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Elicitation and experimentation: implications for English sociolinguistics

Cameron Morin and Carmelo Alessandro Basile

1. Introduction

- 1 In a recent and important issue of the journal *Linguistics*, several authors were encouraged to reflect on a major ongoing issue in a wide array of both natural and social sciences, most notably in psychology, known as the *replication crisis* (Sönning and Werner 2021): namely, the finding that many quantitative studies from the past twenty years and their results fail to replicate and generalise at expected rates, due to a complex set of factors including inadequate use of statistics, poor research practices, and a lack of open science policies. As a field that has undergone rapid and profound changes roughly over the same period towards increasingly quantitative epistemologies – Kortmann (2021) discusses aspects of a “quantitative turn” –, it has become apparent that linguistics is now prone to similar problems of reproducibility, and some commentators interpret this crucial moment for the field in Kuhnian terms (Kuhn 1996), potentially as a transition period towards a methodological form of paradigm shift (Sönning and Werner 2021).
- 2 Within the broader category of types of poor research practices/designs that are evoked for what may be called the “current paradigm” (possibly, the soon-to-be “old” one), Grieve (2021) focuses on the problematic use of concepts and terminology associated with experimentation research in linguistic studies, when many of these studies are ultimately observational in nature. In fact, he argues that replication failure may not be simply due to poor research practices, but most importantly to “inherent issues with the application of experimental methods to analyse an inextricably social phenomenon” – namely, language (Grieve 2021: 1343). Grieve does not state that experimentation is impossible in linguistics, but that in several areas it is an

inappropriate empirical approach, because such attempts run the risk of oversimplifying and ultimately misconstruing purported independent variables that are inherently complex and not amenable to the type of control that is expected in experimental research.

- 3 In particular, Grieve discusses the impossibility of manipulating social phenomena such as language variety – for instance a language, e.g. L1 or L2, or a specific variety within a language, e.g. a dialect of English – as independent variables in an experimental framework. Language being a complex social system and phenomenon, its use varies considerably across social contexts, to the extent that it cannot be reliably isolated as a variable to explore direct causal links, e.g. between language varieties taken as independent variables and language production or perception taken as dependent variables. Comparative studies of measures of production and perception across social groups are valuable and informative, but they are ultimately observational, not experimental, despite being presented as such sometimes in major publications: in the case of dialect variables, Grieve cites at least three recent studies (Montrul et al. 2015; Walker 2019; Yun and Kang 2019) that make this equation.
- 4 The tendency Grieve describes regarding observational studies of social variation in language production and perception is likely to be explained at least in part by sociological factors in the field. One of these factors may be a general prescriptive attitude in favour of experimental research and to the detriment of observational research, inherited from the influence of the epistemology of Generative Grammar, one of the dominant approaches to linguistics since the 1960s. Chomsky notoriously disparaged corpus linguistics as meaningless because it was akin to “tak[ing] videotapes of things happening in the world and [collecting] huge videotapes of everything that’s happening and [maybe coming] up with some generalizations or insights” instead of doing experiments to investigate linguistic structure as in physics or chemistry, allegedly the mainstream scientific method (Andor 2014: 97). This type of attitude is likely to have contributed to a sociological propensity for some linguists, especially those working on grammar, to seek experimentation as the ideal and optimal empirical approach in their work, despite the inherent limitations of applying such an approach to their object of study, e.g. the linguistic competence of one or more native speakers in the form of a variety.
- 5 However, there may also be other influences at play to explain this cultural issue in the field, which are less about attitudes and more about an unfortunately easy conflation of concepts which needs to be analysed explicitly for future work to avoid undesirable issues of reproducibility, comparability, and generalizability, mainly in the form of unwarranted factual claims. In this paper, we aim to develop this aspect of the discussion and build upon the initial remarks by Grieve, examining a few of their implications for future studies in English sociolinguistics and dialectology that are concerned with grammatical variation across social groups distinguished by language variety and dialect, highlighting the nature of such varieties as inextricably social phenomena and sets of social practices. We will especially focus on empirical approaches to this kind of variation that make use of methods based on data elicitation, including but not limited to questionnaires and acceptability judgments. Indeed, corpus linguistics being an unambiguously observational method, it is not concerned by the issues above in quite the same way as elicitation studies, which, by contrast, run the risk of being equated with experimental studies. This is especially the case if they are

implemented in structured and rigorous ways, such as in the form of acceptability judgments tasks, whose specific structure enables them to be embedded in experimental frameworks, adding to risks of confusion. We thus believe there is need for a more explicit or salient view of what elicitation is conceptually and how it relates to the dichotomy between observation and experimentation, whether it deserves a separate ontological status despite exhibiting aspects likening it to each of the two frameworks. This may enable us not only to have a clearer view of what such empirical approaches entail for English sociolinguistics and dialectology, but also to further challenge the prescriptive hierarchy of experimentation over observation. Indeed, as reminded by Grieve, observational approaches are in fact at the heart of natural and social science (Nilsen et al.2020; Tukey 1977), including linguistics (Divjak et al. 2017). They should thus be embraced and defended as valid undertakings, sometimes the only valid ones, for uncovering evidence about relationships that matter in the real world, giving us exploratory material to indirectly discuss causal links and formulate hypotheses where experiments directly examine these links. We argue that this proposal holds for elicitation-based observational studies of social variation in language use taking English as a social practice, using two short case studies to illustrate our points.

- 6 Our discussion will be structured as follows. In Section 2, we draw a summary of the differences between observation and experimentation in science and linguistics. We argue these differences entail that experimental approaches to sociolinguistic variation and dialect variation are inherently limited by the nature of the object of study as a complex social phenomenon. In Section 3, we pay closer attention to the concept of elicitation and try to define it in relation with the observation/experimentation dichotomy. We propose that elicitation should be viewed as a scientific technique whose defining aspect is intervention via stimulus manipulation with varying types of structure. This technique can then be embedded in an observational or experimental framework depending on the variables of interest. We notably discuss acceptability judgments as a challenging elicitation type whose sophisticated structure may be considered experimental, but not in a way that allows us to infer causal links between sociolect and acceptability directly. In Section 4, we present the results of a pilot study using acceptability judgments on double modals by speakers from the Southeast of England. We show that the embedding of experimentally structured elicitation in an observational framework allows us to make useful exploratory suggestions about language use in this area and social variation between it and other regions such as the Scottish Borders, without making unwarranted causal claims. In Section 5, we discuss the methodology of an elicitation-based sociolinguistic questionnaire designed to investigate the use of modals and semi-modals in Singapore English. This questionnaire is presented as a valuable technique that can complement observational analyses based on large corpora, which often lack metadata on the social background of the contributors (e.g. ethnicity, gender, age, and education level). We consider a provisional data sample collected with this questionnaire to investigate attitudes in modal selection among a group of Singaporean Chinese respondents of different age, gender and education backgrounds. Section 6 concludes by encouraging future elicitation work in English sociolinguistics and dialectology to embrace the observational and exploratory approach to science as what makes them valuable, using experimental concepts only with great care, with a view to strengthen behaviours proposed by Sønning & Werner (2021) as desirable for the potential next

methodological paradigm of linguistics, especially cumulative thinking, caution, and acceptance of uncertainty.

2. Observation and experimentation: implications for English sociolinguistics

- 7 Observation and experimentation are generally considered to be the two main approaches to practicing empirical science, and although there is disagreement on how separate they are in the scientific process and its concrete practice (Okasha 2011; Malik 2017), this distinction is often useful to characterise dominant empirical approaches in specific scientific disciplines. For instance, in the natural sciences, observational approaches are dominant in the disciplines of “archeology, astronomy, geology, and geography” (Grieve 2021: 1350), whereas experimental approaches are dominant in the disciplines of physics and chemistry. A starting point to differentiate the two approaches is that “experiments involve actively intervening in the course of nature, as opposed to observing events that would have happened anyway” (Okasha 2011: 222). As intuitive as this sounds, we can already anticipate problems involving the notion of “intervention”, which Okasha admits is “unclear” (2011: 222) and which the concept of elicitation is likely to challenge.
- 8 Alternatively, Grieve’s account leads us to suggest that the distinction is driven by *what* these approaches describe before being driven by *how* they describe it: an experimental approach aims to describe a causal link directly, whereas an observational approach aims to establish whether “the causal link matters in the real world” (Grieve 2021: 1353). This relatively simple distinction has important ramifications, because causal inference generally requires a specific and structured type of intervention, which constitutes the experimental framework itself. There are thus reasons to believe that it is a specific type of phenomenon (causal links) followed by a specific type of structured intervention that distinguishes experimentation from observation most clearly. The ideal approach to experimentation is the manipulation of levels of an independent variable across groups to which subjects have been randomly assigned, also known as a between-subject framework, although alternative frameworks are possible at the cost of less clear causal inferences, such as within-subject frameworks and quasi-experiments, the latter two being more common in linguistics. The goal of these approaches is to discover the presence or lack of a causal link between the independent variable and an outcome variable, isolated in the context of a highly controlled setting such as the laboratory.
- 9 Based on these considerations, we quickly see that such an approach to the study of social variation of language use or acceptability runs into a number of inherent limitations. The most obvious limitation is the impossibility of isolating a phenomenon such as a language variety or a dialect and manipulating it as an independent variable to measure outcome variables. As Grieve reminds us explicitly, language is a complex social phenomenon that varies considerably across social contexts. We may add that the very operationalisation of a concept such as “language variety” or “sociolect” is an empirical challenge that the modern fields of sociolinguistics and dialectology have been aware of since their beginnings. For instance, it is partly as a critique of the reification of the native speaker variety in theories such as Generative Grammar that Labov put forward the idea of the “inherent variability” of language (Labov 1969;

Gordon 2012). This inherent variability of language due to dynamic social practices does not only operate at the level of the sociolect but much more finely down to the level of the idiolect, so that there is no clear way to isolate and analyse sociolects except for practical convenience. It thus comes as no surprise that sociolects are not variables that can be reliably manipulated in an experimental context: sociolects are abstractions from reality which, despite being useful and relevant to describe real-world phenomena, do not apprehend a precise enough aspect of reality that the researcher can intervene in.

- 10 Another important side-effect of this inherent limitation is the potentially impossible goal to randomly sample a population belonging to a language variety or dialect, since the variety of interest can be at best a well-informed and structured approximation by the researcher, for instance by pre-screening participants in a sociolinguistic study. One example is the post-hoc category of “Nonmobile Older Rural Males” (NORM) that turned out to make up the bulk of the population studied in the Survey of English dialects (SED, 1950–61). Not only is the category of NORM an approximation of the social group it aims to describe, but from a practical perspective random sampling based on such criteria can be extremely difficult, especially when a speech community is difficult to access. Thus, the dominant sampling methods in sociolinguistics and dialectology over the years have been various sub-forms of judgment sampling such as convenience sampling or snowball sampling, challenging the generalizability of results (Bailey and Dyer 1992). This second limitation also works against the amenability of sociolects to experimentation, which prioritizes random sampling and random assignment to groups for the manipulation of independent variables.
- 11 Given these crucial problems, it seems unlikely that experimentation involving manipulation of sociolects can ever be a valid approach to seek in sociolinguistic and dialectological studies, including those focusing on English, a language that has gathered a considerable amount of research on its varieties and dialects. This state of affairs is due to the inherently complex social phenomena that varieties of English are as sets of social practices across social contexts. Their nature as social objects of study leads to restrictions in possible empirical approaches that are similar to those in other social sciences, especially sociology. The main and possibly only valid way to approach these complex objects of study is through an ultimately observational approach.
- 12 To some the points put forward here may sound obvious, but we believe they are important to stress in a context where research on language structure has been strongly influenced by an attitude heavy-handedly encouraging an experimental epistemology, as Grieve has pointed out. To be sure, not all sub-disciplines and methodologies in sociolinguistics and dialectology are equally concerned by the risk of spuriously using experimental frameworks. Corpus linguistics for instance, one of the major methodological approaches to language variation (Baker 2010), has a purely observational philosophy, often with minimal intervention in the production and collection of data. The issues outlined above may be most relevant for a fairly specific sub-discipline of sociolinguistics which is concerned with grammatical variation in language varieties and relies on elicitation-based methodologies. As a discipline interested in language structure, the desire to manipulate sociolects and investigate their effect on grammatical dependent variables is easy to understand, especially given the cultural bias for experimentation in dominant strands of grammatical theory. In addition, there may be another aspect needing clarification that is less cultural than it

is conceptual. The standard intuitive view of experimentation sees it as involving an intervention on the part of the researcher. However, elicitation in sociolinguistics is undoubtedly a type of intervention. There is thus a risk of conflating elicitation and experimentation, and we try to tease apart the former notion from the latter for a better understanding of what is at stake for elicitation-based sociolinguistics.

3. Elicitation as an empirical technique

13 Elicitation has been and continues to be a widespread term and activity in linguistics, not only in language documentation (Lüpke 2009) and sociolinguistics (e.g. the Survey of English Dialects, 1950–61), but also grammatical theory (Harris & Voegelin 1953) and many related disciplines. However, it is often used in a practical and applicational perspective, and few accounts take the time to try to define what elicitation exactly is. One useful proposal is put forward by Bohnemeyer (2015), who delineates data collection methods in semantic fieldwork along the following lines:

14 Table 1: a classification of data gathering techniques in semantic fieldwork (adapted from Bohnemeyer 2015: 21)

	Recording of spontaneous speech events	Staged communication events	Elicitation
Linguistic behaviour (response)	+	+	+
Task	-	+	+
Stimulus	-	-	+

15 In this view, elicitation is a technique involving three defining components, namely a stimulus, a task, and a behaviour or response. Crucially, the response is gathered as an output of researcher intervention, i.e. the manipulation of a stimulus embedded in a task, thus in a controlled context. At the expense of naturalness (the “spontaneous” use of language), elicitation allows the researcher to isolate features and behaviours that would be difficult to access in the normal course of language use. We can already see that this challenges the intuitive definition of experimentation as a form of researcher intervention (Oshaka 2011). Elicitation in the discipline of language documentation is traditionally not part of experiments but of surveys, especially questionnaires (Comrie & Smith 1977). In these cases elicitation is used in observational linguistic studies.

16 Another important aspect of elicitation emerges when looking at other scientific fields that make use of it. Senft (2009), for instance, identifies elicitation as a form of data gathering also used in sociology, social psychology, and other social sciences in general. However, its presence is more widely found in branches of natural sciences, especially biology: for instance, zoology, such as in studies on the behaviour of ants (Turza & Miler 2021), and even plant science (Ramirez et al. 2016). The shared feature of all these applications is the presence of a biological organism that can display behaviours in response to a stimulus.

- 17 The consequence of such a view of elicitation is that it does not inherently belong to either term of the observation/experimentation dichotomy. Conceptually, elicitation is best viewed as a scientific technique that can be implemented in different ways via the structure of its stimulus manipulation, such as in an observational framework or an experimental framework. The stimulus is the basic tool component of this technique. We can build upon this view by making a comparison with a more traditional scientific measurement tool, such as a thermometer (Grieve, p.c.). Thermometers can be flexibly embedded in observational and experimental frameworks alike: for instance, one can take a thermometer, walk through a nearby forest and record the temperatures of different objects found in that forest. This would be an observational implementation, potentially leading to the identification of meaningful tendencies in the environment. Alternatively, one can take a physical object and put it in two different liquids, measuring the temperature of the object using a thermometer. This would be an experimental implementation, where the type of liquid is manipulated to see if it causes a change of temperature. Similarly, an elicitation task can either be observational – e.g. a questionnaire submitted to a speaker to provide judgments on their language variety or dialect – or experimental – e.g. a judgment task with a clearly manipulable independent variable such as the amount of noise in the background and its potential effect on responses. Elicitation and experimentation differ in the entity affected – elicitation is exclusive to biological organisms while experiments can involve inanimate objects such as rocks or liquids – as well as their ontological status in the scientific process – experimentation is a framework, with a specific variable manipulation structure, while elicitation is a scientific technique which can be embedded in the framework or not depending on whether its structure matches the requirements of that framework.
- 18 We thus see that elicitation is a different concept from experimentation, although part of what makes the conflation possible is the feature of intervention which makes them overlap to an extent. One type of elicitation that adds another layer of complexity to our discussion, and that is especially relevant for the study of morphosyntactic variation in sociolinguistics and dialectology, is the acceptability judgment technique. Acceptability judgments are elicitation tasks that take sentences as stimuli, speakers as subjects, and sentence ratings as responses. They have been used increasingly widely since the late 1990s (Schütze 1996) in psycholinguistic experiments (e.g. Gibson et al. 2017), but also more recently in sociolinguistics and dialectology focused on morphosyntax (e.g. Zanuttini et al. 2018, Smith et al. 2019, Jamieson 2020). The stimulus manipulation structure involved in these tasks can arguably be considered experimental, for instance if one carefully isolates several grammatical construction types and measures acceptability rates from speaker responses using counterbalancing, randomization of items, inclusion of fillers and distractors, and statistical analysis of the results, to see if there is an effect of construction type on acceptability (Bross 2019). From this narrow perspective, it is potentially appropriate to consider each judgment task by individual speakers and the overall collective task as experimental. But much caution is needed as we move up from the task itself to the interpretation of results in terms of how sociolect affects acceptability, for instance if we want to compare results across different social groups and make claims about meaningful relationships between them. This interpretation runs into the limitations discussed previously, namely the inability to manipulate language variety as an independent variable and identify a causal link between it and acceptability, as well as the consequential lack of

generalizability to a dialect population. Any discussion of hypothetical causal links between the two is necessarily exploratory and observational, and there are reasons to believe that it can't be any other way in the foreseeable future.

- 19 As we alluded to in the introduction to this paper, our discussion does not aim to present these limitations as depreciations of elicitation-based studies of grammatical variation in English sociolinguistics and dialectology. Quite the contrary, as practitioners of these techniques we want to strongly assert their validity and value in linguistics as approaches to uncovering significant relationships in the real world, providing exploratory material to discuss the plausibility of causal links and enable us to make progress in our understanding of the social knowledge or use of language. We simply aim to make their nature explicit as ultimately observational studies, even in the case of acceptability judgment studies which manipulate stimuli very carefully and rigorously. Several recent efforts in the study of morphosyntactic variation in English (e.g. Zanuttini et al. 2018, Smith et al. 2019, Jamieson 2020) already appear to endorse this philosophy at least implicitly. We believe that making these issues even more explicit will allow elicitation-based English sociolinguistics and dialectology to be more naturally integrated in a new methodological paradigm for linguistics delineated by Sönning & Werner (2021). In the following sections, we illustrate some of our points with two short case studies that investigate social grammatical variation in English using elicitation-based methodologies.

4. Embedding experimental elicitation in an observational survey: double modals in South-East England

- 20 Double modals are non-standard grammatical constructions that have been attested in a small set of regional varieties of English across the world. They are most commonly witnessed in varieties of American English in the South and Southeast United States, as explained in the Yale Grammatical Diversity Project (Huang 2011), and much more rarely in three regional varieties of English in Britain, namely Borders Scots (Bour 2014; Morin 2021), Northumbrian English (Beal 2004) and Ulster Scots in the Northeast of Ireland (Corrigan 2011). Given the difficulties in gathering naturalistic data on these infrequent and regionally stigmatized forms, modern acceptability judgment elicitation methods appear to be a useful technique to investigate them anew. In the context of the Scots Syntax Atlas project, Smith et al. (2019) report moderate to high acceptability rates of a small set of double modals in some towns of the Scottish Borders based on 5-point Likert scales, including the following forms (1a-e).

(1a) You **used to could** get the papers at the shop in the corner.

(1b) He'll **can** do it next week.

(1c) He **might can** help you next week.

(1d) Why **would I might** know him?

(1e) He **must can** swim, I see him at the pool all the time.

- 21 Smith et al. (2019) also suggest that double modals, such as *might can*, are declining in acceptability, especially among younger speakers. This phenomenon is more strongly alluded to in the case of Northumbrian and Northeast Irish English/Ulster Scots, to the extent that they may be on the verge of extinction, or extinct altogether. However, there have been no specific studies comparing contemporary acceptability rates of

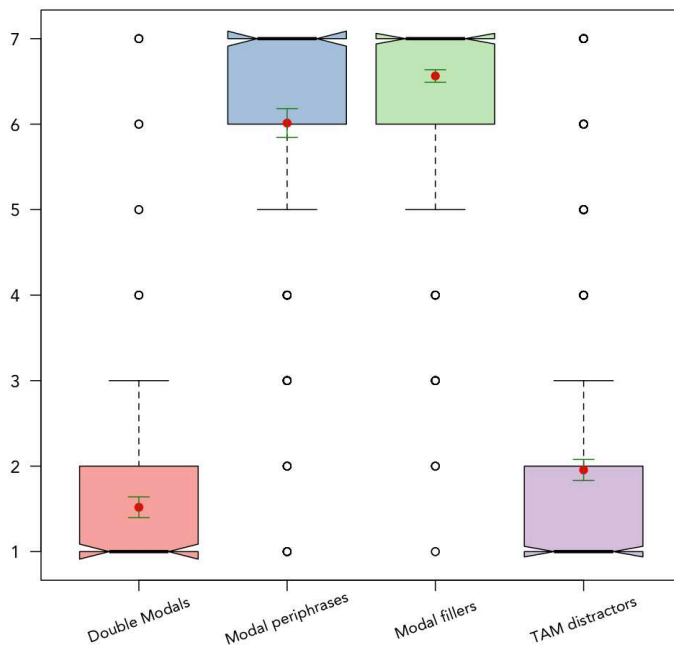
double modals between these three regions. Moreover, although the rarity and non-standard nature of these forms suggest that they should be unacceptable to most speakers of Southeast England, whose varieties, such as Estuary English (Wells 1998), are closer to Standard British English, there have been no studies measuring their purported unacceptability in this region. As part of an ongoing project surveying double modal acceptability in three distinct towns of the North (Hawick in the Scottish Borders, Ashington in Northumberland and Larne in Antrim), we designed an acceptability judgment survey viewed as a pilot study and submitted to speakers from Southeast England.

- 22 The acceptability judgment task involved a structured set of 54 stimuli divided into 4 main conditions (2a-d):
- (2a) Nine double modals reported as typical forms in dialects of the north of Britain, based on Smith et al. (2019) and Bour (2014): *will can, would could, might can, might could, must can, used to could, should can, would might, and may should*;
 - (2b) Nine modal periphrastic structures assumed to be semantically equivalent to each double modal and acceptable in Standard English: *will be able, would be able, might be able, maybe could, must be able, used to be able, should be able, would maybe, and maybe should*;
 - (2c) The nine core modals of Standard English occurring twice each as filler stimuli: *will, would, can, could, may, might, shall, should, and must*;
 - (2d) A set of distractors with two sub-types: nine dialect constructions involving morphosyntactic features of Tense, Aspect and Modality (TAM) unattested in the three northern double modal regions based on the Electronic World Atlas of Varieties of English (eWAVE, Kortmann et al. 2020): e.g. *They're finna leave town; I can driving now; I eaten my lunch; He is done gone; We liketa drowned that day*; and nine sentences with deliberately unusual word order or morphosyntactic marking of TAM likely to make them unacceptable, e.g. *We can were pleased to see her; I could never forgot his voice; John may has a second name; Maybe my pain will went away*.
- 23 The first three stimuli conditions were fitted in sample sentences adapted from the literature on double modals and non-standard varieties of English to appear as maximally naturalistic, or likely to come up in daily conversation. The first two stimuli conditions were then counterbalanced across the 18 sentences assigned to them, in order to control for lexical effects in ratings (Hoffmann 2014). This yielded 18 material sets where no combination of a stimulus condition and a sentence occurred more than once. In order to get a sufficient sample of speakers, we set the desired number of subjects to 36, i.e. each material set was to be submitted to two speakers. The survey itself was designed using the software PsychoPy and its online counterpart Pavlovia, which automatically randomized the stimuli whenever the survey was booted. The judgment ratings were measured using a 7-point Likert Scale, one of the most common scales used in acceptability judgments (Sprouse 2011). We indicated that 1 should express a judgment of a sentence as very unnatural and 7 as very natural.
- 24 Regarding the structure of this elicitation task, we see that it is experimental insofar as the stimulus conditions (e.g. double modal or modal periphrasis) are represented as manipulated independent variables and acceptability rates are represented as dependent variables in the case of each session and the collection of sessions (36) of the task. However, as we have argued in previous sections, the results of the survey can only be discussed and interpreted observationally, due to limitations in population

sampling and language variety representation, which do not give enough material to infer any causal link or generalize to a variety.

- 25 We used a pre-screened convenience sampling design through the online recruitment platform Prolific in January 2022. 36 speakers, 18 men and 18 women, were recruited based on the following criteria: they were English monolingual natives aged 25 to 50 years old, born in the East of England (East Anglia, Bedfordshire and Hertfordshire, Essex) or South-East England (Berkshire, Buckinghamshire, and Oxfordshire, Surrey, Sussex, Kent, Hampshire and Isle of Wight), and currently residing in one of these regions. We thus tried to capture as precise a social group as we could to get a sense of how a sample of Southeast English speakers might perceive double modal constructions.
- 26 The results were then analysed using R and visualized using boxplots (Figure 1). We find high rates of internal consistency for each condition using McDonald’s omega statistic ($\Omega > 0.7$, Table 2) and a substantial rate of inter-speaker reliability using Gwet’s gamma statistic ($\gamma > 0.7$).

Figure 1: boxplot of double modal acceptability for 36 Southern English speakers (x = stimulus condition, y = Likert-scale rating)



- 27 Table 2: Omega coefficients of internal consistency for each stimulus condition in the acceptability judgment task.

Condition	Double Modals	Modal periphrases	Modal fillers	TAM distractors
Ω coefficient	0.71	0.73	0.8	0.89

- 28 Figure 1 shows the overall ratings of the stimuli conditions. The red dots with green whiskers represent the means and 95% confidence intervals around the means of each condition. The mean rating of modal periphrases is slightly skewed due to the lesser acceptability of the forms *maybe could* and *maybe should*, which are usually alternatives to double modals in Scottish English and Borders Scots due to an auxiliary-like use of *maybe* (Brown 1991). Similarly, the mean of the TAM distractors is slightly skewed due to the higher acceptability of some distractors which may be somewhat acceptable in non-standard contexts. All of the conditions show a few outliers across the 7-point Likert Scale. The median values however, are 1 for the first and last conditions, and 7 for the second and third conditions. There thus appears to be a clear difference of acceptability, for instance, between double modal constructions, which appear to be almost categorically unacceptable, and corresponding modal periphrases, which are nearly categorically acceptable.
- 29 In order to investigate further if this difference is meaningful in the sample, we use a linear mixed effects regression model (Bross 2019) and measure effect size using Cohen's *d* statistic (Winter 2019). Double modals received a mean rating of 1.5 (SD = 1.1) and modal periphrases a mean rating of 6 (SD = 1.5). The mixed-effects model was constructed in R using the *lme4* package (Bates, Maechler & Bolker 2019) and *lmerTest* (Kuznetsova et al. 2019). The model contained construction type as a fixed effect (i. e., double modals versus modal periphrases). Random intercepts for participants and items were added. We predicted participant's ratings as a function of construction type¹. Modal periphrases were rated much more acceptable compared to double modals (fixed effect intercept estimate: $\beta_0 = 1.5$ (SE = 0.15); fixed effect slope estimate $\beta_1 = 4.5$ (SE = 0.1); $p < 0.001$). The effect size of the difference in acceptability is large, $d = -3.3^2$.
- 30 The results of the acceptability judgment task in our sample shows a significant and large effect of double modal unacceptability. We arrive at these conclusions using an elicitation technique with an experimental structure, manipulating construction type as an independent variable. However, further interpretation of our results must be embedded in an observational approach. We only have a small, conveniently recruited sample of a hypothetical population which we cannot ascertain is representative. Larger samples and repeated runs of this pilot survey would certainly help bolster the discussion, which would be fairly easy to do with the help of a recruitment platform such as Prolific. As of now, we have exploratory evidence that double modals are unacceptable in Southeast regions of England, as opposed to some of the judgment rates reported by Smith et al. (2019) in the Scottish Borders. Depending on whether we consider acceptability judgments as reflections of grammatical knowledge or social conventional norms – another thorny issue examined notably by Haspelmath (2020) – we can then speculate on how meaningful these relationships of grammatical acceptability are across regional varieties. For instance, our long-term objective is to recruit samples with the exact same survey from the three northern regions where double modals have been attested (the Scottish Borders, Northumberland, and Northeast Ireland), and compare the results, potentially using a mixed model there as well. However, great caution will be needed, as the overall study will be observational, not experimental: we will not have inferred a causal relationship between dialect/sociolect and double modal acceptability. Nevertheless, we may uncover meaningful relationships that will allow us to discuss the potential existence of such causal links, improving our understanding of this area of social grammatical variation.

5. Structured elicitation in a sociolinguistic questionnaire: the modal system of Singapore English

- 31 Our second case study investigates the use and attitudes relating to modal and semi-modal verbs in Singapore English, the post-colonial variety of English spoken in the Republic of Singapore. Past studies in literature (e.g. Bao 2010; Ziegeler 2014; Hansen 2018; Loureiro-Porto 2019) have shown that some of its modal verbs are used in different ways compared to British English, its historical ancestor. This has usually been attributed to the influence of substrate and adstrate languages (Bao 2010, 2015) or to cases of contact-induced grammaticalization (Ziegeler 2014, 2017; Loureiro-Porto 2019)³.
- 32 A sociolinguistic questionnaire was designed to explore the influence of some extralinguistic independent variables (i.e. age, ethnicity, and education level) on the production of modal verbs mostly belonging to the domain of necessity and obligation (i.e. *must*, *have to*, *(have) got to*, and *gotta*). Bao (2010) shows that Singapore English makes use of *must* more frequently with non-epistemic meanings, as in (3), unlike other English varieties where newer and more grammaticalized epistemic meanings (4) tend to replace older and less grammaticalized non-epistemic meanings (Collins 2005).
- (3) Sir I agree that uh we **must do** all we can to discourage high and wasteful consumption. We import our water. (ICE-SIN:S1B-053)
- (4) I think the time-table **must** have got mixed up. Maybe one train was the the the the first train was slower and second train was faster you know so somehow or rather word happen. (ICE-SIN:S1A-063)
- 33 Bao argues that this is due to a convergence with Mandarin Chinese, the most spoken adstrate language in Singapore. Its deontic particle *bixū* (必须) (5) has in fact not grammaticalized to epistemic functions. Differently from English, in Mandarin epistemic meanings are expressed with adverbs, such as *biding* (必定) and *yiding* (一定), as shown in example (6), provided by Bao (2010: 1732).

(5) wǒmen **bixū** jiānchí zhēnlǐ
we **must** abide-by truth
'We **must** abide by the truth'

(6) zhè zhǒng cáiliào **yīdìng** jiēshi
this CL [classifier] material **certainly** solid
'This type of material **must** be solid'

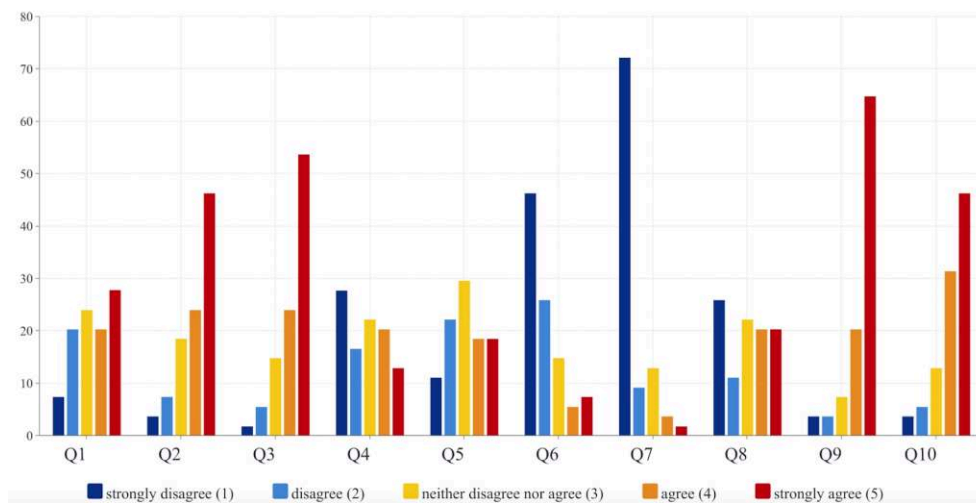
- 34 Although large corpora are useful in retrieving tokens of modal verbs and interpreting their semantics in different contexts, they often lack extralinguistic metadata which would be needed to assess some of the hypotheses mentioned above. For example, the Singaporean subsection of *The International Corpus of English* (ICE-SIN) has been extremely useful in analysing some of the main features of Singapore English. However, it does not provide information on the speakers' background (e.g. age, ethnicity, languages spoken at home, education level, etc.). These social variables would be useful in determining whether a more or less marked feature is shared among different

subgroups of the population or if it is more prominent in one specific group. In a study on modals in Singapore English, corpus approaches lacking this metadata prevent us from assessing whether a specific feature (e.g. frequent non-epistemic uses of *must* in Singapore English) appears to be produced by Chinese-speaking communities alone, or if it is shared with people whose mother tongue is Tamil or Malay. Importantly, the production of the same feature by other groups not sharing the same substrate or adstrate languages would challenge the substratist approach. A sociolinguistic questionnaire provides an important means to gather evidence for or against this crucial research question.

- 35 The structure of the questionnaire is partly based on Hansen's (2018) study of the modal system of necessity in Indian English. The choice of a similar format has the advantage of comparability between Singaporean data and Indian data, collected in 2015 from 53 participants (Hansen 2018: 72). Despite their common colonial past, the varieties of English spoken in India and Singapore today have in fact been placed by Schneider (2007) respectively in Phase 3 (i.e. "nativization") and Phase 4 (i.e. "endonormative stabilization") of his dynamic model of postcolonial Englishes. Indeed, alongside Mandarin, Malay, and Tamil, English has the status of official language in Singapore, being most frequently spoken at home by 48.3% of its resident population, a sharp increase since 2010, when 32.3% chose English as their domestic language⁴.
- 36 In an introductory task of the questionnaire, participants were asked to provide information on their personal background. The rest of the questionnaire was divided into 5 tasks. In Task 1, several statements on Singapore English were shown (e.g. *I often use Singlish when I am talking to other Singaporeans*) and participant agreement rates were collected on a Likert scale ranging from 1 (i.e. strongly disagree) to 5 (i.e. strongly agree). In Task 2, respondents were asked to write down what they would say in a series of fictitious situations (e.g. *You've lost your glasses. You look everywhere in the house except under the bed. What do you say now?*) where the use of modal verbs in a response is likely. Tasks 3 and 4 collected evaluations of a set of propositions containing necessity modals. For example, participants were asked to evaluate (7) and (8) on a scale from 1 to 5 to express whether they found the sentences more or less "friendly", "old", and "authoritative".
- (7) You **must** help me do the washing up later today.
 (8) You **gotta** help me do the washing up later today.
- 37 Finally, in Task 5 participants were shown sets of two or three modal constructions, often coming from the same modal paradigm of necessity (e.g. *must, have to* or *got to*), and were asked which ones they found more natural and acceptable.
- 38 The questionnaire was submitted to a sample of 54 Singaporean Chinese speakers, who spoke English and one or more Chinese varieties among Mandarin, Cantonese, Hokkien, and Teochew. This sample was used to pilot the questionnaire on attitudes and uses of necessity modal verbs in the Singaporean Chinese community. The sample was equally distributed across three age groups (18-29, 30-49, and 50+ years old) with heterogeneous education backgrounds. Speakers were recruited on the National University of Singapore (NUS) campus, in Singaporean food courts, and on social media from February to April 2022. The recruitment of participants in the 50+ category was facilitated by the use of the online platform *Jotform* to circulate a digital version of the questionnaire.

- 39 In the following paragraphs, we focus on the analysis of the results of Tasks 1 and 5. Task 1 allowed us to draw a comparison between our data and Hansen's (2018) data on Indian English⁵, while Task 5 allowed us to observe the acceptability of some necessity modals as well as habitual *will*, according to age.
- 40 In Task 1, participants were asked to rate their agreement with a series of statements related to attitudes towards Singapore English on a 5-point scale. Such linguistic attitudes are indeed difficult to retrieve through corpus analysis and are especially valuable to assess the establishment of a variety of English with a new independent norm. The results are summarised in Figure 2.

Figure 2. Histogram of the results of Task 1 (x = statement number, y = percent of speakers in the sample, colour=scale rating).



- 41 The statements, mainly adapted from Hansen's (2018), were the following:
- Q1: Singapore English is a standard variety of English, such as British or American English.
 - Q2: Singapore English and British English are different.
 - Q3: Speaking Singapore English, I feel part of my community.
 - Q4: As a Singaporean, I try to speak British English.
 - Q5: As a Singaporean, I try to speak Singlish.
 - Q6: As a Singaporean, I try to speak American English.
 - Q7: I do not feel like English is part of my world, as English is not my mother tongue.
 - Q8: British English is more correct than American English.
 - Q9: I try to avoid speaking Singlish when I am talking to non-Singaporeans.
 - Q10: I often use Singlish when I am talking to other Singaporeans.
- 42 Q1, which was designed to assess the acceptability of a new norm-providing variety in Singapore, yielded similar scores in both our and Hansen's studies. The acceptability of a local norm is indeed a typical trait of Schneider's (2007) phase 4, which, according to Mukherjee (2007: 168-170) now applies to the variety of English spoken in India. Hansen (2018: 72-73) finds that more than 60% of the participants of her survey tend to accept Indian English as an independent variety which provides them "a feeling of belonging". In our data, almost 50% of the participants accept or strongly accept Singapore English, whereas almost 25% neither disagree nor agree. The high number of undecided participants may be partly explained as a result of governmental language policies discouraging the use of Colloquial Singapore English, or Singlish, which has been

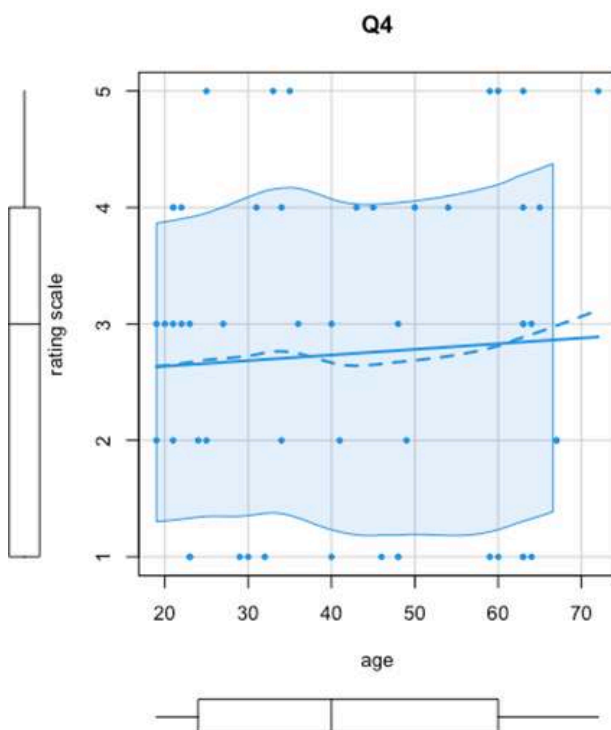
described by Prime Minister Goh as a “corrupted form of English that is not understood by others” (Goh 2000). Wee (2018: 34), quoting Chng (2003), provides two contrasting comments on the status of Singlish coming from two Singaporeans:

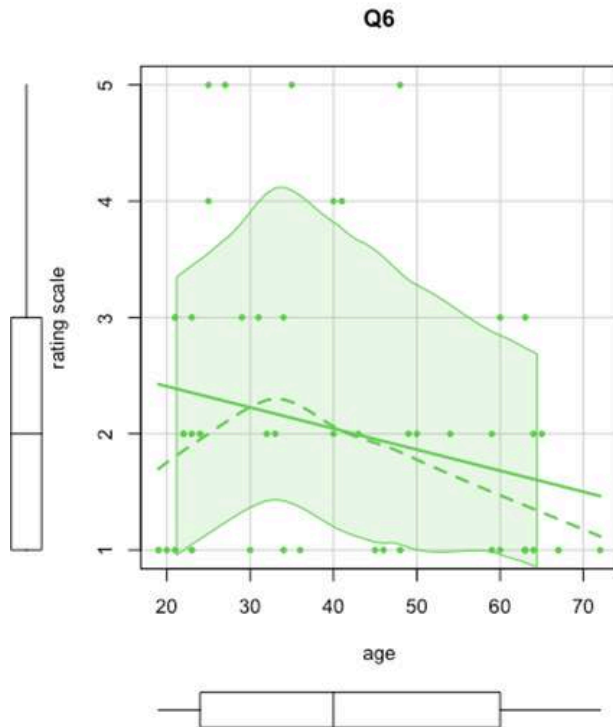
(9) It is indeed worrying that the standard of English used in Singapore has been dwindling steadily... I certainly hope that Singaporeans will embrace the coming years with the common, fervent endeavor to speak and write proper English, as far as possible.

(10) Singlish is a mark of how we have evolved as a nation and should surely have a place in our culture. Embracing Singlish as part of our heritage is not self-deception... but the educated and wise will know when to use Singlish: use it among Singaporeans and close friends. Do not use it at job interviews or when making public announcements.

- 43 Results coming from Q2 and Q3 suggest that more than 70% of the participants perceive Singapore English as a variety that is different from British English. 77% acknowledge that Singapore English makes them feel part of the same community, more than in Indian English where Hansen (2018: 72) found that 61% of her participants agreed or strongly agreed that Indian English gave them a feeling of belonging.
- 44 Our data also suggests a relative exonormative preference of British English (Q4) over American English (AmE) (Q6), even though more than half of the respondents claim that they speak neither British nor American English, in contrast with Hansen’s data, where 66% agreed or strongly agreed that they attempted to speak British English. Interestingly, however, if we take into account the variable of age, we see that younger participants claim that they attempt to speak American English more than older participants, as shown in the scatterplots on the right in Figure 3.

Figure 3. Scatterplots of the scores from Q4 and Q6, x=age, y=rating scale.





- 45 Each dot represents the rating given by each participant, the continuous line stands for the regression line, and the dashed line is the smooth curve. British English appears to be chosen as an exonormative variety slightly more by older participants (cf. the scatterplot on the left). Simple linear regression was used to test if the age of the participants significantly predicts the ratings of Q4 and Q6⁶. Results from Q4 show that the regression does not appear to be significant with $R^2 = 0.003$, $F(1, 52) = 0.1812$, $p = 0.7$. The regression for Q6 gave us the following results: $R^2 = 0.06$, $F(1, 52) = 3.$, $p = 0.068$. Whereas the scatterplots might suggest possible tendencies, our intuitions are not validated by more fine-grained statistical analyses. The availability of larger amounts of data may allow us to determine whether this provisional intuition is validated by significant regressions. We believe that data collected in Task 1, related to the acceptability of a new autochthonous norm or to external norms, is crucial in a study on modality in a postcolonial dialect of English. Interestingly, the production of a more or less grammaticalized modal construction may be the result of an overt preference to external varieties of English. For instance, a phenomenon of “Americanization” (Mair 1997, 1998; Leech 1998) could justify the relatively frequent use of epistemic *gotta*, the phonetically reduced and more grammaticalized counterpart of *have got to*, found in different Singapore English corpora (Basile 2023: 293), as shown in (11).

(11) You **gotta** be kidding me!?!?... You may know the models and technical specs, but do you actually know their system well? (*The Flowerpod Corpus*, posted by genekoh on November 16, 2007)

- 46 Tagliamonte and D’Arcy (2007) found epistemic *gotta* to be more popular in Northern American dialects than in British English. It is therefore useful to observe the attitudes towards different English varieties among Singaporeans of different age groups in order to better describe the synchronic production of different modal constructions.

47 Task 5 focused on the acceptability of some modal constructions. Participants were asked to choose the modal construction they found more natural among two or three choices. Here we discuss the results from two of the items of the task:

Q27. On Wednesdays I (**go/will go**) to the gym and then I (**have/will have**) my Spanish class. It's my favourite day of the week.

Q28. I really (**need to/have to/must**) go. My mum is waiting for me.

48 Q27 aimed to explore whether the participants found the present (e.g. *I go*) or the construction *will* + verb base (e.g. *I will go*) to be more natural to convey the habitual meaning. As mentioned earlier, Ziegeler (2014) finds that habitual *will* is frequent in Singapore English, as opposed to British English, where it is less attested today. We explored whether there was a difference in preference of habitual *will* according to the age group. The data shows that 50% of the 50+ participants found habitual *will* more natural, more often than the other groups, where more than 90% chose the present simple (cf. Figure 5). If validated by larger samples of data, the lower naturalness rates of this construction among younger participants could suggest a gradual decline of *will* used with habitual meanings. This would confirm that *will* in Singapore English is following the same grammaticalization path as British English where habitual uses of *will* typical of Old and Middle English times, became rarer, grammaticalizing to probability and prediction meanings (Ziegeler 2014: 128).

49 In Q28 participants had the choice between a modal verb of necessity (i.e. *must*) and two semi-modals of necessity (i.e. *have to* or *need to*), to be used in the domain of “participant internal necessity” (van der Auwera and Plungian 1998: 81-82). Figure 6 shows that *must* never exceeds 25% of preference in any age group. Instead, *need to* seems to increase in popularity among younger participants if compared with older participants, next to the decline of popularity of *have to*.

Figure 4. Histogram of the results of Q27 (x=construction type choice, y=percent of participants, colour=age groups (n=18 per group)).

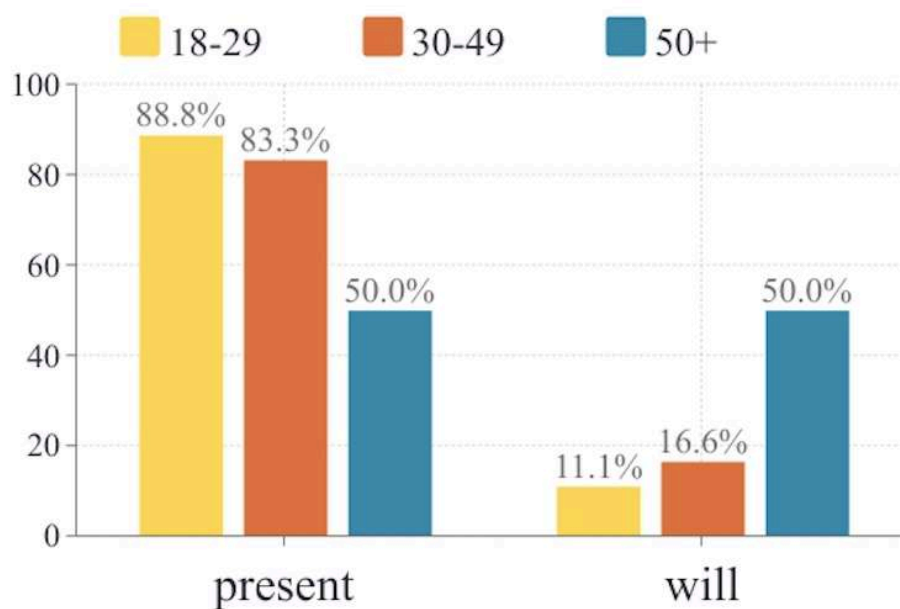
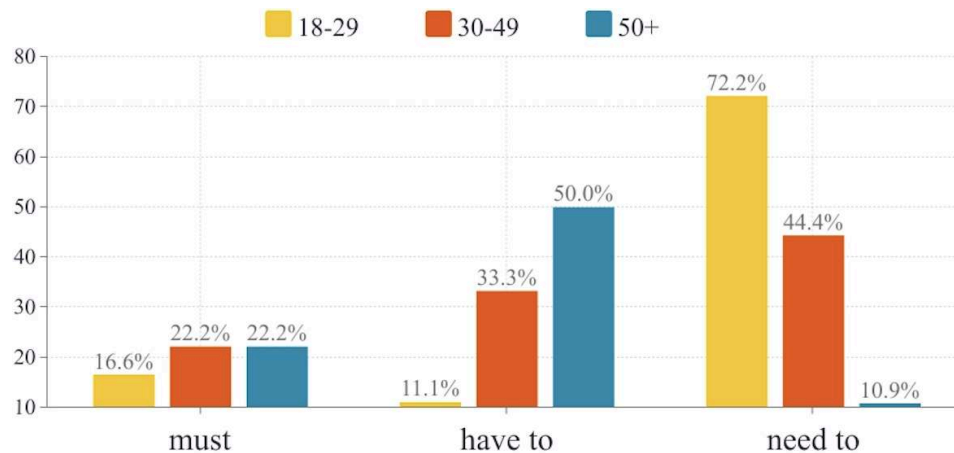


Figure 5. Histogram of the results of Q28 (x=construction type choice, y=percent of participants, colour=age groups (n=18 per group)).



- 50 These results provide exploratory evidence for the hypothesis of the decline in the use of root modals in Kachru's (1986, 1992) inner and outer circle varieties of English, discussed, among others, by Leech (2003, 2013), Collins (2009), Rossouw and van Rooy (2012), Mair (2015), Hansen (2017), and Loureiro-Porto (2019). Here, semi-modal *need to* appears to be replacing the use of *must*. Furthermore, the preference of *need to* over *have to* can be taken as provisional evidence for the direct transfer from Mandarin *xūyào*, a verb which shares semantic and syntactic similarities with both lexical *need* and semi-modal *need to* (Hansen 2018: 218). These results are further supported by analyses on Singaporean data coming from four corpora compiled from the 1990s to 2021, which have yielded similar results. Diachronically, occurrences of *need to* have increased sharply (more than doubling their frequency in 30 years) parallel to the decline of the forms *must*, *have to* and *have got to* (p.c. 2021).
- 51 The results discussed in this section are considered with caution, the sample size preventing claims of clear correlations between social variables and attitudinal/linguistic outcomes. Moreover, data collected from the two other major ethnic groups in Singapore (i.e. Indian and Malay communities) is necessary for a comparison with the Singaporean Chinese data. This is indeed the long-term objective of the questionnaire for our ongoing research. Finally, the sample considered in this pilot study cannot be taken to represent a homogeneous English-speaking Singaporean Chinese population and sociolect, due to inherent issues of representativeness and operationalisation discussed in Section 2 of this paper. Nonetheless, we argue that sociolinguistic questionnaires of this sort are valuable observational techniques to discuss the plausibility of causal relationships between language variety, sociolinguistic attitudes and grammatical variation, especially if they are triangulated with corpus-based quantitative analyses.

6. Conclusion

- 52 In this paper, we aimed to discuss the epistemological implications of viewing varieties of English as sets of social practices, especially in the field of elicitation-based, grammar-focused sociolinguistics and dialectology. We proposed that a clear view of the methodological concepts involved in elicitation studies is necessary for future

advances in those disciplines, taking two case studies to illustrate our claims. Our terminological approach has led us to a call for caution, as well as an acceptance of the inherent limitations that an object of study such as language variety imposes on the range of means available to the researcher, constraining those means which belong to experimentation frameworks. These two aspects correspond to two of the values put forward by Sönning & Werner (2021) for a potential paradigm shift in linguistics, namely “caution” and “acceptance of uncertainty”. Beyond these two values, which relate to limitations, we hope to have especially underlined a third, more optimistic one also cited by Sönning & Werner, namely “cumulative thinking”. As we have argued, scientific inquiry cannot rely exclusively on experimentation, and is just as dependent on observation, a long-term approach to describing relationships that matter in the real world including the social practice of language, one study at a time. We believe that elicitation-based approaches to social grammatical variation will only continue to prove their worth by explicitly endorsing this epistemology, alongside the development of increasingly sophisticated methodologies.

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NOTES

1. The full model translates to: $\text{lmer}(\text{rating} \sim \text{construction} + (1|\text{participant}) + (1|\text{item}), \text{data}=\text{data})$.
2. (formula: $\text{cohen.d}(\text{rating} \sim \text{construction}, \text{data}=\text{data})$, $d = -3.3$).
3. Building on Heine & Kuteva's (2003, 2005) theories on "contact-induced grammaticalization" and "replica grammaticalization", Ziegeler (2014) explains the frequent habitual use of *will* in Singapore English as a case of "replica grammaticalization as recapitulation." According to this account, *will* in Singapore English would be replicating an older stage of the lexifier, i.e. English, typical of Old English times (c. 800-1100 CE).
4. "Census of Population 2020 Statistical Release 1." Department of Statistics, Ministry of Trade & Industry, Republic of Singapore. Available at: <https://www.singstat.gov.sg/-/media/files/publications/cop2020/sr1/keyindicators.ashx>. Last accessed: 7th April 2022.
5. Whereas Hansen's findings would support some hypotheses, e.g. that Indian English has entered endonormative stabilization, she calls for caution due to limitations in her data. The majority of her participants were students, academics or people from higher education levels, and the average age was 24 years old (Hansen 2018: 119).
6. The formula that has been used is $\text{lmer}(\text{rating} \sim \text{age}, \text{data}=\text{data})$.

ABSTRACTS

In a recent discussion on the replication crisis and its consequences for linguistics, Grieve (2021) convincingly argues that the complexity of language as a social phenomenon inherently limits the capacity for linguists to investigate variables such as language variety or dialect using experimental approaches as opposed to observational approaches. Grieve points out a sociological propensity for some linguists to aim for experimentation as the optimal and superior empirical approach to studying language, while underestimating the value of observational

approaches, an undesirable fallacy for the future of the field. In this paper, we build upon his remarks and discuss some of their implications for future studies in English sociolinguistics and dialectology, especially those focusing on grammatical variation with elicitation-based methodologies. We argue that understanding elicitation as a concept distinct from the dichotomy of observation versus experimentation enables us to avoid the pitfall of equating structured data elicitation with experimentation. We also argue that research in these strands of language variation should continue to embrace the ultimately observational nature of its results and use experimental terminology with great care, as part of a scientific approach to uncovering relationships that matter in the real world such as variation in the social practice of language, rather than describing causal links directly. We illustrate our points with two case studies in English: an exploratory survey of double modal acceptability in Southeast England, and a sociolinguistic questionnaire on the use of necessity modals in Singapore English.

Dans une récente discussion au sujet de la crise de la reproductibilité et ses conséquences pour la linguistique, Grieve (2021) soutient de manière convaincante que la complexité du langage en tant que phénomène social limite par essence la capacité des linguistes à étudier des variables telles que la variété de langue ou le dialecte à l'aide d'approches expérimentales par opposition à des approches observationnelles. Grieve évoque une propension sociologique de certains linguistes à désirer l'expérimentation, vue comme l'approche empirique optimale et supérieure pour étudier le langage. Cette propension s'accompagne d'une dévaluation fallacieuse de l'approche observationnelle, et résulte en un état de faits indésirable pour l'avenir de la discipline. Dans cet article, nous nous appuyons sur les remarques de Grieve et étudions certaines de leurs conséquences pour de futures études en sociolinguistique et dialectologie anglaises, portant en particulier sur la variation grammaticale à l'aide de méthodologies d'élicitation. Nous soutenons que la délimitation de l'élicitation comme concept distinct de la dichotomie observation/expérimentation permet d'éviter une confusion entre élicitation structurée de données et expérimentation. Nous soutenons aussi que la recherche dans ces branches de la sociolinguistique gagnerait à continuer d'ouvertement accepter la nature fondamentalement observationnelle de ses résultats, et à utiliser la terminologie expérimentale avec grande précaution, dans le cadre d'une approche scientifique qui met au jour des rapports qui font substance dans le monde tels que la variation dans la pratique sociale du langage, plutôt que la description directe de rapports causaux. Nous illustrons nos arguments à l'aide de deux études de cas en anglais : une étude exploratoire de jugements d'acceptabilité des doubles modaux dans le sud-est de l'Angleterre, ainsi qu'un questionnaire sociolinguistique sur l'usage des modaux de nécessité en anglais de Singapour.

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