Using video games and strategic action to investigate sociolinguistic variation

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Experimental sociolinguists often assess the relationship between linguistic forms and social characteristics with the Matched-Guise Technique (MGT, [5, 4, 7]), where participants are asked to ascribe different social properties (e.g. age, education, politeness...) to a person on the basis of some linguistic material they produced. Even though this paradigm has provided very useful information concerning subtle differences between sociolinguistic variants, we argue that its explicit nature makes it too 'blunt' of a tool to explore all the strategic ramifications of socially situated language. To support this claim, we compare two experimental tasks: one classical MGT and a new text-based videogame paradigm where participants have to make use of the social information encapsulated within linguistic forms to make informed strategic decisions that have an impact on more general tasks they have to complete. We find some differences appear in the videogame that seem to be neutralized in the matched-guise task.

Exp. 1. 96 adult L1 speakers of French recruited on Prolific played a small open-world video game set in the city of Paris in which they had to complete four tasks to stabilize the precarious situation of their character (open a bank account, rent an apartment, attend an exhibit in a museum, order a coffee). Built in the Ren'Py engine [6], the game mixes text descriptions, which the player goes through by pressing a key on their keyboard, and choices (e.g. which place they want to go to next). The game was designed so that participants failed at every task first, before meeting two non-playable characters (NPCs) they could then call on to help complete the tasks. Each NPC expresses different social values (*M. Martin* values status and *Anthony* values solidarity) and both have two different GUISES depending on experimental conditions, either a *vernacular* or a *standard* guise, where we manipulated some sociolinguistic variants documented for French (Tab. 1, [1, 2, 8]). We also contrasted two CONTEXTS for each of the four locations where participants had to complete tasks, with one version making *solidarity* values salient and one making *status* values salient (Tab. 2). **Results.** We analyzed the first choice participants made to call upon an NPC to complete a task (1=Martin, 0=Anthony), with Bayesian logistic regressions. Outputs of the models yield evidence for an effect of CONTEXT with M.Martin being more chosen in status-oriented locations ($\hat{\beta}$=1.51, 95%CrIs=[0.49;2.65], P(β>0)=1) and of linguistic GUISE with M.Martin more chosen in his *standard* guise whatever the context ($\hat{\beta}$=1.03, 95%CrIs=[0.06;2.11], P(β>0)=.98, Fig. 1), but also for a CONTEXT*GUISE interaction for Anthony with this NPC more chosen in his *standard* guise in *status-oriented* contexts but more chosen in his *vernacular* guise in *solidarity-oriented* contexts ($\hat{\beta}$=–1.40, 95%CrIs=[–3.42;0.48], P(β<0)=.92, Fig. 2).

Exp. 2. 48 different adult L1 speakers of French from Prolific read the textual descriptions of the status/solidarity contexts and the dialogues with the standard/vernacular NPCs from Exp. 1, getting rid of all the non-linguistic information of the full game. The experiment took place on a university-hosted instance of IbexFarm [3]. All descriptions were wrapped into one text each, which we presented with a latin-square and randomized design. Participants indicated how important they thought the following properties were in the location or for the character: education, tradition, hierarchy, speaking 'good' French (*status* scales), solidarity and social justice (*solidarity* scales), on 6 corresponding 11-point slider scales (from 0: not at all important to 10: very important). **Results.** A Bayesian cumulative-link model for the locations yields evidence for an effect of CONTEXT (status-oriented contexts received higher ratings on the status scales and lower ratings on the solidarity scales, and vice-versa for the solidarity-oriented contexts). A similar model run for the NPCs gave a different picture, with some differences between guises for M. Martin, but next to no difference between guises for Anthony on the status scales (Fig. 3), unlike in the video game.

Conclusion. We argue that the differences in the results from the MGT derive from its explicit by-design nature. A strategic action paradigm such as the one we propose might allow for an exploration of a more internalized behaviour, based on the intuitive internalization of the social characteristics of a person based on sociolinguistic cues present in their speech.
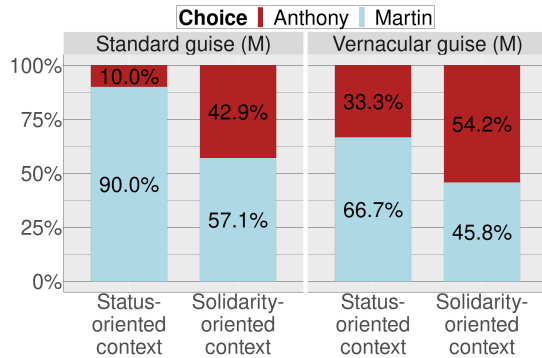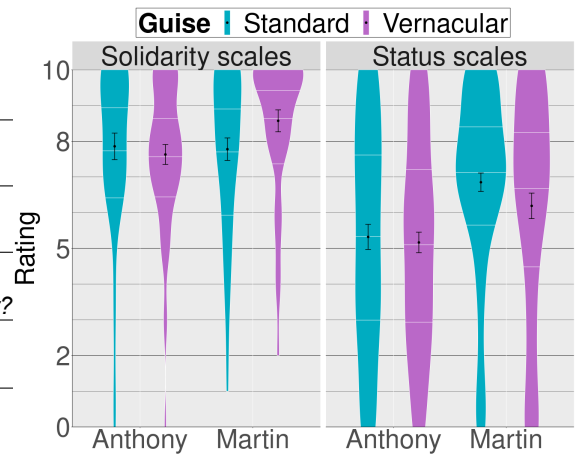
Figure 1: Proportions of choices for M.Martin by context and by M.Martin guise
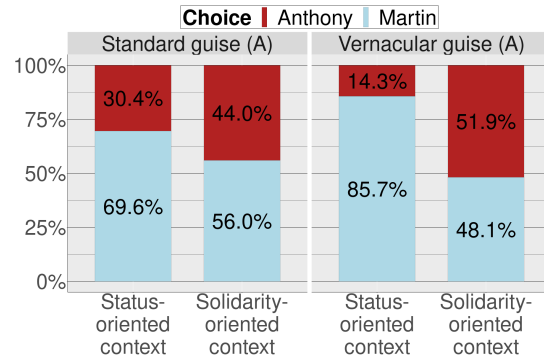
Figure 2: Proportions of choices for M.Martin by context and by Anthony guise

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

Table 1: Points of linguistic variation in standard/vernacular guises

Figure 3: MGT results for the NPCs

Status-oriented	Il va falloir justifier de votre situation sans tarder.
	You'll have to provide a justification for your situation right away.
	Dans la vie les règles sont claires pour que tout fonctionne.
	In life, rules are clear so that everything runs smoothly.
	Dans une banque dynamique, l'argent que vous nous confiez contribue à la société.
	In a dynamic bank, the money you entrust us with contributes to society.
Solidarity-oriented	Nous allons régler votre problème sans tarder.
	We'll find a solution to your issue right away.
	La vie est assez compliquée par ailleurs pour ne pas se surcharger de tracas.
	Life is complex enough to not burden yourself with any more trouble.
	Dans une banque solidaire, les dossiers atypiques reçoivent le même traitement que les autres.
	In a solidarity bank, atypical situations are treated the same as anyone else.

Table 2: Example of two different descriptions of the same location (bank)

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