Author1* and Author2

From Sociolinguistic Perception to Strategic Action in the Study of Social Meaning

1 Introduction

This paper presents a new experimental paradigm for studying social meaning. The term *social meaning* is used in many different academic disciplines, often with many different meanings. In sociolinguistics, social meaning is often characterized as "the constellation of traits that linguistic forms convey about the social identity of their users - eg. their demographics, personality and ideological orientation" (Beltrama, 2020, 1) or "the stances, personal characteristics, and personas indexed through the deployment of linguistic forms in interaction" (Podesva, 2011, 234). Definitions such as these are based on the observation that listeners draw inferences about the properties of speakers depending on the language that they use. These inferences have been investigated experimentally in social psychology since the 1960s, in particular, through using an experimental paradigm known as the *Matched Guise Technique* (MGT) (Lambert et al., 1960). In a MGT experiment, participants listen to samples of recorded speech or read short texts (called *guises*) that are designed to match as much as possible, differing only in the linguistic phenomenon studied. Each participant is exposed to only one of the guises, and after hearing it, their beliefs and attitudes towards the speaker are assessed, usually via questionnaire (see Kircher, 2015; Schleef, 2022, for overviews of this methodology). The original uses of the MGT were to study language attitudes, i.e. listeners' inferences about the properties of speakers of different languages; however, in the past 15 years, the MGT has become widely used within variationist sociolinguistics to study subtle differences in the sociolinguistic perception of alternating linguistic forms, which variationists call *sociolinguistic variants* (see Labov, 1973; Tagliamonte, 2012). For example, Campbell-Kibler (2007) used this paradigm to show that there exist consistent associations between the variants *–ing* and *–in'* (i.e. alternative ways of pronouncing the final consonant in the English word *work**ing***) and the properties that listeners attribute to speakers who use these variants. Participants in Campbell-Kibler's MGT study rated speakers as significantly more educated

and more articulate in their *-ing* guises (i.e. when they said "workING" than in their *–in'* guises (i.e. when they said "workIN").

Although the linguistic phenomena studied using the MGT have evolved over the past 60 years, there has not been such a great evolution in the ways in which language attitudes/sociolinguistic perception are assessed. Although some studies have asked participants to freely provide adjectives describing the speakers in the different guises (Campbell-Kibler, 2005), the heart of the output of a MGT study remains the scales upon which participants rate the speakers that they hear. As Kircher (2015) describes (p.200), "the rating scales in matched guise experiments tend to be interval, Likert-like scales with opposite extremes of certain traits at either end. Usually, half of these traits pertain to the status dimension and the other half of the traits pertain to the solidarity dimension." This paper argues in favor of studying the effects of sociolinguistic variants on strategic action, in addition to using Likert scales to study social meaning. More technically, we present an enrichment of the MGT, which substitutes the response scales for strategic choices in a video game, and we compare these results to those obtained in a more classic version of the paradigm based on scales.

We argue that moving to studying social meaning experimentally through looking at its effects on participants' actions in addition to ratings has three main benefits. First, the classic paradigm is generally considered an indirect measure of sociolinguistic perception (because participants rate speakers, not linguistic perceptions). This makes it a somewhat more implicit measure of social evaluation than, say, questionnaires or open interviews. Its quick replicability with multiple items and across numerous participants also allows for a reliable measure of overall "*group biases*" (Lambert, 1967). However, the task still relies on participants being able to verbally and explicitly describe their perceptions in terms of particular linguistic predicates. This assumes that the mental representations triggered in sociolinguistic perception tasks happen to be well described by the particular predicates chosen for the scales, and, furthermore, that the participants are all interpreting these predicates in the same way. While the success of the MGT suggests that at least some interpretations correspond well to English predicates like *competent* or *laidback*, there is no evidence that all of them can be consciously accessed in the same way. Second, we argue that our new paradigm is more interactive than the classic paradigm. Indeed, as Kircher (2015) says (p. 205), a "criticism that has been brought forward against the matched-guise technique is that language attitudes that are elicited from "interactively non-involved" participants are necessarily different from those of individuals actually participating in a particular speech exchange (Ryan et al., 1987, p. 1076)." Our strategic action paradigm places participants directly into an interaction, and our comparative study presented below will show that Ryan et al. (1987) are correct to worry about a gap between the sociolinguistic

perception results (based on ratings) and the strategic action results (based on video games). In particular, we find that the strategic action results are more **subtle**: they show more fine-grained social meaning distinctions than the ratings. Finally, from a theoretical perspective, we argue that the strategic action paradigm can more directly express the relationship between language and the social order, in a more implicit approach that allows "linking the value and meaning of language to the value and meaning of the rest of the resources that count in society " (Heller and McElhinny, 2017, xvi). Although the MGT allows researchers to get a glimpse of the kinds of ideologically important properties that participants associate with users of different linguistic variants, a paradigm based on strategic action is better equipped to study the social, political and economic outcomes for the users of those linguistic variants, and therefore to contribute to understanding phenomena like linguistic discrimination (see Baugh (2017); Craft et al. (2020); Wright (2023)) and commodification (see Duchêne and Heller (2012), among many others).

2 The video game study

2.1 Overall design and materials

In order to study social meaning through strategic action, we developed a textual role playing video game called *L'installation à Paris* 'Moving to Paris' in the Ren'Py engine (Rothamel, 2022). In this game, a small open-world was created around the city of Paris, where the player has to complete a series of quests (i.e. tasks) in order to stabilize their precarious situation: in the introduction to the game, it is explained that the player is freshly arrived in the city and sleeping on a cousin's sofa. Then the player has to complete four tasks relevant to the storyline: getting an apartment, opening a bank account, getting the attention of a server in a French café, or visiting a museum. At first the tasks cannot be completed, and the player has to explore some more and meet two non-playable characters (NPCs). Then, the player must request help from one of these NPCs in order to complete each task. To avoid biasing participants with non-linguistic clues (clothing style, etc.), no visual indication of what the NPCs look like is ever presented to the player, and only through the text can their personality, upbringing and social status be imagined. One NPC was named *Monsieur Martin*, who we designed to be an old-fashioned Parisian bourgeois, and who makes statements expressing **status** values to the player: valuing family and tradition (see Woolard (1985); Thévenot and Boltanski (1991) among many others). The other was named *Anthony*, who we designed to incarnate a down-to-earth middle-aged Parisian, and who makes

statements valuing **solidarity** to the player. Solidarity can be instantiated in concrete social interactions in many ways. Here, we took inspiration from Woolard (1985), who argues that the solidarity dimension is very important for understanding sociolinguistic dynamics in situations of political conflict surrounding territory. We therefore had Anthony demonstrate solidarity values by resenting the gentrification of North Eastern Paris and the recent displacement of less wealthy people from his neighborhood.

As mentioned in the introduction, we consider our paradigm to be an enrichment of the MGT, since the relevant stimuli are set up with a matched-guise structure. A complete flowchart summarizes the course of a game in Figure 1.

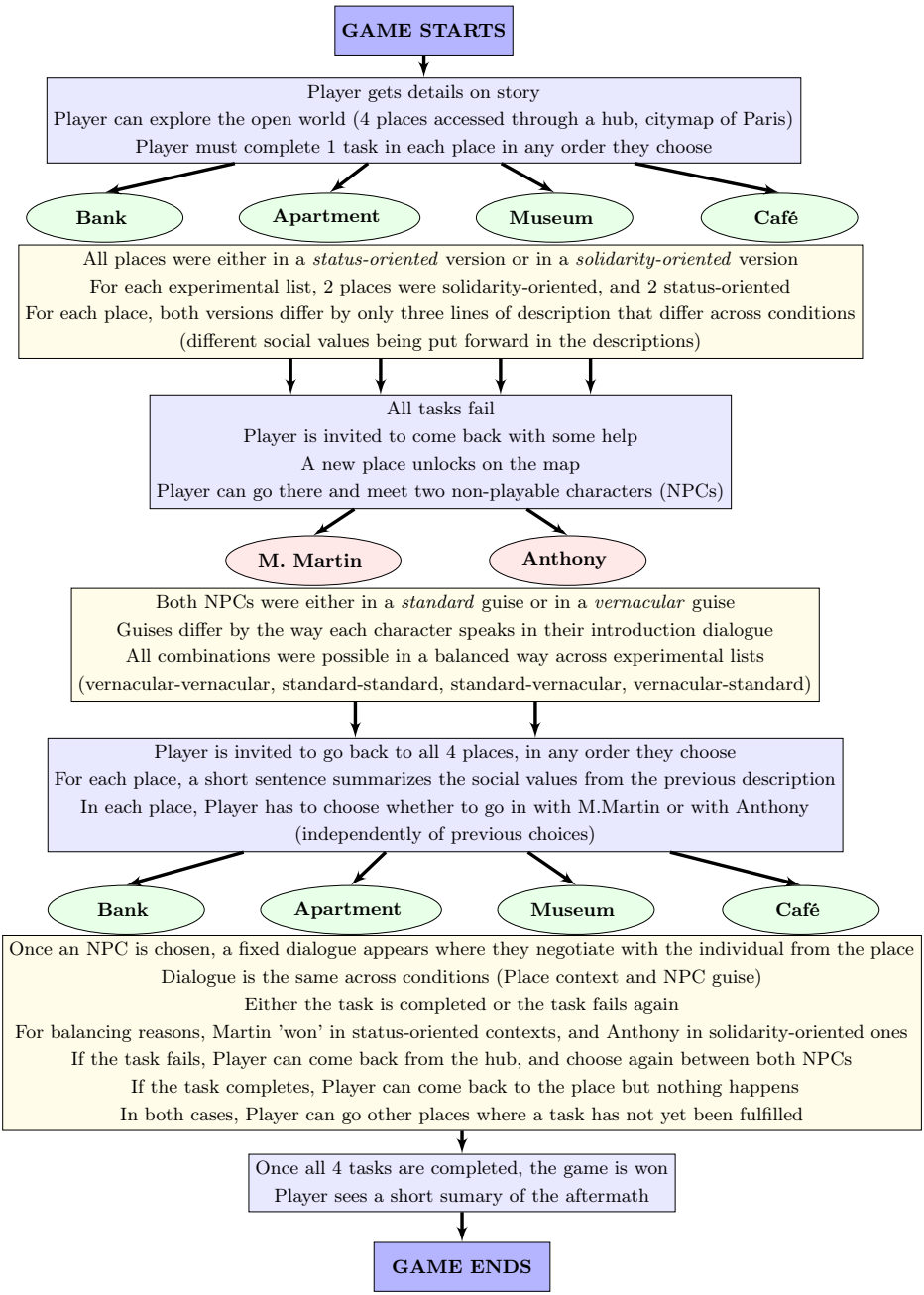

Fig. 1: Flowchart of the game

The first manipulated experimental condition behind the game was the linguistic guise of each NPC, which was introduced during the presentation dialogue of each of them, in the new location that unlocks after all tasks have failed once. In this introductory dialogue, both NPC either used a **'standard' or 'prestige' variety of French (standard guise)** (see Bourdieu and Boltanski (1975)) or a **'vernacular' or 'covert prestige' variety (vernacular guise)** (see Trudgill (1972)). This dialogue was the only moment in the game where the NPC guises were accessible. The linguistic points of variation between the two guises are shown in Table 1. All of these variables have been independently shown to be socially meaningful by researchers studying French (Coveney, 2005; Ashby, 1977; Thiberge, 2020). Figure 2 exemplifies how the two guises differed, at the exact same time in the game, for different participants (here, during the introduction dialogue for Anthony).

Sociolinguistic variable	Guise	Example
Negative *ne* omission	Standard	Je **ne** le vois pas.
	Vernacular	Je le vois pas.
	Translation	*I don't see him.*
Subject doubling	Standard	Pierre est là.
	Vernacular	Pierre **il** est là.
	Translation	*Pierre is here.*
Verb inversion in Wh-questions	Standard	Combien **vendent**-ils ça?
	Vernacular	Combien ils **vendent** ça?
	Translation	*How much do they sell this for?*
2nd person *tu/vous*	Standard	Voici **votre** journal.
	Vernacular	Voici ton journal.
	Translation	*Here is your paper.*

Tab. 1: Points of linguistic variation in standard/vernacular guises

Fig. 2: Screenshots of the same dialogue from Anthony (vernacular guise on top, standard guise on bottom), translation: *I don't get this world anymore.*

The second manipulated experimental condition was the social context in which each task has to be completed, in the sense that all four places where the player had some quest pending also had two versions where different social values were put forward in the description. For instance, one player saw a **status-oriented** version of the bank where they had to open an account, where financial stability and personal responsibility were explicitly expressed by a clerk, while another player saw a **solidarity-oriented** version of this location, where the clerk expresses solidarity and the need to take into account the very different personal situations of the clients. The 'context' condition was laid out during the first time the player explored each location and before they failed each task, with three sentences alternating across conditions that described the social values important for each location. A one-sentence reminder of the social attributes for each context was presented to the player when they came back to the location with one of the NPCs to complete

the task. Each player saw two *status-oriented* and two *solidarity-oriented* contexts. Figure 3 illustrates how the different versions of a location (here, bank) appeared to different participants.

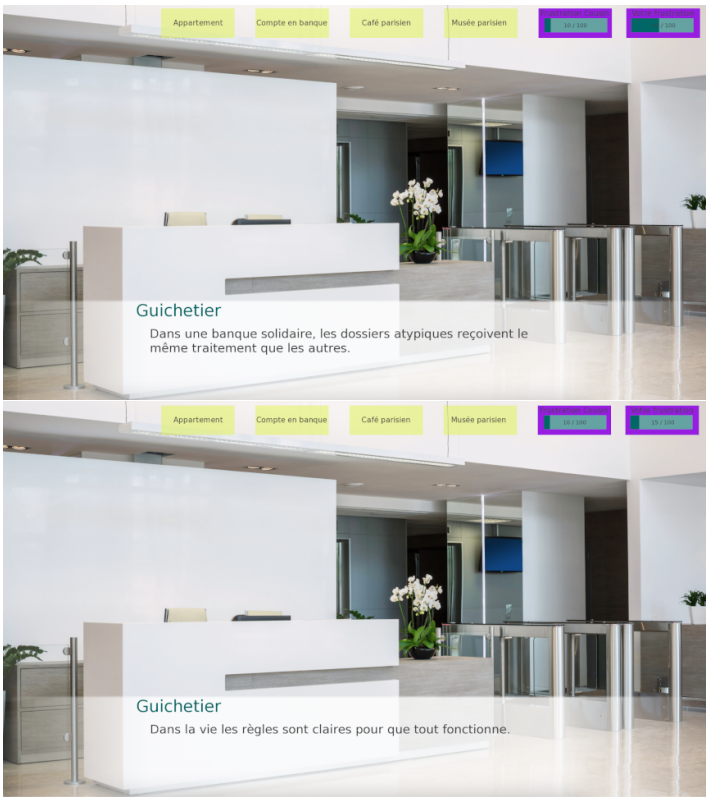

Fig. 3: Two versions of the bank (solidarity-oriented, top: *In a solidarity bank, atypical cases are treated the same as any other.* vs. status-oriented, bottom: *In life the rules are clear so that everything can run smoothly.*)

Due to the length of the game it is not possible to provide an exhaustive presentation of all the text shown to players during a game.[1] Partici-

1 The game itself can be played at the following link: https://www.socialmeaning.eu/exp/gm/gm88/index.html. This link provides access to a fully randomized version of the game, meaning that all lists (combination of guises for the NPCs, standard or vernacular, and versions of the 4 places, solidarity-oriented

pants had access to only one version of the game in a latin square design, which allows for a good counterbalancing of experimental conditions (NPC guises + versions of the locations). The textual descriptions of all four places and the guises of both NPCs can be found in the Supplementary Material at https://osf.io/am5ur/?view_only=5eddc7a47f6740f78e1e11e74048196d.

2.2 Variables and predictions

As stated above, our independent variables are the guises of the NPCs the main character met during the game (either standard or vernacular, for both Martin and Anthony, with all four combinations possible), and either status-oriented or solidarity-oriented versions of each location (two of each across the 4 locations for each game, in a counterbalanced way across lists and age groups of participants). Our dependent variable is the choice made by participants when they were prompted to select one of the two helping NPCs in each situation (recoded 0=Anthony, 1=Martin).

In what follows we only analyze the first choice made by participants in the first situation. This amounts to 96 data points, which makes the dataset quite small. Because of this, our statistical analyses will use Bayesian logistic regression models rather than frequentist regression models, because Bayesian modeling is better suited for smaller datasets (Sorensen et al., 2016). Analyzing only the first choice excludes potential training effects from one quest to the next and does not take into account whether the choice allowed the quest to be completed or not. Training effects could for example mean that some participants may have worked out that two choices had to be 'Martin' and two choices 'Anthony' to win the game, or that they may have figured out the context-sensitive nature of their choices after figuring out that e.g. Martin was better suited to status-oriented contexts through trial and error. Given that we did not constrain where participants made their first choice, and that they could fail multiple times in a row if they chose the same NPC in the same location over and over, players' progression throughout the complete course of a game appeared too difficult to model.

Our predictions are based on the existing sociolinguistics literature, particularly classic works such as Bourdieu and Boltanski (1975); Woolard (1985); Labov (1973); Trudgill (1972) and more recent experiments like Campbell-Kibler (2007); Podesva et al. (2015); Beltrama et al. (2023):

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or status-oriented) can be accessed through the link (randomized at the beginning of a game).

- **Prediction 1:** Monsieur Martin expresses status values and should be preferred to Anthony in contexts valuing status. This prediction is derived from the assumption that players will be (mostly) rational and choose the NPC that will give them the best chance to win the encounter. On the other part, the solidarity-oriented NPC Anthony should be preferred in contexts valuing solidarity. However, we predict that the linguistic guises could perturb this pattern.
- **Prediction 2:** In particular, when players see Monsieur Martin in his vernacular guise, we hypothesize that players' preference for Martin in status contexts should decrease, compared to when he appears in his standard guise. Likewise, players' preferences for Martin in solidarity contexts should be even more pronounced when Martin appears in his vernacular linguistic guise compared to his standard guise.
- **Prediction 3:** Conversely, we predict that Anthony should be even more preferred in solidarity contexts when he appears in a vernacular guise, compared to when he appears in a standard guise. Likewise, we predict he will be more preferred in his standard guise in status-oriented contexts than in his vernacular guise.

2.3 Participants and procedure

96 participants were recruited on Prolific (http://prolific.com) (all self-declared L1 adult speakers of French living in France, 48 over 30 years old, 48 under 30). Participants were asked to play the game, i.e. complete quests that were prompted to them, but nothing was made explicit about the experimental variables we manipulated and about the different conditions. Players were told they could explore the micro-world we created through a clickable map of Paris and skipping through text descriptions and dialogues via the space bar of their keyboard only. They were told that they could go to several locations indicated by stars on the map, and that they would be prompted with text choices from time to time, without any explicit indication as to whether these choices were good or bad, and only when a quest was finished did they see any form of progress. Before the game, it was indicated that players had to complete all main quests for the game to finish.

Participants were asked to complete the game in one go if possible, and completing it typically took them from 12 to 30 minutes, with the occasional outliers (10 minutes – 1hour, generally with pauses in the gameplay). The progression of participants in the mini-world and across quests was tracked automatically in a new text file as soon as they started a game, with timestamps and important choices

being recorded (i.e. did the participant select option1 or option2 at a particular choice point). All this was done anonymously with a unique but unreadable ID attributed to every new game, and in accordance with ethical guidelines.[2] Participants received standard compensation (roughly 5£ for 30mn). Then we went through each text transcript of a game and coded all the meaningful choices participants had made and all relevant data (sociolinguistic profile and experimental conditions).

2.4 Results

All the data was analysed with the R suite version 4.3.2 and RStudio (R Core Team, 2023; Posit team, 2023), within the Bayesian framework (logistic regression modeling, see Supplementary Materials for full specifications and the list of all R packages we used).

2.4.1 General results

As shown in Figure 4 and in line with prediction 1, we find that Martin is chosen more often in status-oriented contexts than in solidarity-oriented contexts. Likewise, Anthony is chosen more frequently in solidarity contexts than he is in status contexts.

2 An IRB number will be added in the non-anonymized version.

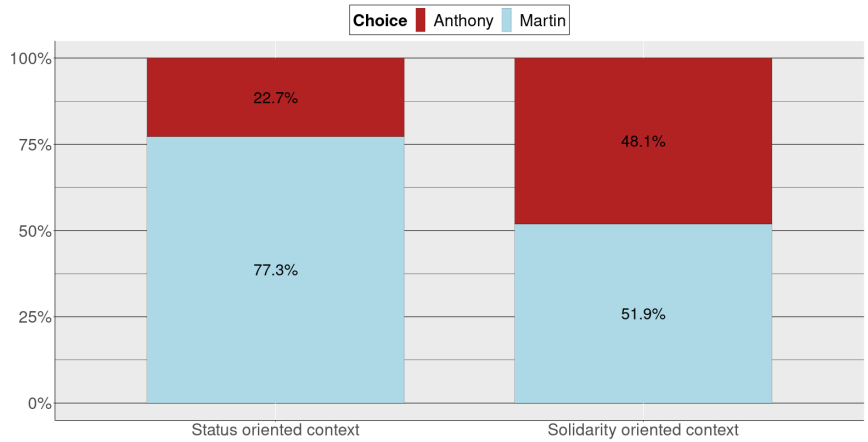

Fig. 4: Choices by context (overall)

This being said, we observe that Martin was still chosen (slightly) more than 50% of the time in solidarity contexts, which is surprising. However, further inspection of the different contexts shows that all status/solidarity contexts do not behave in the same way. For one thing, our results are not equally balanced across the bank, cafe, museum and apartment since we left players the freedom to explore our open world. Players' first choices were most often made in the bank (34/96), then in the café (31/96), then in the museum (20/96), and finally only 11/96 first choices were made in the apartment context. Furthermore, as shown in Figure 5, the bank location, in both its status and solidarity versions, highly favored Martin. This is in contrast to the other locations, where the solidarity version favored Anthony (or there was no preference).

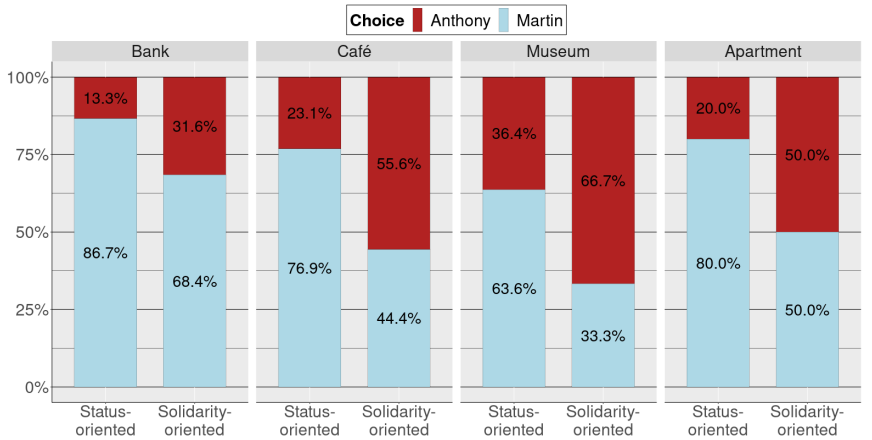

Fig. 5: Choices by location and context

2.4.2 Results - Martin's guises

To analyze how this general pattern was affected by the linguistic guises of both NPCs, we first present how choices for Martin were related to the linguistic guise he appeared in. Figure 6 gives a descriptive overview of these.

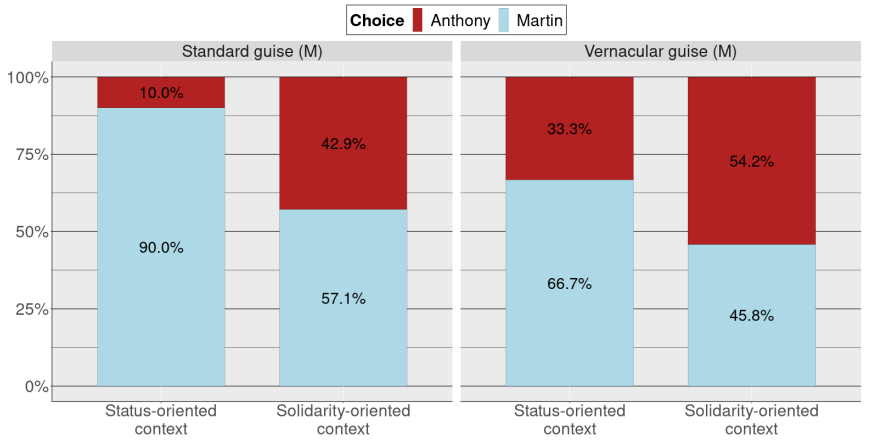

Fig. 6: Choices by context and guise (Martin)

With Bayesian modeling (model mb1.ctx.guiseM), we found several meaningful effects even with the relative scarcity of our data. First, there is robust ($\hat{\beta}$=1.66, 95%CrIs=[0.60;2.86], P(β>0)=1) confirmatory evidence for an overall effect of context: Martin was more chosen in status-oriented contexts overall. Second, there is robust ($\hat{\beta}$=1.24, 95%CrIs=[0.20;2.38], P(β>0)=.99) evidence for an overall effect of guise, with Martin being more chosen in his Standard guise. Third, we also find some ($\hat{\beta}$=1.22, 95%CrIs=[-0.88;3.60], P(β>0)=.86) evidence for an interaction between context and guise. This means that the preference for Martin that we see in status contexts over solidarity contexts is even greater when he appears in his standard guise than when he appears in his vernacular guise. In this way, the effects of the social meanings of the linguistic variants can be observed on the strategic choices another person will make in interaction with them.

It should be noted that these results do not capture the interaction between both NPCs guises, which we discuss below.

2.4.3 Results – Anthony guises

Another way to look at the data is to look at how the choices for Martin were modulated by Anthony's sociolinguistic variants. Figure 7 gives a descriptive overview.

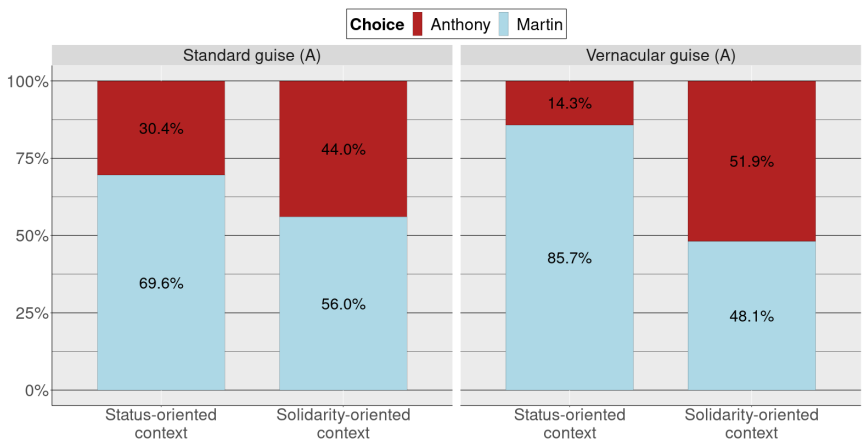

Fig. 7: Choices by context and guise (Anthony)

In another model (mb1.ctx.guiseA) where the dependent variable was still the proportion of Martin choice, we find the same robust ($\hat{\beta}$=1.41, 95%CrIs=[0.44;2.45], P(β>0)=1) confirmatory evidence for an overall effect of context (as found before, Martin was more chosen in status-oriented contexts). We also find robust evidence ($\hat{\beta}$=–1.46, 95%CrIs=[–3.53;0.50], P(β<0)=.93) for an interaction between context and guise in this model. This means that Martin is more highly preferred in status contexts when Anthony is in his vernacular guise than when Anthony is in his standard guise. Put another way, we see that Anthony is chosen more often in solidarity contexts when he is in his vernacular guise, and he is chosen more often in status-oriented contexts when he is in his standard guise. Again, these results do not yet include the possible interaction between NPCs guises.

2.4.4 Results – Interaction between guises

Since all four combinations of guises for NPCs (standard-standard, vernacular-standard, standard-vernacular, vernacular-vernacular), a third model was run (mb1.ctx.guiseB) to account for a possible interaction between the guises and context. This model is more complex and the data is thus more stretched out across conditions: this makes for a more difficult extrapolation over the outputs. This model however gives evidence for all previously found effects (overall influence of Context, of Martin's guise, and of the Context*Guise(Martin) and Context*Guise(Anthony) interactions).

Interestingly, this model also yields robust evidence for an interaction Guise(Martin)*Guise(Anthony) ($\hat{\beta}$=–10.29, 95%CrIs=[–45.52;1.18], P(β<0)=.92), independent of Context, which points to more differences in the behaviour of participants according to Martin's guise, when Anthony was in his standard guise than when he was in his vernacular guise. This would indicate that standard Martin performs better than vernacular Martin against standard Anthony, while against vernacular Anthony both Martins hold pretty well.

Finally, this model also yields robust evidence for a three-way interaction between Context and both NPC guises ($\hat{\beta}$=–27.78, 95%CrIs=[–104.56;-2.84], P(β<0)=1). This points to a difference of the combined influence of NPC guises across contexts. When Martin is in his vernacular guise, there is not much of a difference in pattern between solidarity-oriented contexts and status-oriented contexts: Martin is a bit less chosen when Anthony is under his standard guise than when Anthony is under his vernacular guise. When Martin is in his standard guise however, the pattern is quite different across contexts: in solidarity-oriented contexts, Martin is more chosen when Anthony is under his standard guise, but in status-oriented contexts Martin is comparatively less chosen when Anthony

is under his standard guise (and this is due to the fact that Anthony was never chosen when he was under his vernacular guise and Martin under his standard one).

2.5 Discussion

The results of the video game study show that linguistic variants can affect the strategic choices that participants make, opening up a new way to study their social meanings. Many of our predictions are borne out, and first of all Prediction 1: The non-linguistic social properties conveyed by NPCs affected how they were chosen. Martin is chosen more frequently in status-oriented contexts than in solidarity-oriented contexts, and Anthony is chosen more frequently in solidarity-contexts than in status-oriented contexts. The linguistic guises of both NPCS nuanced these general findings.

Prediction 2 (about Monsieur Martin) was partially borne out: players had an even greater preference for Martin in status-oriented contexts when he appeared in his standard guise. However, he was still chosen more often in status contexts in his vernacular guise, suggesting that, while his language did modulate participants' perceptions of him, using vernacular language over standard language was not sufficient to compensate for the status-oriented content of his speech.

Finally, Prediction 3 (about Anthony) was borne out. Anthony is more preferred in solidarity-oriented contexts when he appears in his vernacular guise than when he appears in his standard guise. Likewise, he is more preferred in his standard guise in status-oriented contexts than in his vernacular guise.

Based on these results, we conclude that studying social meaning through looking at strategic choice, as in our video game, can reveal a wide range of results that are consistent with sociolinguistic theories. We now compare these results with those of a more traditional *Matched Guise Technique* experiment.

3 Matched-Guise experiment

We ran a text-based version of the classic matched-guise paradigm. Soukup (2013) references several different variations of this paradigm (open-guise, verbal guise), but also written tasks. Although this modality is less often used, probably as a consequence of a long tradition of sociophonetic studies, we opted for it to have a closer comparison between with the videogame results (for which the stimuli were written). Some of the studies upon which our predictions are based are also

written MGTs (Beltrama, 2018; Beltrama et al., 2023), and for example Thiberge (2020) conducted several matched-guise experiments on the same sociolinguistic phenomenon (alternating partial interrogative forms in French), with no evidence for a difference in evaluative patterns across modalities.

3.1 Design, materials and participants

We submitted the textual[3] descriptions of the status/solidarity contexts and the dialogues featuring the standard/vernacular NPCs (Monsieur Martin and Anthony) to the explicit judgment of participants. We recruited 48 different self-declared adult L1 speakers of French living in France (24 aged 30 or less, 24 older than 30 y.o.) via the Prolific platfform (https://prolific.co). The experiment took place on a university-hosted instance of the IbexFarm platform (Drummond, 2016).

All these were condensed into one text for each, and we presented them with a latin-square and randomized design. Participants saw only one version of each place and one guise of each NPC, and saw a balanced number of standard-guise vs. vernacular-guise NPCs and of solidarity-oriented vs. status-oriented locations (= 6 items by list, with no fillers). After reading each text, participants had to give their impression on how important they thought the following properties were in the location or for the character: education, tradition, hierarchy, speaking 'good' French (all 4 being **status scales**), solidarity and social justice (both being **solidarity scales**).[4] Participants could provide their answers on 6 corresponding 11-point slider scales (a frequent format in France, from school evaluations to general surveys, from 0: not at all important to 10: very important). We obtained 48*6*6 = 1728 answers in total. Considering the small number of items and the high variability we could expect on such social evaluations, we also opted for analyses with Bayesian models. Since our dependent variables were ratings on interval scales, we opted for cumulative-link models, which are best suited for ordinal data.

3 I.e. getting rid of all the non-linguistic information and gameplay decorum from the final game.

4 The sociolinguistic literature on standardization and normative language has identified a wide number of properties related to the status dimension. There have been far fewer investigations into the solidarity dimension; therefore, we felt less confident including as many solidarity properties as status properties.

3.2 Results

Detailed statistical analyses of the MGT results are provided in the Supplementary Materials (models mb1a.sopre for the NPCs, and mb1b.sopre for the locations). To summarize: Figure 8 provides an overview of the social properties attributed to NPCs in their various guises, on the two kinds of scales we created (solidarity scales on the left panels, status scales on the right panels, mean and distribution of the ratings on the y-axis). On the solidarity scales, only Martin in his vernacular guise seems to yield higher results than all 3 other guises. In other words, the contrast between Anthony's standard/vernacular guises that we observed in the strategic action paradigm was not observed in the MGT. On the status scales, we find a similar pattern, with Anthony showing no distinction between his two guises, although always being rated lower than Martin. Here again, it seems the contrast between the two linguistic guises that we observed in the video game is neutralized in the sociolinguistic perception task. On the other hand, the contrast between Martin's two guises is observed in the MGT: as the sociolinguistics literature and the video game results would predict, Martin is rated higher on the status scales in his standard guise, and higher on the solidarity scales in his vernacular guise. This is captured in the model by the robust evidence for a 3-way interaction between the NPC*SCALES*CONTEXT variables ($\hat{\beta}$=1.54, 95%CrIs=[–0.34;3.49], P(β>0)=0.95) .

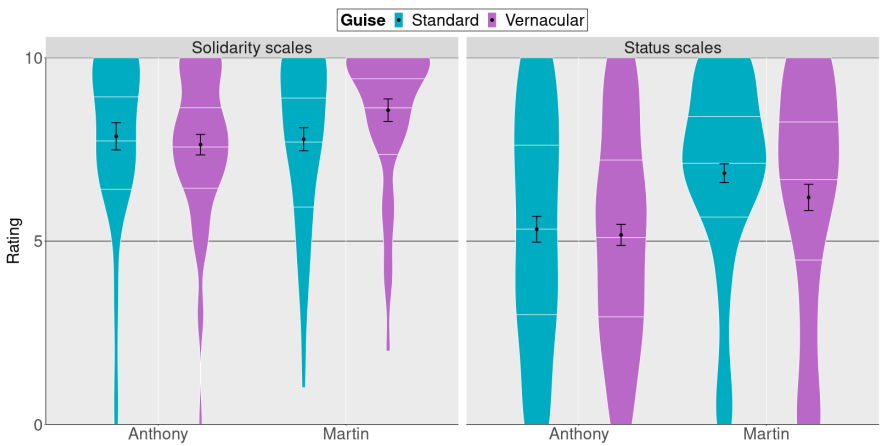

Fig. 8: MGT results for NPCs (black dot: mean, error bars: standard error, white lines within the violins: quartiles)

We find a similar pattern for the contexts: as shown in Figure 9, the status and solidarity versions of each context do, overall, indeed rate higher on the status and solidarity scales, respectively. This being said, we do again see some neutralization for the Café location. Although there is a trend in the expected direction, with status properties being rated as less important in the local cafe compared to its fancy version, we find robust evidence ($\hat{\beta}$=–2.91, 95%CrIs=[–4.76;-1.03], P(β<0)=1) for a 3-way interaction between the LOCATION*SCALES*CONTEXT variables in a model with Museum as the reference location (and solidarity scales and solidarity-oriented contexts as references for the two other variables). This indicates that the shift across scales is less important for the café than it is for the Museum, Bank and apartment locations. Again, the lack of sharp differentiation in the MGT is surprising, because, as Figure 5 shows, the two versions of the café are clearly distinguished in strategic action.

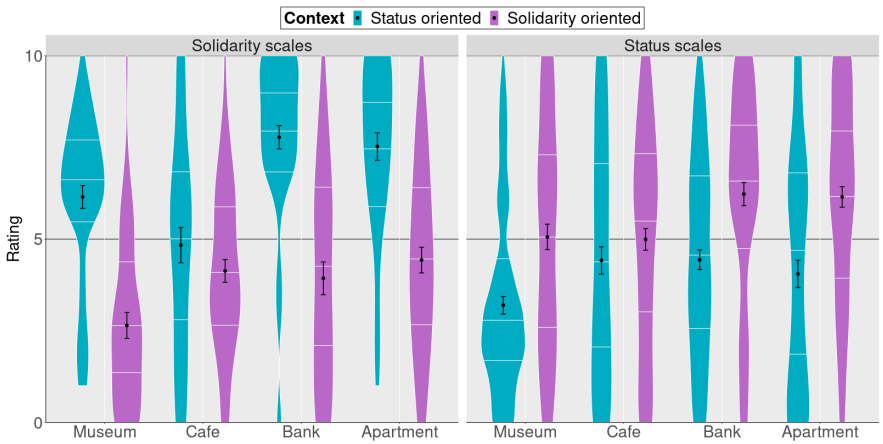

Fig. 9: MGT results for locations (black dot: mean, error bars: standard error, white lines within the violins: quartiles)

4 Discussion and conclusion

We compared the results of two experimental paradigms used to study social meaning : the Matched Guise technique and a paradigm focusing on strategic action, as instantiated in a video game. We compared the language of two characters: M. Martin and Antony; in particular, whether they used linguistic features from the French standard/prestige register (negative *ne*, no subject doubling, questions with

inversion, and the singular *vous* pronoun) or the non-standard/vernacular register (*ne* omission, subject doubling, questions without inversion, and the *tu* pronoun). We predicted that participants in the MGT study should rate both characters as higher on status scales when they appear in their standard guise, while rating them higher on solidarity scales when they appear in their vernacular guise. In parallel, we predicted that participants should be more likely to ask a character for help in the interactive video game in a status-oriented context when the character appears in their standard guise than when they appear in their vernacular guise, and vice versa with solidarity-oriented contexts.

In the results, we find that more of the predictions were borne out in the strategic action study than in the matched-guise study. With the exception of vernacular Martin being chosen in solidarity contexts slightly less than we expected, the predicted patterns are all found in the video game. In the matched-guise, however, some of these patterns are neutralized: for example, the matched-guise results make no distinctions between Anthony's linguistic guises. At first glance, this pattern could be attributed to a "context dilution" effect, of the type observed by, for example, Hilton and Jeong (2019); Pozniak et al. (2023), in which the perception of sociolinguistic variables in a matched-guise experiment is weakened in longer, more detailed contexts, compared to in single sentences. However, we also saw the neutralization in the descriptions of the contexts, which did not vary sociolinguistically. In particular, as shown in Figure 9, there is no evidence that the status-oriented and solidarity-oriented versions of the café are different in the matched-guise results, despite them being clearly different (in the expected direction) in the video game results. This suggests that the neutralizations are most likely a product of the ratings task in the MGT, rather than some property of sociolinguistic perception. In other words, when participants are forced to verbalize their social perceptions about a person or a place, the result appears to be less sensitive than when they are asked to interact with that person and/or in that place. Our results thus justify the concerns of Ryan et al. (1987) about the lack of interactivity in the matched-guise: researchers who use only the MGT may be missing some crucial aspects of the social meanings of the linguistic phenomena they are studying.

In addition to the fact that ratings on Likert scales appear to be blunter instruments for studying social meaning than video games, we also highlight that measuring the social meaning of a linguistic variant through looking at how it changes a participant's strategy in an interactive game can also bring experimental studies in closer contact with sociolinguistic investigations focused on how language affects speakers' material (social, political and economic) conditions. This by no means entails that the matched-guise technique should be abandoned by researchers, particularly given its relative ease of use and its proven track record. Rather, we

would argue that other paradigms, inspired by the MGT and used alongside the MGT, may help shed a different light on subtle phenomena rooted in sociolinguistic variation. The particular scenarios we investigated in our game concerned how language was related to some parts of French administration, which is well-known to be loci of the production and reproduction of social inequalities (see L'Horty and Petit, 2023, for a review). The strategic action paradigm, developed here using video games, is very general, and we believe that it could provide a more realistic yet controlled way to study a wide range of issues related to language and power, across contexts and cultures, in the future.

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