally, this article adds to the growing yet limited literature which explores semantic variation through the lens of variationist sociolinguistics.

Keywords: semantic change, language perception, language production, matched-guise technique, *wicked*

1 Introduction

The social meaning of language variation has been prominent since the advent of the third wave of the variationist sociolinguistic paradigm (e.g. Eckert 2000; Kiesling 2004;

[1] The authors would like to thank Justyna Robinson for sharing her *wicked* data with us and for engaging in discussions regarding her findings. We would also like to thank the anonymous reviewers and statistics consultant as well as Laurel Brinton for valuable and insightful comments on previous versions of this article. Any remaining shortcomings are the responsibilities of the named authors.

Campbell-Kibler 2007; Podesva 2007; Moore & Podesva 2009; Cole 2020; see also Labov 1963). Such works have shed light on the non-referential meanings of linguistic features, from words (e.g. Kiesling 2004; Bucholtz 2009) to morphosyntax (Moore & Podesva 2009), to phonetics and phonology (Foulkes & Doherty 2006; Eckert & Labov 2017). However, the study of semantic meaning in sociolinguistics has been somewhat neglected (although, see Robinson 2010a, 2010b, 2012a, 2012b, 2014; Beal & Burbano-Elizondo 2012; Bailey & Durham 2021; Sandow 2023a, 2023b, in press; for discussion see Durkin 2012; Robinson 2012a; Sandow 2021). This article seeks to redress the limited, but growing, body of literature on the socially mediated trajectory of semantic change in the context of social meaning by exploring the polysemous adjective *wicked*.

In this article we report on the usage and perception of *wicked*, using evidence from two studies. The first, conducted in Cornwall in 2017–18, focuses on the social distribution of the senses of this polysemous word, such as 'evil' and 'good'. The second study, conducted online across England in 2022, employs the matched-guise technique and investigates the perception of two senses of *wicked*, 'evil' and 'good'. We find that while a change towards *wicked* 'good' is female-led among older speakers, younger women do not continue with the incrementation of this change; in contrast, their male counterparts rapidly accelerate this incrementation. In terms of perception, in study 2, we find that older men perceive *wicked* 'good' to index both solidarity-type and status-type traits, while *wicked* 'evil' is perceived to index status-type traits, particularly 'educated'. We conclude that the social meaning of the senses of *wicked* can, to a great extent, account for the socially mediated incrementation, and lack thereof, of this polysemous adjective.

2 Background

The study of semantic change is a developing area of sociolinguistics, a field which traditionally eschewed lexis from its 'theoretical and epistemological considerations' (Robinson 2012a: 38; see also Durkin 2012). Most sociolinguistic studies that do consider lexis do so from the perspective of onomasiology, that is, variation in the word form (e.g. Meyerhoff 1993; Chambers 2000; Beeching 2011; Tagliamonte & Brooke 2014; Braber 2018; Sandow & Robinson 2018; Sandow 2020; Lafond & Moffett 2020; Tagliamonte & Pabst 2020), rather than semasiology,[2] that is, variation in word meaning. Despite this, the fact that semantic change follows a socially mediated trajectory has been repeatedly attested in recent years (e.g. Robinson 2010a, 2010b; Beal & Burbano-Elizondo 2012; Bailey & Durham 2021; Sandow 2023b, in press). For example, using elicited data, Robinson (2012a) found the polysemous adjective *gay* to be undergoing change in apparent-time, with males leading the change from 'happy' towards the senses 'homosexual' and 'lame'. Bailey & Durham (2021) used acceptability judgements to trace the development of the sense

[2] We use the term *semantic* as opposed to *semasiological* throughout this article.

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cheeky 'mildly illicit', with younger speakers in Britain leading this shift from *cheeky* 'impudent' towards greater acceptance of the innovative variant. Such studies have demonstrated the structured heterogeneity of semantic change. However, this body of socio-semantic research literature remains somewhat limited. We argue that without a lexical perspective, our knowledge of language and society, and the subsequent theory, is necessarily abridged. By contributing to a developing lexis-oriented branch of sociolinguistic theory, we are testing the utility of sociolinguistic theory and working towards a more holistic knowledge of the social life of language and the mechanisms of linguistic change.

In recent decades, a number of studies have investigated the social meaning of lexical items. Such studies typically either infer social meanings from usage patterns (e.g. Kiesling 2004; Bucholtz 2009; Snell 2018) or from metalinguistic discussion (e.g. Robinson 2010a; Braber 2022; Sandow 2022, 2023a, 2023b). While studies have used experimental methods to explore the social meaning of phonetic, phonological and morphosyntactic features, such as the matched-guise technique (Campbell-Kibler 2007; Johnstone & Kiesling 2008; Gilabert & Fuss 2018), Implicit Association Test (Campbell-Kibler 2012; McKenzie & Carrie 2018; Álvarez-Mosquera & Marín-Gutiérrez 2021) and the Social Category Association test (Llamas *et al.* 2016), limited research has employed such methods at the level of lexical variation.

Pragmatic and discourse features have also been studied through the matched-guise technique (e.g. Dailey-O'Cain 2000; Buchstaller 2006; Maddeaux & Dinkin 2017; Davydova & Hazen 2021; Schleef 2022). For example, Dailey-O'Cain (2000) used the matched-guise technique to explore the social meanings of discourse marker *like* and quotative *like*. Dailey-O'Cain (2000) found that *like*[3] is associated with speakers who are younger, attractive, cheerful, friendly and successful, but less educated. One study which does demonstrate the applicability of such experimental methods to lexical variation is Beltrama & Staum Casasantro (2017), who demonstrated that matched-guise techniques can highlight social meanings at the level of lexical variation.[4] For example, *totally*, as an unbounded adjective, solicits stronger social meanings relating to solidarity (friendly, outgoing, excitable and cool) than its synonyms *completely* and *really* as well as a null (bare form) variant.

This existing body of research tends to focus on either semantic production or perception. In this article we consider production and perception as two sides of the same coin and report on both the usage and social meanings of the polysemous adjective *wicked*.

3 *Wicked*

Due to an ameliorative semantic shift-to-opposite affecting the adjective *wicked*, the more traditional sense which we gloss here as 'evil' now exists alongside the sense we gloss as

[3] The perception aspect of this study did not distinguish between discourse marker and quotative *like*.
[4] For an overview of social meaning in semantics and pragmatics see Beltrama (2020).

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'good'. The *Oxford English Dictionary* (*OED* online) first attests the usage of the former sense in *c.* 1275 and defines it as '[b]ad in moral character, disposition, or conduct; inclined or addicted to wilful wrongdoing; practicing or disposed to practice evil; morally depraved'. The second sense, attested by the *OED* (online) in 1920 in the USA and 1977 in the UK, is defined as '[e]xcellent, splendid; remarkable'. Thus, *wicked* is now an auto-antonym, with the word having two senses which are opposite in meaning, that is, 'evil' and 'good'.

One study which has investigated the semantic change in the usage of *wicked* is Robinson (2010a; see also Robinson 2014),[5] conducted in Sheffield, South Yorkshire, in 2006–7. Robinson found real-time evidence of the change towards 'good' from corpus evidence and in apparent-time using elicited data. The elicited data were analysed for sociolinguistic patterns of variation. Young people were more advanced in the use of *wicked* 'good', indicating a change in apparent-time. This change was also more advanced among females aged 19–60 (Robinson personal communication). Robinson (2010a: 267) does highlight that *wicked* 'good' is likely to have a 'life expectancy', suggesting that this change may be ephemeral or age-graded.

Robinson (2010a) also provides some metalinguistic commentary from participants relating to the semantic change of *wicked*, which provides insight into its social meanings. For example, Robinson (2010a: 210) reports participants who observe that '*wicked* 'good' is [used in] speaking and *wicked* ['evil'] in writing' and it is 'a question of class and education if you use *wicked* 'good''.[6] While such comments provide specific insights into the indexical meaning of the senses of *wicked*, more broadly, they also evidence that this semantic change is occurring above the level of conscious awareness.

In the present article, we explore three research questions:

- How is the semantic change of *wicked* conditioned by social factors?
- How are the two senses of *wicked*, 'evil' and 'good', perceived?
- To what extent can perception data be used to explain production results?

The first study explores the first question, while the second question is investigated in the second study. We synthesise the results of both studies to answer our third research question.

4 Study 1– Semantic variation

Study 1 is concerned with patterns of semantic variation and change in the usage of *wicked*. The method reported on here is part of a larger study conducted by the first author of this article (see Sandow 2021). Eighty speakers from the Cornish towns of

[5] These publications refer to *wicked* as part of a cluster of variables, rather than in isolation. Thus, the specific usage-based results from this study relating to *wicked* are not published. Our insights into this data come from personal communication with Dr Justyna Robinson, Reader in English Language and Linguistics, University of Sussex.

[6] With the implication being here that those of higher social class/education would be less likely to use *wicked* 'good'.

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Camborne and Redruth, and surrounding villages, were interviewed in 2017–18. The participants in this study were balanced for age (older than 40, N = 40, younger than 30, N = 40),[7] gender (male, N = 40, female, N = 40),[8] and socioeconomic class (middle- class, N = 40, working-class, N = 40),[9] with each of these categories being conceived of as binary.

Semasiological data were elicited by employing a methodology developed and first executed by Robinson (2010a). Robinson's *who*/*what* and *why* method consists of two adjacency pairs of which the first is designed to elicit a reference of the investigated polysemous word and the second is designed to elicit a sense, such as:

Q1: Who or what is wicked?
A1: My uncle
Q2: Why is your uncle wicked?
A2: Because he's so cool

It is thought (see Robinson 2010a) that this method is less direct than simply asking 'what does X mean'. This is advantageous as direct questioning, e.g. 'what does *wicked* mean', is not consistent with the elicitation of relatively unmonitored speech (e.g. Labov 1972, 1984). Using this method, the structured semantic variation of polysemous adjectives (Robinson 2010a, 2010b, 2012a, 2012b, 2014) and (using a slightly adapted elicitation prompt) nouns (e.g. Sandow 2023a, 2023b)[10] has been well attested.

Participants were asked about each word twice, with the stimuli in Q1 altering slightly in the second iteration to 'who or what else is [polysemous adjective]'. By asking the participants the *who*/*what* questions twice, participants had the opportunity to provide two senses of the word under investigation. In the study, participants were asked to provide senses for ten words. Eight of these were adjectives, namely, *sick*, *wicked*, *awesome*, *hot*, *gay*, *cool*, *fit* and *hard*, as well as two nouns, the Anglo-Cornish dialect words *emmet* 'tourist/ant' (see Sandow 2023b) and *maid* 'woman/female servant or attendant' (see Sandow 2023a).

It is important to note that our conceptualisation of the semasiological variable here requires a departure from the more traditional definition of a sociolinguistic variable. While Labov (1978: 13) asserted that 'we must not avoid the study of differences of meaning', the study of semantic variation is not directly compatible with Labov's (1972: 271) classic conceptualisation of the sociolinguistic variable as 'two ways of saying the same thing'. Despite the centrality of this concept to the variationist programme, there is a relatively large body of research, particularly that which extends the envelope of variation beyond phonetics and phonology, that eschews this definition

[7] There were no speakers aged between 30 and 40 in the sample.
[8] Participants were given the opportunity to select a gender other than 'male' and 'female' but none elected to do so.
[9] Socioeconomic class was determined using an index consisting of information regarding occupation, education and place of domicile (see Sandow 2021).
[10] Sandow (2023a, 2023b) focus on Anglo-Cornish dialect words. Thus, this is the first output from this study which focuses on variation and change of more widespread semasiological forms (see Sandow *et al.* (in press) for a discussion of variation and change of more widespread onomasiological features).

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in favour of functional equivalence (for discussion, see Dines 1980; Coupland 1983; Pichler 2010; Terkourafi 2011). However, the semasiological variable also cannot be defined in terms of functional equivalence. Robinson (2010a: 275) proposes that a semasiological variable can be thought of as 'saying different things in the same way'. Various studies using this definition of the semantic variable have demonstrated highly socially stratified patterns of variation (e.g. Robinson 2010a, 2010b, 2012a, 2012b, 2014; Sandow 2023a, 2023b, in press). It is this definition of the variable that we adopt in this study.

From the elicitation procedure used in study 1, *wicked* 'evil', *wicked* 'good', *wicked* 'musical'[11] and *wicked* 'good_reported' are the four attested variants. The 'reported' variant refers to instances where participants demonstrated an awareness of the sense but made clear that they did not use this sense, such as 'I know young people would use *wicked* when talking about something good but I don't do that' (see also Robinson 2010a).

4.1 Results

We focus our analysis on *wicked* 'good' (N = 37) and *wicked* 'evil' (N = 113), collapsing other uses (such as the musical) into a single *wicked* 'other' category due to their low frequencies (N = 10). It is important to note here that the number of tokens collected is relatively small but, despite this, they serve to reveal usage patterns which speak to the socially mediated distribution of the senses of *wicked*.

Initial exploratory analysis reveals an overall change in apparent time towards increasing *wicked* 'good' usage among the younger generations; the use of this sense has increased from 11 per cent (N = 9/80) among older speakers to 35 per cent (N = 28/80) among younger speakers. Considering gendered patterns of variation also reveals an interesting interaction, with *wicked* 'good' increasing from 15 per cent (N = 6/40) among older women (aged 40+) to 25 per cent (N = 10/40) among women younger than 30, while for men the change has seen rates increase more dramatically from 7.5 per cent (N = 3/40) to 45 per cent (N = 18/40). This displays an apparent cross-over effect, with women previously leading the change towards *wicked* 'good' before being overtaken by men.

Adopting a ternary division of age (coding 50+ as 'older', 40s as 'middle' and 20s and below as 'younger') lends further insight into the nature of this cross-over pattern, although the results should be interpreted with a degree of caution given that token counts decrease as more fine-grained groupings of age are used. We find that the change among male speakers is purely monotonic, with *wicked* 'good' becoming increasingly favourable across generations: it is almost completely absent from the older male group (4 per cent, N = 1/26), rising to 14 per cent (N = 2/14) for the middle-aged male group, before culminating in a rate of 45 per cent usage (N = 18/40)

[11] This category consists of references to the hit musical *Wicked*, based on the 1995 novel by Gregory Maguire. An example of this variant is 'Q: Who or what is wicked? A: A musical.'

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among male speakers under the age of 30. However, the change towards *wicked* 'good' among female speakers actually peaks at an earlier stage and at a lower rate, with the most frequent users being women in their 40s (30 per cent, N = 3/10) before essentially plateauing for the very youngest female speakers (25 per cent, N = 10/40).

Mixed-effects logistic regression was carried out in R to establish the statistical significance of these effects. A model was fitted to all tokens of the dependent variable (N = 160), coding each observation as 1 if *wicked* 'good' was produced and as 0 if any other sense was produced; the model included a by-speaker random intercept to account for the fact that individual speakers produce multiple observations. Step-wise regression was used to identify the best-fitting set of independent variables as determined by the lowest Akaike Information Criterion (AIC), a commonly used method of quantifying the relative quality of a model balanced between its predictive power (the amount of variation in the data it explains) and its complexity (the number of predictors it includes). The best-fitting model is one that contains only the predictors of age and gender and their interaction, where the former is operationalised as a tripartite split between younger (< 30), middle-aged (40s) and older (50+) age groups to capture the curvilinear effect described above. The full table of coefficients is reported in table 1. Although the age×gender interaction does not quite reach the traditional threshold for statistical significance ($p = 0.105$), removing the interaction term leads to a slightly worse model, suggesting that it holds some explanatory power and that this effect would most likely be significant with a slightly larger sample size.

This cross-over trend, for women to have been leading the change towards *wicked* 'good' before an apparent plateau while men continue the incrementation of change, is shown clearly in the model prediction plot in figure 1. This result is also supported by the fact that when we operationalise the dependent variable slightly differently and fit a model to individual speakers, coding *wicked* 'good' users as 1 and those who do not use that sense of the word at all in the production study as 0, the age×gender interaction term *is* statistically significant ($\beta = 2.82$, $p = 0.01$).

Table 1. *Coefficients table of the logistic regression model modelling use of* wicked *'good'. Intercept corresponds to middle-aged female speakers. More positive estimates correspond to increased likelihood of* wicked *'good' use; more negative estimates correspond to decreased likelihood (AIC: 163.72)*

Predictor level	Estimate	Standard error	z-value	*p*-value
(intercept)	–0.8473	0.6901	–1.228	0.2200
age: *older*	–1.3499	0.9201	–1.467	0.142
age: *younger*	–0.2513	0.7807	–0.322	0.748
gender: *male*	–0.9445	1.0293	–0.918	0.359
age*gender: *older*male*	–0.0772	1.5714	–0.049	0.961
age*gender: *younger*male*	1.8424	1.1375	1.620	0.105

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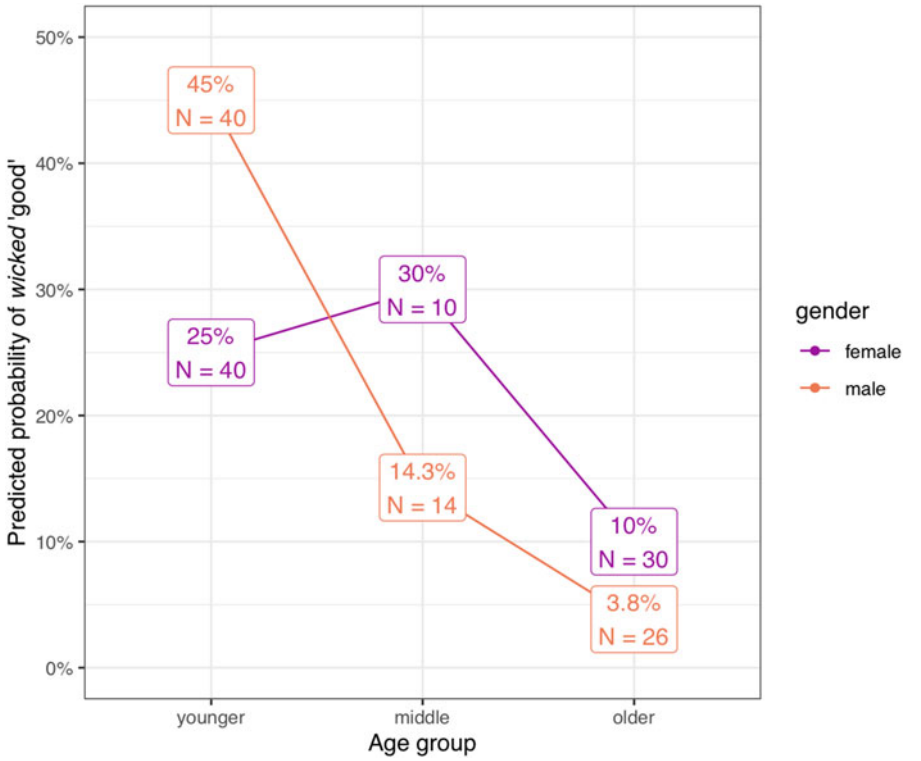

Figure 1. Model prediction plot illustrating the interaction between age group and gender for the use of *wicked* 'good'

While there appear to be age and gender differences, the effect of social class is completely absent. No measure of social class is included in the best-fitting model, which is not surprising when one explores the data descriptively: figure 2 plots the distribution of *wicked* variants by the different factors measuring aspects of socioeconomic status (domicile deprivation, educational level and occupational level) and the results show no significant differences across the levels of these various factors. The only exception to this is the apparent decreased use of *wicked* 'good' among those with the lowest educational level, but it should be noted that this is highly collinear with age: all but one of these speakers are above the age of 40, so this is actually reflecting the strong effect of age outlined earlier.

The results from our production study are remarkably similar to those of Robinson (p.c.) with the exception of the youngest group of females whose counterparts in Sheffield would have been too young to participate in the earlier study. This suggests that the sociolinguistic usage patterns discussed in this article are not particular to Cornwall but speak to a broader process of variation and change of *wicked*.

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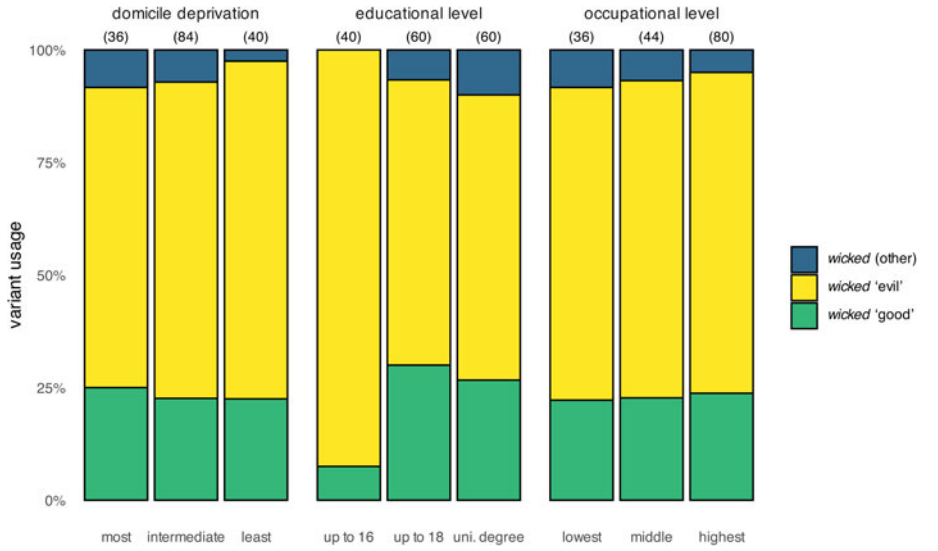

Figure 2. The distribution of all *wicked* variants used by three measures of socioeconomic status: domicile deprivation, level of education, and level of occupation (total number of observations denoted in parentheses)

5 Study 2 – Matched-guise technique

To complement the usage-based study 1, we also conducted a study which explores the perception of the polysemous senses of *wicked* by employing the matched-guise technique (Lambert *et al.* 1960; Campbell-Kibler 2007). We presented participants with 'social media posts'[12] and they were asked to evaluate the posts along a range of persona traits, such as 'professional' or 'posh' (see figure 3 for an example page from the online experiment). Each post had two versions, or 'guises', which are identical with the exception of one lexical item. We explored the social meanings of *wicked* in two different senses, 'evil' and 'good', which were contrasted with synonyms.[13] All participants saw the carrier phrase 'I'm getting pretty decent at this baking thing, I just made some ___ cake mix this morning.' While half saw the blank slot filled with *wicked*, the other half saw *good*. Similarly, for the carrier phrase 'These people are inherently ___ and will do anything to stay in power', half of the participants saw *wicked* for the blank slot while the other half saw *evil*. The carrier phrases were selected as they make it clear which sense is being employed. In the first example, positive affect is evident, making it clear that the 'good' sense is being employed,

[12] The guises employed here use real social media posts which have been minimally altered to protect the anonymity of the social media users who posted them.

[13] We acknowledge that the synonyms are not 'absolute synonyms' as these are extremely rare or non-existent (see discussion in Cruse 1986; Murphy 2013), but they do share a functional equivalence (cf. Dines 1980; Beltrama & Staum Casasanto 2017).

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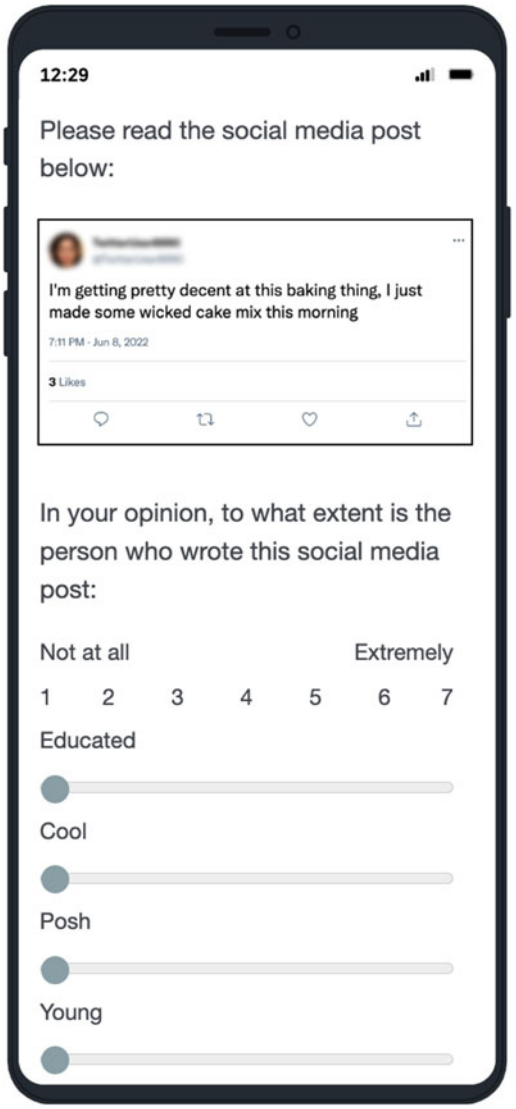

Figure 3. Example page from the online matched-guise experiment, showing the *wicked* 'good' stimulus

whereas in the second example, negative affect is clear, which makes it apparent that the 'evil' sense is being employed.

Spoken stimuli could lead to accent features becoming confounding variables (see also Buchstaller 2006). The written nature of the guises used in this study removes this possibility and enables us to isolate lexical differences across the guises.

Table 2 lists the persona traits that participants evaluated using the sliding scales illustrated in figure 3, which allowed whole-number ratings from 1 (low agreement) to

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Table 2. *List of persona traits used in the matched-guise study*

'Status' traits	'Solidarity' traits	Other
Educated	Cool	Young
Posh	Friendly	
Formal	Honest	
	Attractive	

Table 3. *The sociodemographic composition of the 100-participant sample, by gender, age, occupational category and region*

Gender	Male: N=30	Female: N=70			
Age	18–29: N=33	30–49: N=52	>49: N=15		
Occupation	1: N=7	2: N=43	3: N=32	4: N=6	5: N=12
Region of England	North: N=24	Midlands: N=27	South: N=49		

7 (high agreement). As well as the individual persona traits, for the purposes of our analysis we can additionally cluster these into traits that are broadly composite of 'status' and 'solidarity' (see also Brown 1965; Luhman 1990; Dailey-O'Cain 2000; Ng & Diskin-Holdaway 2021). We consider 'educated', 'posh' and 'formal' as 'status' traits. Conversely, we consider 'cool', 'friendly', 'honest' and 'attractive' as 'solidarity' traits (see, for example, Beltrama 2018; Clark & Schleef 2010).

One hundred individuals from England took part in the study, which was administered through *Prolific*. Information was collected regarding the age, gender and occupational type of each respondent. The sociodemographic composition of the 100-participant sample is displayed in table 3. Participants were asked to self-identify their gender, age, occupation and the region of England in which they were born and raised. In terms of occupation, participants were asked to state if their work was best categorised as 'higher managerial and professional' (1), 'intermediate' (2), '"white-collar" and lower managerial or clerical' (3), ' "blue-collar" lower supervisory and technical' (4) or 'semi-routine or routine' (5). We employed a between-subjects design, with each of the four variants being rated by a total of 50 participants. A control stimulus was seen by all participants. This served to ensure that there were no differences in how the four groups of participants responded to the same stimuli. Indeed, there were no statistically significant effects for this guise. Thus, any differences in the perceptions between the stimuli can be attributed to the differences in social meaning between the synonyms.

5.1 Results

The overall results from the perception task are presented in figure 4, plotted separately for the two pairs of guises (*wicked* 'good' vs *good* and *wicked* 'evil' vs *evil*), aggregated

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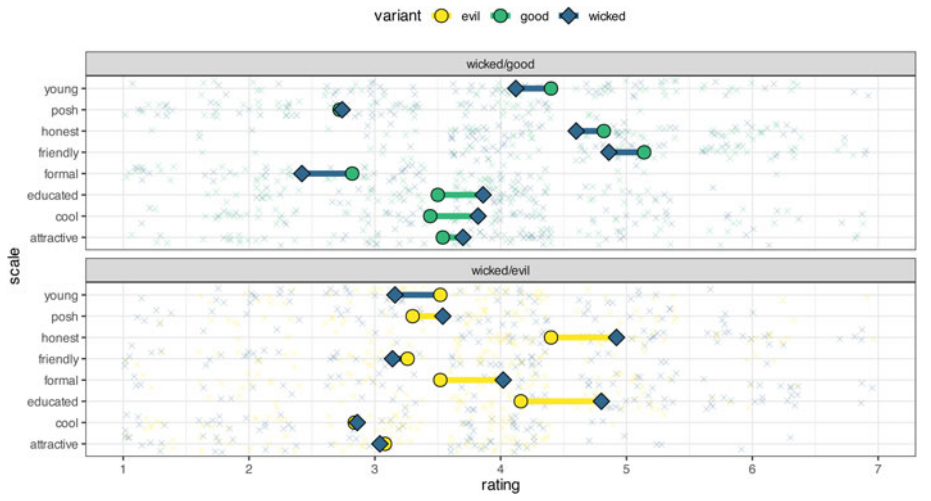

Figure 4. Perceptions of *wicked* 'good' vs *good* (top) and *wicked* 'evil' vs *evil* (bottom); 1 = not at all, 7 = very much so. Diamonds/circles correspond to mean rating for that particular variant–scale pair

across all listeners and split by each of the eight descriptive scales. Although the differences between guises are generally quite small, there are a number of interesting trends observable in the data. *Wicked* 'good' was evaluated as indexical of the solidarity trait 'cool', while it scored comparatively lower in the status characteristic of 'formality'. On the other hand, *wicked* 'evil' was evaluated more positively on status-related dimensions, particularly 'educated' and 'formal', as opposed to its synonym *evil*. An interesting result emerges on the 'young' descriptive scale: both positive and negative senses of *wicked* are seen as less 'young' than their respective synonyms, suggesting that it may be the form *wicked* that is perceived as less young, rather than any particular sense.

We can gain further insight into the perception of *wicked* by considering how the evaluative responses might interact with the gender or age of the listener. In figure 5 we combine the individual evaluative scales into broader status/solidarity dimensions and plot the perception of *wicked* 'good' by gender. It shows that while females penalise this use of *wicked* along status dimensions, males do not. In fact, males perceive *wicked* 'good' to be slightly more statusful than *good*.

To establish the statistical significance of these results, the data were modelled using cumulative link mixed models (CLMM), which are more appropriate than linear regression models in this case of ordinal data where the perceptual distances between points on the scale may vary across the scale and between listeners. A model was initially fitted to the response data including an interaction between variant (e.g. *wicked* 'good' vs *good*) and scale, and a random intercept of listener.

To diagnose significant differences between evaluations of the variants on individual descriptive scales, pairwise comparisons were conducted by comparing estimated

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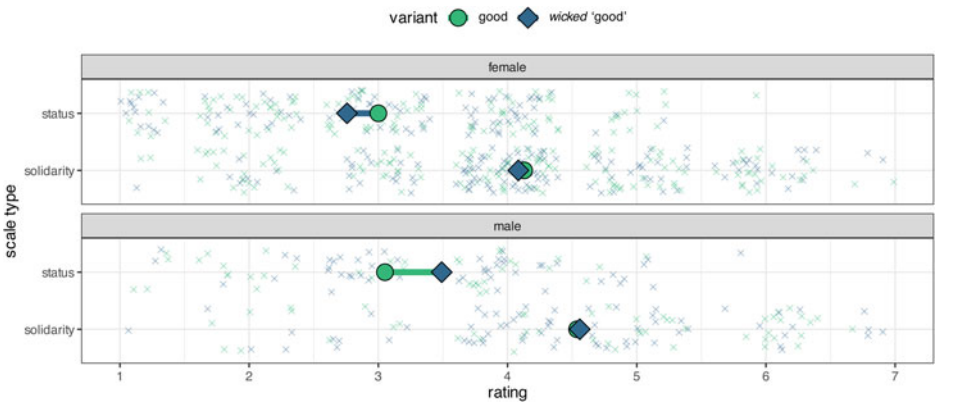

Figure 5. Perceptions of *wicked* 'good' vs *good* split by listener gender; 1 = not at all, 7 = very much so. Diamonds/circles correspond to mean rating for that particular variant–scale pair

marginal means using the `emmeans` package in R (Lenth 2021). The results reveal no significant differences between the perception of *wicked* 'good' and *good* when we model all listeners together. However, significant differences do emerge between *wicked* 'evil' and its synonym *evil*, with the former indexing status significantly more than the latter ($\beta = 0.635$, $p = 0.036$); when investigating this in a finer-grained manner looking at the individual descriptive scales, it seems this effect is driven primarily by the 'educated' trait ($\beta = 1.228$, $p = 0.006$), although the formal scale also nears significance ($\beta = 0.860$, $p = 0.063$). *Wicked* 'evil' is also seen as significantly more 'honest' than *evil* ($\beta = 1.063$, $p = 0.022$), but no other significant indexicalities are found.[14]

More differences emerge when we consider how these perceptions might interact with the gender and age of the listener, and these largely parallel the gendered differences in production found in study 1 as discussed earlier. A second CLMM was fitted to the data, this time with a four-way interaction between variant, scale type (*status* vs *solidarity* traits), and listener age group (*younger* [<40] vs *older* [40+]) and gender (*male* vs *female*). Significant differences emerge for the older male group, who rate *wicked* 'good' as significantly higher than *good* on measures of both status ($\beta = 2.282$, $p = 0.033$) and solidarity ($\beta = 3.319$, $p < 0.001$). This is visualised in figures 5–6, which plot the predicted values from the regression model and visualise the probability of each rating on the 1–7 scale as a function of variant; positive values represent an increased likelihood of *wicked* 'good', rather than *good*, receiving that rating, whereas negative values for a rating represent a decreased likelihood of that rating being given to *wicked* 'good'. Figure 6 clearly shows that this

[14] One possible reason for the finding that *wicked* 'evil' is perceived to index honesty is the association between this sense and religion. For example, when searching Twitter for stimuli, the majority of the clear uses of *wicked* 'evil' were religious in nature.

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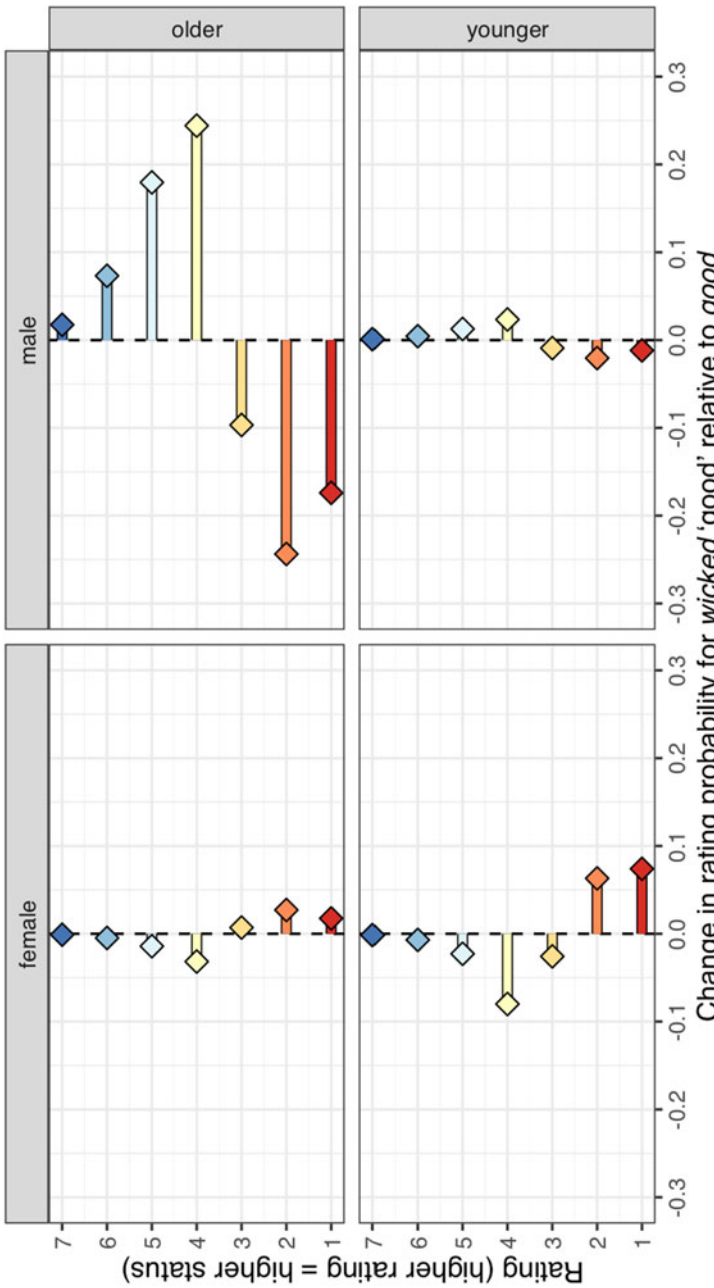

Figure 6. Predicted CLMM rating probabilities on the 'status' scales; positive values indicate higher rating for *wicked* 'good', negative values indicate higher rating for *good*

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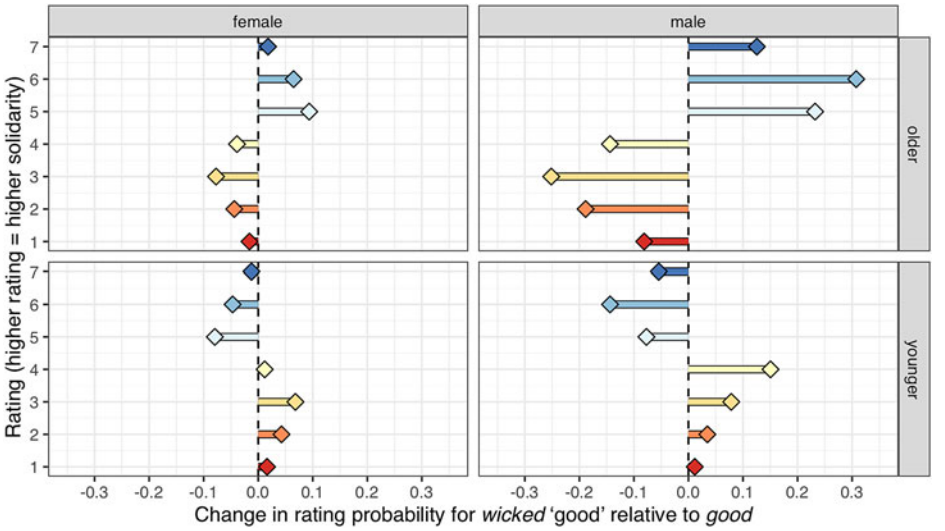

Figure 7. Predicted CLMM rating probabilities on the 'solidarity' scales; positive values indicate higher rating for *wicked* 'good', negative values indicate higher rating for *good*

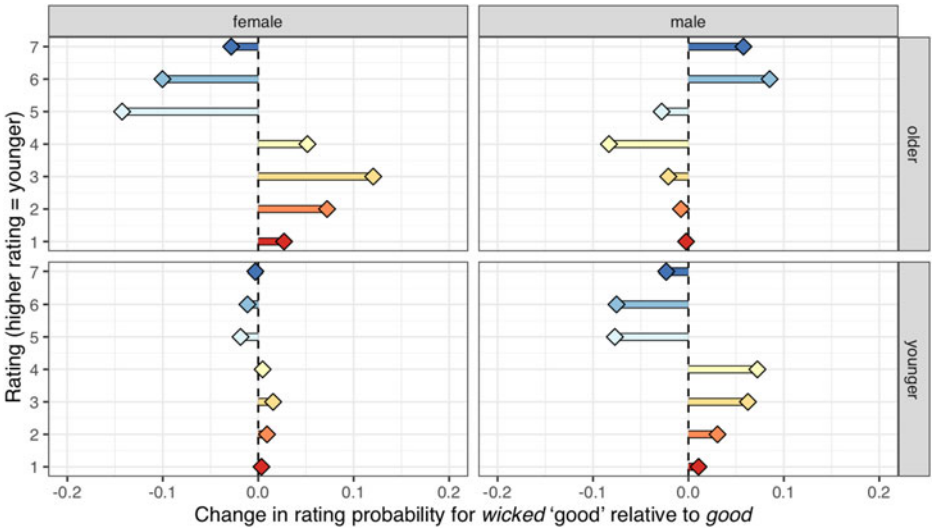

Figure 8. Predicted CLMM rating probabilities on the 'young' scale; positive values indicate higher rating for *wicked* 'good', negative values indicate higher rating for *good*

status-oriented social meaning is only present for the older male respondents, with *wicked* 'good' significantly more likely to receive mid-to-high ratings (particularly 4–5) and less likely to receive the lower ratings (particularly 1–2). Figure 7 plots the same information for the solidarity scales, and shows a broadly similar pattern: older respondents evaluate *wicked* 'good' more positively than *good* with a higher probability of ratings 5–7 and

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lower probability of ratings 1–4, but this is strongest (and only reaches statistical significance) among older males specifically.

The focus of these results has thus far been on the status and solidarity ratings, but listeners were also asked to rate the guises based on how young they perceive the author to be. The model estimates for this scale are visualised in figure 8 in the same way those for status and solidarity were presented earlier. No significant differences emerged between how *wicked* 'good' and its synonym *good* were rated on the 'young' scale, although the most common trend in the data sees *wicked* 'good' being perceived as less young than *good* ($\beta = 1.223$, $p = 0.156$ for older women; $\beta = 0.720$, $p = 0.425$ for younger men). Curiously, the older male respondents are the only ones for whom the non-significant trend patterns in the opposite direction, with *wicked* 'good' possibly perceived as younger ($\beta = 0.594$, $p = 0.694$), and were also the only social group to perceive it significantly more positively on the status and solidarity scales.

6 Discussion

Interpreting the results of study 1 in the context of Robinson's (p.c.) findings, which showed a female-led change towards *wicked* 'good' in 2005–6, we too find that this change is most advanced in women, with the exception of the youngest group (see figure 1). It is the males in the youngest group who are most advanced in their usage of *wicked* 'good'. One possible interpretation of this pattern is that young women are leading a shift away from this positive usage of *wicked*, or at the very least have stopped its incrementation in a way that is not at all evident for young men, who have continued to increasingly use *wicked* 'good'. This interpretation is consistent with Labov's (1990, 2001) principles of language change, with women leading in the initial change but also being at the forefront of this more recent shift away from it. It is worth noting that *wicked* 'evil' is typically seen to hold a higher degree of prestige than *wicked* 'good', as indicated by its status-type indices in study 2 and metalinguistic commentaries from Robinson (2010a: 210).

The elicited data may show an incipient retrograde change at the level of the community, with young women shifting away from the newer sense. Citing evidence from her panel study conducted in 2015–16, Robinson (p.c.) also provides some evidence of retrograde change at the level of the individual, with participant metalinguistic commentary reflecting on their adoption and subsequent shedding of *wicked* 'good'. This pattern is not age-grading proper, which refers to a cyclical process of community stability and individual instability (Chambers 2003; Boberg 2004; Sankoff & Blondeau 2007; Buchstaller 2015). The data do not seem to indicate community-wide stability here, but change across apparent-time. Thus, it is possible that the observed variation and change of *wicked* 'good' is indicative of retrograde lifespan change (see Wagner 2012; Sankoff 2019), with change at the community and individual levels coalescing around the loss of *wicked* 'good'. However, further longitudinal analysis would be required to verify this interpretation.

The findings of study 2 account, to a large extent, for the usage patterns in study 1. Given that young men are the most frequent users of *wicked* 'good' it is unsurprising

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that males evaluate this sense more positively than its synonym *evil*, in both status and solidarity attributes. Conversely, the sense favoured most by young women, *wicked* 'evil', is rated positively for status-type characteristics. The age pattern in our usage data, which suggests a nascent change away from *wicked* 'good' towards the older sense *wicked* 'evil', is consistent with the trend in the perception data, albeit not statistically significant, that *wicked* 'good' is not perceived as young. This provides an interesting parallel to the observation that young women are not participating in the incrementation of the change towards *wicked* 'good' in the same way that women in older generations did, relative to their male counterparts. It is perhaps not surprising that the demographic group who rate *wicked* 'good' as the least young are the older women, who have been around long enough to observe both the original semantic change towards its positive sense and this more recent, female-driven lack of incrementation of it; that is, they are the most acutely aware of the zeitgeist-esque nature of the change and its relatively short-lived popularity in usage, and are therefore the least likely to associate the use of this sense with a youthful style of speech.[15]

The results presented here are testament to the vigorous, yet socially mediated, nature of lexical change. As lexis is less constrained by the critical period, it can react to perceptual changes more dynamically than more structural features such as phonetics, phonology and morphosyntax. The case study of *wicked* demonstrates the speed and dynamism of lexical change, shifting to and then, slightly away from *wicked* 'good'. These results, specifically the parallels between patterns of variation in production and perception, also speak to the mechanisms of lexical change which can complement ongoing research into the role of social meaning and indexicality that has previously taken place primarily in relation to sound change (see Eckert & Labov 2017; Bermúdez-Otero 2020; Hall-Lew *et al.* 2021). Although it is not possible to draw a direct causal link between them, the indexical field of *wicked* – for both its 'good' and 'evil' senses – does provide a possible explanation for the changes we observe in production. The role of social meaning in driving forward the incrementation of language change has been called into question in cases of sound change specifically (see e.g. Bailey 2019, and Bermúdez-Otero 2020 for a more general discussion of these issues), but it is possible that such causal relationships are more likely in the case of lexical/semantic changes for the reasons discussed above.

It is important to acknowledge a number of limitations of the studies presented in this article and the subsequent discussion. Firstly, while we compare the results from study 1 with Robinson's (2010a) earlier data, it is important to highlight that the localities in which the data were collected have non-trivial differences. While Robinson's data were collected in Sheffield, South Yorkshire, an urban post-industrial city, our study 1 was conducted in the (also post-industrial) Cornish towns of Camborne and Redruth. Although Camborne–Redruth is urban by Cornish standards, it is far less urban than

[15] See Fruehwald (2017) for a detailed treatment of the 'zeitgeist' effects in language change and how, with the appropriate wealth of data, these can be disentangled from more typical instances of generational change and lifespan change.

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Sheffield. Thus, the nature of social network structures may differ between the communities, which could account for some degree of the variation between the two studies. Additionally, a key limitation of the matched-guise study is that each sense was tested in one context only. More robust conclusions could be drawn from a study which contrasts a polysemous adjective with synonyms in multiple carrier phrases, ranging in terms of conceptual domains, e.g. *wicked* vs *good/evil* in the context of food, sport, weather etc. Similarly, all of the guises were presented as 'social media posts'. Further research may determine whether this context reduces the distinctions in social meanings between variants when compared with other contexts, such as formal writing.

A further limitation in both studies is the relatively small data sets. While 80 participants in a variationist study (such as study 1) is relatively large, they each produced two variants of the investigated variables, which is much lower than is typically the case for variables at other levels of the grammar. In study 2, 100 participants is a relatively small number for a matched-guise study. This means that our results do not have a great deal of statistical power, and that larger data sets would therefore be needed to diagnose differences of this effect size at the conventional threshold for significance.

To conclude, in this article we have showcased the value of considering both production and perception data in order to understand processes of semantic change, using *wicked* as a case study. We have adopted Robinson's (2010a: 275) definition of a semantic variable, that is, 'saying different things in the same way' and demonstrated the socially mediated trajectory of semantic change. Specifically, we have shown that young women are no longer incrementing the change towards *wicked* 'good' and may be participating in an incipient change back towards the more traditional sense *wicked* 'evil'. This finding speaks to a broader point about the utility of sociolinguistic theory. While Labov (1990, 2001) did not primarily have lexis in mind when discussing gender effects in sociolinguistic variation and change, we have demonstrated their applicability to the polysemous adjective *wicked*. We have also highlighted the potential to elicit rich information regarding the social meaning of lexical items through modified matched-guise stimuli, which in this case enables us to interpret usage data in the context of indexical meanings. Synthesising the usage and perception data in this study has enabled us to develop a more thorough understanding of the process of semantic change than would be possible by studying production or perception in isolation. Ultimately, this article makes a contribution to the growing yet still limited literature which explores semantic variation through a variationist sociolinguistic lens and, more particularly, considers the role of social meaning in semantic change.

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