Reclaiming Slurs: Evidence from Pupillometry

The psychological correlates of slur reclamation. Slurs constitute a subclass of expressive terms that encode hostility toward members of marginalised groups and are therefore likely to trigger emotional responses, including measurable shifts in autonomic activity. Among such indices, pupil dilation has been identified as a reliable marker of emotional arousal during language processing (Mathôt, 2018). Crucially, the affective impact of slurs is not uniform, but varies as a function of speaker identity and usage context. One paradigmatic case is *reclamation*, wherein members of a stigmatised group employ slurs self-referentially to signal solidarity, group identity, or resistance (Anderson, 2018; Jeshion, 2020). While reclaimed uses are often judged to be less offensive and empowering (Galinsky et al., 2013), the extent to which reclamation modulates online emotional processing remains poorly understood. In this study, we employ pupillometry to investigate whether emotional arousal is sensitive to (i) slurring character of the lexical item (slur vs. non-slurring counterpart) and (ii) use of the slurring term (reclamatory vs. derogatory). We specifically test whether reclaimed uses of slurs yield attenuated pupil dilation relative to derogatory uses, and whether such modulation occurs during real-time language comprehension rather than at later interpretive stages.

Experiment. Thirty Italian native speakers (Lemercier et al., 2014, for sample size justification) participated in a pupillometry reading experiment. All participants were university students with no reported history of learning disabilities. Each trial began with a context sentence, presented in full on a single screen in a self-paced manner, followed by a target sentence displayed word-by-word in rapid serial visual presentation (400 ms per word, with 200 ms inter-word blank). The context introduced a fictional dialogue between interlocutors and was designed to manipulate the interpretive cues associated with speaker identity. Experimental stimuli were constructed by crossing two factors: lexical type (slurring vs. non-slurring counterpart) and grammatical person (first vs. third), yielding four conditions – see Table 1. Following Galinsky et al. (2013), first-person uses by in-group speakers (i.e., members of the targeted group) were expected to elicit a *reclamatory* interpretation, whereas we expect that in the absence of clues such as group membership, the standard interpretation of third-person uses is *derogatory*. After reading each target sentence, participants rated its perceived offensiveness on a 7-point Likert scale (1=little offensive, 7=very offensive). Pupil dilation was recorded continuously during the presentation of the target sentence, with a specific focus on the critical word (e.g., *faggot* vs. *gay*), indexing real-time emotional arousal. Sixteen Italian slurs were selected based on prior literature (Cepollaro et al., 2019), each paired with a non-slurring counterpart. Each slur and its corresponding non-slurring label appeared in two short stories that typically differed in the protagonist's gender, except for inherently gender-marked terms (e.g., masculine-only forms such as *faggot*/*gay*), which retained the same gender across both stories. The complete stimulus set was distributed across four lists following a Latin Square design: each list contained 32 targets (8 first-person slurs, 8 third-person slurs, 8 first-person non-slurring labels, and 8 third-person non-slurring labels) and 32 fillers. Each participant was assigned two of these lists, presented as two separate blocks (64 target stimuli in total). The two lists assigned to each participant were selected so that the conditions corresponding to the same story were as distant as possible (e.g., first-person slur and third-person non-slurring label). Dependent measures included pupil size as a proxy for online emotional engagement and offensiveness ratings to assess post-hoc evaluative judgments.

Results. ***Pupil dilation.*** The first 100 ms following target onset were used as a baseline period (Calignano et al., 2024). We used a Generalised Additive Model (GAM) with factors Label (slur/non-slurring counterpart) and Person (first/third), including smooths over time for each condition and random smooths for subjects and items, and trial presentation order was controlled for. For each condition, we computed model predictions over the full-time course and derived contrasts between conditions. These contrasts were averaged within two time windows (100–150 ms; 200 ms–end) (see Figure 1b), from which we estimated the coefficient, standard error, z, and p-values. This approach preserves the non-linear structure of the signal and requires fitting the model only once, unlike separate linear models. *Early*

window (100–150 ms): a main effect of Person (first < third, z = −2.17, p = 0.03), with no effects of Label (z = −0.37, p = 0.711) or interaction (z = −0.54, p = 0.586). *Late window (200 ms–end):* effects of Person (z = −3.54, p < 0.001) and Person × Label interaction (z = −2.61, p = 0.009), but no Label effect (z = −0.6, p = 0.547). The Person effect is absent for non-slurring terms (z = −0.66, p = 0.512) and present for slurs (z = −4.35, p < 0.001), indicating that the slur condition drives it[Fig. 1a]. ***Offensiveness****.* Offensiveness ratings were analysed using a cumulative link mixed model (CLMM) with fixed effects of Label, Person, and their interaction. Random intercepts were included for Item, and random slopes and intercepts for Subject. Slurs were rated as significantly more offensive than non-slurring terms (estimate = 4.73, SE = 0.76, z = 6.20, p < .001), and third-person uses were rated as more offensive than first-person ones (estimate = 3.67, SE = 0.42, z = 8.77, p < .001). The interaction was not significant (estimate = 0.16, SE = 0.30, z = 0.54, p = .59), indicating additive effects[Fig. 1b].

Discussion. Pupillometric data revealed a reduction in pupil dilation – a well-established proxy for emotional arousal (Mathôt, 2018) –when slurs were embedded in first-person contexts as opposed to third-person ones. This pattern suggests that morphosyntactic cues, such as grammatical person, can modulate affective responses to slurs during real-time processing. Specifically, self-referential uses, that typically encourage a reclamatory reading, appear to attenuate the autonomic impact of otherwise offensive lexical items. Cognitive effects related to word processing cannot arise before approximately 200 ms after word onset; earlier effects are likely attributable to pre-target anticipatory processes (as confirmed by pre-target blank analysis, not reported here for brevity). Thus, the temporal profile of the pupillary response indicates that listeners are initially driven by face-threatening considerations – reacting more strongly to third-person uses – but subsequently revise their expectations, leading to an online revision, namely, an attenuation of the emotive impact of self-referred (reclaimed) slurs. In the explicit ratings, the absence of a significant interaction between lexical type and grammatical person suggests an additive, rather than integrative, effect at the level of post hoc conscious evaluation. Even if listeners experience self-referred slurs as less offensive, they may refrain from reflecting this in their explicit ratings, as doing so could be perceived as condoning or legitimising the slur. Crucially, this is the first empirical evidence to demonstrate that the emotional response to slurring language is modulated *in real time* by contextual cues – offering novel insight into the temporal dynamics of expressive meaning and the immediacy of reclamation effects during language comprehension.

| Condition	Context Sentence	Target Sentence	Offensiveness Rating
1st Person Non-slurring	Marco is homosexual. After attending an event, he hangs out with other participants at dinner. Suddenly, **Marco** utters	I am gay you know it.	
1st Person Slurring		I am a faggot you know it.	
3rd Person Non-slurring	Marco is homosexual. After attending an event, he hangs out with other participants at dinner. Suddenly, **one participant** utters	Marco is gay you know it.	To what extent do you find what was said offensive? (1–7)
3rd Person Slurring		Marco is a faggot you know it.	

Table 1. Examples of the stimuli.
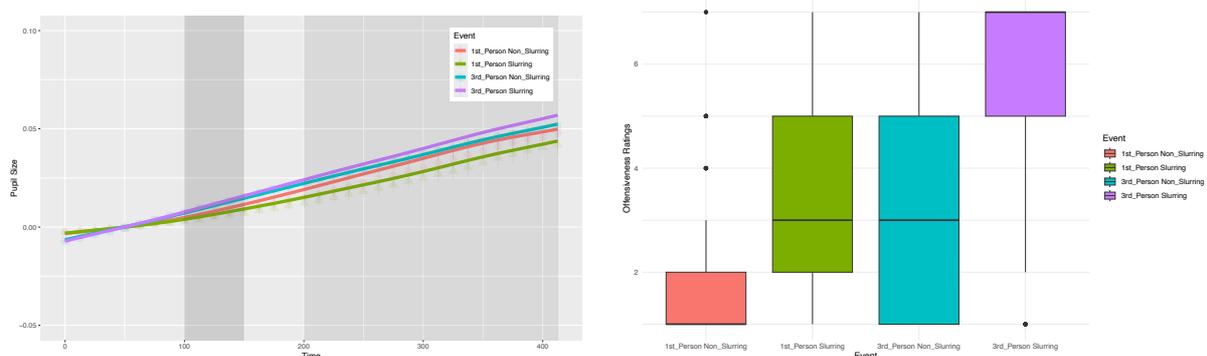
Figure 1a. Pupil size (mm) as a function of Time (ms). **Figure 1b.** Offensiveness ratings across conditions.

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