Neuro-identity mixing impacts linguistic accommodation and regularisation: evidence from autistic and allistic interactions

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Abstract

Linguistic accommodation is the process by which people make their language more like that of their interlocutor, and has been argued to contribute to language change. However, it is unclear to what extent people of different neurotypes accommodate, or how neurotype mixing – which has been shown to reduce communicative success – impacts linguistic accommodation. In this paper, we build on previous research which uses artificial language learning to investigate accommodation as a mechanism for linguistic regularisation (i.e., the reduction of variation in a grammatical system). We test the impact of neurotype mixing on accommodation, with the aim of better understanding whether such mixing impacts processes of language change. Our results suggest that both allistic and autistic participants accommodate less and retain less of the variant when in mixed-neurotype pairs, but that this effect is more pronounced in autistic people. We discuss the importance of these results with respect to the Double Empathy theory of mixed-neurotype communication and language evolution.

Keywords: language evolution; neurodiversity; autism; double empathy problem; artificial language learning; accommodation; regularisation

Introduction

Linguistic accommodation, also referred to as alignment or entrainment, refers to the process by which language users make their language more like that of the person they are interacting with (Giles, Coupland, & Coupland, 1991). This occurs at every level of language, including lexical choice, prosody, and syntax. Accommodation contributes to short-term communicative success and can also contribute to longer-term language change. Fehér, Ritt, and Smith (2019) use artificial language learning experiments to show that accommodation leads to regularisation of a optional linguistic form. Learners trained on a language with an optional grammatical morpheme redundantly expressing singular number will reduce their use of that morpheme in the absence of interaction. However, when they interact with a learner who uses the morpheme obligatorily, they increase their use of the morpheme. The population-level grammar therefore becomes more regular as a result ofaccommodation. Fehér et al. (2019) also found some evidence that this effect persisted post-interaction. Thus, they argue that accommodation is a mechanism by which non-obligatory, and even redundant, patterns may be retained and regularised in a language.

However, accommodation is impacted by both linguistic and extra-linguistic factors. Fehér et al. (2019) found that learners trained on a fully regular language do not accommodate to speakers who use a morpheme optionally (in line with theories of grammaticalisation such as Lehmann, 1985). Extra-linguistically, beliefs about one's interlocuter impact to what extent language users accommodate. Previously studied variables include speaker's beliefs about their interlocuter's perceived competence (Branigan, Pickering, Pearson, McLean, & Brown, 2011; Cai, Sun, & Zhao, 2021), nativeness (Chun, Barrow, & Kaan, 2016; Suffill, Kutasi, Pickering, & Branigan, 2021; Zhang & Nicol, 2022), speaker community (Tobar-Henríquez, Rabagliati, & Branigan, 2021), power (Muir, Joinson, Cotterill, & Dewdney, 2016) and gender (Palomares, Giles, Soliz, & Gallois, 2016).

Crucially, this mechanism of language change is thus linked to the fundamental question of *who* drives change. If accommodation varies by the identity of either the interloctuer or the speaker, then this has implications for which groups contribute more to language change. For instance, women are often considered drivers of language change; if speakers are more inclined to accommodate towards women, changes introduced by women speakers may spread in the population. Notably, there is evidence that beliefs about identity can impact how likely a speaker is to continue using an accommodated variant (Tobar-Henríquez et al., 2021), strengthening the hypothesis that these social factors can contribute to long-term change.

In this paper, we consider a different variable of identity that could impact accommodation: *neurotype*. Specifically, we examine how accommodation might be impacted both by the speaker's neurotype, and their beliefs about their interlocuter's neurotype. A neurotype refers to a particular style of cognitive functioning (Walker, 2021). One neurotype, *neurotypical*, describes an individual whose cognitive functioning conforms to the dominant social standard. On the other hand, there are various *neurodivergent* neurotypes; these individuals' cognitive functioning differs in some substantial way from the 'norm'. Examples of neurodivergent neurotypes include autism, ADHD, plurality (referred to as DID and OSDD in the clinical literature), dyslexia, dyspraxia, epilepsy, and Functional Neurological Disorder (FND). In this paper, we focus on autistic identity.

Autism has traditionally been characterised as a social-communicative 'disorder' under deficit-based and medical approaches (American Psychiatric Association, 2013), whilst

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the neurodiversity paradigm re-frames it as a neurocognitive style, where autistic people differ from the dominant social standard in terms of their cognitive functioning (Walker, 2021). Deficit-based approaches have underpinned much research on accommodation in autistic people; given the relationship between communicative success and accommodation, accommodation in autistic people has been the subject of some examination, with the goal of understanding one causal mechanism behind autistic people's perceived social difficulties (Branigan, Tosi, & Gillespie-Smith, 2016). For instance, it has been suggested that reduced prosodic accommodation may explain why autistic people's speech is perceived as 'different' by allistic people[1] (Kruyt & Beňuš, 2021).

Evidence of accommodation in autistic people is mixed, and appears to be modulated by linguistic level. Accommodation has been shown to be reduced at the prosodic level (Kruyt & Beňuš, 2021; Patel, Cole, Lau, Fragnito, & Losh, 2022; Lehnert-LeHouillier, Terrazas, & Sandoval, 2020), but comparable to allistic people's in the syntactic and semantic domains (Allen, Haywood, Rajendran, & Branigan, 2011; Hopkins, Yuill, & Keller, 2016; Fusaroli, Weed, Rocca, Fein, & Naigles, 2023; Slocombe et al., 2013). There are mixed results with respect to lexical choices (see Slocombe et al., 2013; Branigan et al., 2016; Fusaroli et al., 2023; Hopkins, Yuill, & Branigan, 2017, for evidence that autistic people do lexically accommodate; see Stabile & Eigsti, 2022; Patel et al., 2022 for evidence that autistic people lexically accommodate less than allistic people).

However, much of this work shares two key characteristics. First, it is generally conducted with autistic children (see Patel et al., 2022; Stabile & Eigsti, 2022; Slocombe et al., 2013, for exceptions). We know relatively little about accommodation in autistic adults, or the developmental trajectory of accommodation. Second, and particularly important for this study, is that the work is implicitly conducted in mixed-neurotype interactions, i.e. autistic-allistic, as noted by Kruyt & Beňuš, 2021. By contrast, accommodation studies with allistic adults are conducted in presumably neurotype-matched (i.e. allistic-allistic) pairs. It is theorised that neurotype mixing can create difficulties in interaction, as individuals with different neurotypes come to the table with vastly different cognitive experiences and expectations (known as the 'Double Empathy Problem', Milton, 2012; see also related work on the Bayesian 'Dialectal Misattunement Hypothesis', e.g., Bolis, Balsters, Wenderoth, Becchio, & Schilbach, 2017). Experimental evidence supports this theory, showing that mixed neurotype interactions are less effective at transferring information than matched neurotype interactions(Crompton, Ropar, Evans-Williams, Flynn, & Fletcher-Watson, 2020). Thus, neurotype mixing may be at least a partial explanation for some of the results suggesting that autistic people accommodate less than allistic people, rather than the deficit-based explanations that have been previously employed.

With respect to language change and regularisation, very little work has explicitly examined the role of neurotype (though see Keogh & Lupyan, 2024, Josserand, Allassonnière-Tang, Pellegrino, & Dediu, 2021, and Josserand, Pellegrino, Grosseck, Dediu, & Raviv, 2024, who look at individual differences not construed in terms of neurotypes). Fletcher, Rabaglati, and Culbertson (2024) find that individuals with high levels of autistic traits may be more likely to regularise an optional variant under specific social pressures, but this work does not consider the role of the interlocuter's neurotype.

In this study, we test linguistic accommodation in autistic and allistic individuals in neurotype mixed and matched pairs. We consider how this relates to current theories of autism such as the Double Empathy Problem, and what this suggests about the possibilities of autistic-introduced or facilitated language change. We examine accommodation in autistic adults in an online setting, and predict that autistic participants will be just as likely to accommodate to autistic partners as allistic participants are to accommodate to allistic partners. However, crucially, we predict that neurotype mixed pairs will behave differently: people of both neurotypes may accommodate *less* to people whose reported neurotype does not match their own, or *more* to those whose neurotype does match their own (note that we do not strongly *a priori* favour a divergent or convergent account in this regard, and both may be at play). We also test whether neurotype-mixing impacts the lasting effects of accommodation. We predict that in mixed-neurotype pairs, changes introduced by accommodation are less likely to be retained after interaction.

Methodology

Participants

243 participants completed the full study and were recruited via Prolific[2]. Participants were required to indicate their consent by button press. Participants were self-reported native speakers of English, 18 years or older.

Participants were allocated to their group (autistic or allistic) based on two measures: Autism Quotient 10 (AQ-10) (Allison, Auyeung, & Baron-Cohen, 2012) scores and self-report of autistic identity. The AQ-10 is a short self-report measure of autistic traits. Participants in the autistic group all reported a diagnosis or identification as autistic and scored AQ-10 ≥ 6 (the cut-off score for referral for diagnosis on the National Health Service (NHS) in the UK (NICE, 2021)). The allistic group did not report a diagnosis or did not identify as autistic, and scored AQ-10 ≤ 3. We note that for both groups, we did *not* ask about any other neurodivergent status; thus, our allistic participants were potentially neurodivergent in other ways, and our autistic participants may have been multiply-neurodivergent.

For both groups, we initially recruited from an existing pool of participants from an earlier study on a different topic, using already gathered AQ-10 scores and autistic status to

[1] Allistic is a neologism that refers to non-autistic people.

[2] This study was granted ethical approval by the University of Edinburgh PPLS Ethics Committee (reference number 267-2223/2)

determine who to invite. However, not all eligible participants participated in this study, and some were excluded per the criteria outlined below. As a result, we conducted further pre-screening in a separate study[3] which measured reported autistic status and the AQ-10. Participants who met the criteria outlined above for each group were then invited to complete the main study. A total of 423 participants completed the pre-screening study.

Materials

The stimuli consisted of a simple artificial language (6 nouns, 1 verb, a plural marker and a singular marker) and accompanying pictures (showing each noun by itself or in a pair, either moving or not). The vocabulary and images were the same as Fehér et al. (2019), with the exception of the removal of 1 verb from the set to reduce the length of the study. The language itself was intended to be semantically transparent to aid learning, e.g., a pig is labelled 'oinko', and the verb for bounce is 'boingla'. There were a total of 12 distinct scenarios (6 animals x 1 verb x 2 numbers). The language was ordered V(erb)-S(ubject)-m(arker)

Throughout training, participants were shown the plural marker on 100% of applicable trials, meaning that their input for the plural marker was categorical. Meanwhile, the singular marker was only present on 33% of applicable trials, meaning that their input was variable.

Procedure

The first phase of the study was **noun training** (see Figure 1). In this phase, participants are shown the noun and its accompanying picture, and then asked to select the word that corresponds with the picture. Participants were given feedback on whether they had correctly selected the right noun (6 trials, 1 per noun, randomly ordered by participant).

Participants then completed **noun testing** in which they were asked to select, from a set of buttons with all noun labels, the appropriate label for a given picture. Participants were again given feedback on whether they had correctly selected the right noun (6 trials, 1 per noun, randomly ordered by participant).

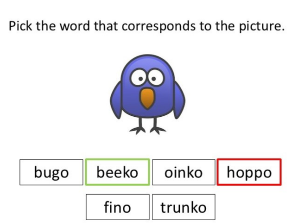


Figure 1: Example of a noun training trial.

Participants then entered the **sentence training** phase. First, they were exposed to a sentence (see Figure 2). Then,

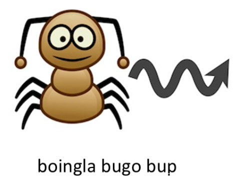


Figure 2: Example of the first half of a sentence training trial (exposure).

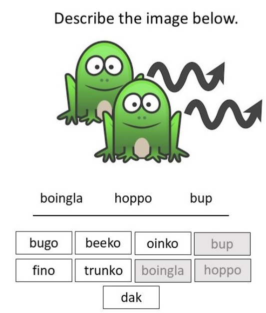


Figure 3: Example of a sentence testing trial.

they were asked to re-create the sentence that they just saw by button press (see Figure 3 for a similar type of trial). They were shown sentences in the artificial language in six blocks of 12 sentences (for a total of 72 sentences) with their accompanying pictures; the order of the sentences within each block was randomised for each participant. In each block of trials, participants were shown 6 plural scenarios, each marked with a plural marker. The other 6 scenarios were singular, 4 of which were unmarked, and 2 of which were marked. This resulted in 100% exposure to the plural marker, and only 33% exposure to the singular marker, throughout training. The 6 blocks were balanced such that no particular noun was associated more strongly than any other with being marked in the singular.

The next phase was **recall test one** (see Figure 3). Participants were shown all 12 possible scenarios. For each, they were asked to select words in order to create a sentence that described the given picture.

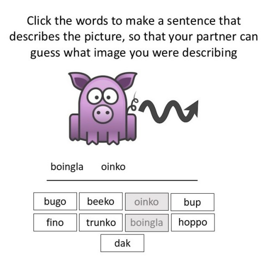
Next, participants were told that they would be matched with another participant in the study in order to play a short game with them using the language. In fact, this 'partner' was a pre-programmed agent. Participants were asked to give a brief description of themselves (excluding any identifying information), and were then given a brief description of their partner. This **partner description** formed the key manipulation of the study, which was to examine whether accommodation levels differed based on whether participants were interacting with someone who matched their neurotype or not.

The description provided mirrored the guidance given to participants for creating their own description (which was to

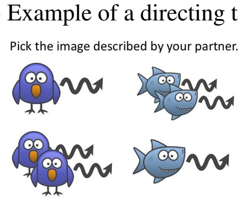
[3] This study was granted ethical approval by the University of Edinburgh PPLS Ethics Committee (reference number 398-2223/1)

provide two hobbies and one thing that is important to them). First, two hobbies were described ('I like to cook and listen to music'; 'I like to go running and watch movies'), followed by either disclosure of autism status ('One thing that is important to me is that I am autistic') or no neurotype disclosure ('One thing that is important to me is my pets'). The pair of hobbies was chosen randomly per participant, whilst the disclosure was controlled to form the four conditions: NT-AUT (allistic participants told the partner is autistic); NT-NT (allistic participants not given a neurotype disclosure); AUT-AUT (autistic participants told the partner is autistic; and AUT-NT (autistic participants not given a neurotype disclosure). Thus, there were two conditions in which neurotype was matched, and two in which neurotype was mixed.

Participants then began the **director-matcher** phase (see Figure 4), in which they and their 'partner' took turns in a director-matcher game. The participant first acted as director. They were shown a picture and asked to click words to make a sentence describing it. They were told that their partner would then attempt to pick the correct picture from their description. The participant was given feedback as to whether their partner was able to do this successfully (i.e., whether the sentence provided was correct). Then, the participant acted as matcher. They were shown a the sentence generated by their 'partner', and were asked to select the image that corresponds to it from a set of 4 images. They were given feedback on whether they selected the correct image.



(a) Example of a directing trial.



(b) Example of a matching trial.

Figure 4: Examples of director-matcher trials.

Crucially, during the **director-matcher** phase, the pre-programmed partner produced 100% plural **and** singular marking, in contrast with the input from the training phases. Accommodation is indicated by an increase in participants' use of the singular marker compared to the first recall test. There were two blocks of director-matcher trials, with each block consisting of 12 trials.

After the director-matcher phase, participants undertook **recall test two**, which was identical to the first recall test.

Exclusion Criteria

We excluded participants whose performance indicated insufficient learning of the novel language, specifically those with an error rate of $\geq 20\%$ on the noun test, used the plural $< 90\%$ of the time in the first recall test, or whose productions in the first recall test were ill-formed (i.e. missing a verb or a noun) $\geq 20\%$ of the time. We excluded any remaining trials which were not well-formed from the overall analysis. After exclusions, 160 participants were included (40 participants in NT-NT match, 40 in AUT-AUT match, 40 in AUT-NT mix and 41 in NT-AUT).

Results

Analyses were conducted using Stan and brms (Bürkner, 2017, 2018) to fit a Bayesian linear regression model with a Bernoulli likelihood and a logit function. Before analysing the data, we conducted prior predictive checks. We determined that weakly regularising priors generated plausible data.

We used repeated contrasts for the phase variable. This type of contrast allows us to test differences in the means between adjacent levels, reflecting the chronological order of the phases. Here, the levels of the phase variable are referred to as Phase (2–1) (the difference between phase 1, the first recall test, and phase 2, the director-matcher phase) and Phase (3–2) (the difference between phase 2, the director-matcher phase, and phase 3, the second recall test). The variables neurotype (allistic -1, autistic +1) and condition (matched -1, mixed +1) were sum-coded. The model contained random intercepts and random slopes for phase within each subject, allowing each subject to have their own baseline level of singular marker usage, and for the impact of phase on the use of singular marker usage to differ across participants. The model was specified as Singular Marker $\sim$ Phase * Neurotype * Condition + (Phase|Subject), including two-way interactions between phase and neurotype/condition and the three-way interaction between phase, neuroype, and condition. The model converged, with all Rhats = 1.00. Posterior predictive checks indicated a good model fit to the data. The model's posteriors are summarised in Table 1.

The model's Intercept refers to the grand mean, indicating the overall log-odds of using the singular marker. The model shows uncertainty about the direction of the estimate for the Intercept, with the 95% Credible Interval spanning [-0.37, 0.93], reflecting the changing use of the singular marker throughout the experiment. It is therefore more informative to consider the posterior estimates for the changes between phases. For Phase (2–1), the model is confident that there is a large increase in the use of the singular marker, with a positive posterior mean (2.99) (95% CrI: [2.48, 3.54]). This indicates that accommodation occurs: the likelihood of using the singular marker increases in the director-matcher phase. On the other hand, the model is confident that there is a reduction in singular marker use for Phase (3–2), with the posterior mean estimated at -0.75 (95% CrI: [-1.33, -0.15]). This indicates

Parameter	Posterior Mean	95% CrI (Lower)	95% CrI (Upper)
Intercept	0.30	-0.37	0.93
Phase (2–1)	2.99	2.48	3.54
Phase (3–2)	-0.75	-1.33	-0.15
Autistic	-0.86	-1.53	-0.21
Mixed	-0.74	-1.41	-0.11
Phase (2–1):Autistic	0.41	-0.13	0.92
Phase (3–2):Autistic	-0.70	-1.36	-0.11
Phase (2–1):Mixed	-0.49	-1.01	0.02
Phase (3–2):Mixed	-0.65	-1.27	-0.08
Mixed:Autistic	-0.57	-1.20	0.10
Phase (2–1):Autistic:Mixed	-0.52	-1.04	-0.02
Phase (3–2):Autistic:Mixed	-0.41	-1.02	0.17

Table 1: Posterior means and 95% Credible Intervals for the fixed effects in log-odds space

that, after interaction, people use less singular marking, reflecting Fehér et al. (2019)'s finding that changes introduced by accommodation do reduce after interaction. Nonetheless, by taking the sum of the posterior estimates for the two phase steps (2.24), we can estimate that the use of the singular marker is still higher in the third phase than it was in the first phase, indicating some lasting impact of accommodation. This could contribute to linguistic regularisation over time, particularly with repeated interactions.

With respect to neurotype, first, we wish to emphasise that any differences found between neurotypes are not interpreted as deficits on the autistic side, but rather as reflections of varied cognitive strategies and social expectations. The model confidently estimates that autistic people use the singular marker less, overall, with a posterior mean of -0.86 [95% CrI: -1.53, -0.21]. Visualising the conditional effects of neurotype across the three phases indicates that this is primarily driven by a reduced baseline of singular marker usage in phase 1 by the autistic participants. With respect to condition, the model also confidently estimates a negative posterior mean (-0.74) [CrI: -1.41, -0.11], indicating that in the mixed condition, participants were less likely to use the singular marker.

Turning to two-way interactions, the posterior estimate for the interaction between the difference between Phase (2–1) and autistic identity is positive (0.41) [95% CrI: -0.13, 0.92] however the model displays uncertainty with the 95% Credible Interval including 0, indicating that the model finds it plausible that there could also be a negative effect. The trend suggests that autistic people may accommodate *more*, but the model is not fully confident in this effect. For the interaction between Phase (3–2) and being autistic, the model is confident in a negative effect (-0.70) [95% CrI: -1.36, -0.11], indicating that autistic people are less likely to continue using the singular marker after interaction.

For the interactions between phase and condition, the model estimates that there is a likely negative effect of mixing on singular marker usage on Phase (2-1) (-0.49), though a small amount of the probability mass is positive, indicating some uncertainty [95% CrI: -1.01, 0.02]. The model is more confident in a negative effect for the interaction between Phase (3–2) and mixed pairs, with a posterior mean of -0.65 and Credible Intervals only spanning negative values [95% CrI: -1.27, -0.08]. For the final two-way interaction, the model suggests a possible negative effect of the interaction between the mixed condition and autistic neurotype (-0.58), such that autistic participants in the mixed condition are less likely to use the singular marker in the second recall test, but there is some uncertainty as the Credible Intervals include 0 [95% CrI: -1.20, 0.10].

The model predicts a negative effect of the three-way interaction between Phase (2–1), being autistic, and the mixed condition, with a posterior estimate of -0.52 [95% CrI: -1.04, -0.02]. Thus, the model predicts that autistic people in mixed pairs are less likely to accommodate. Further, it also suggests a negative effect of the interaction between Phase (3–2), being autistic, and the mixed condition with a posterior estimate of -0.41, though it is much less certain about this estimate [95% CrI: -1.02, 0.17]. This suggests that the impact of mixing is larger in the autistic group in retention as well as accommodation, but the model is less confident in the effect in retention.

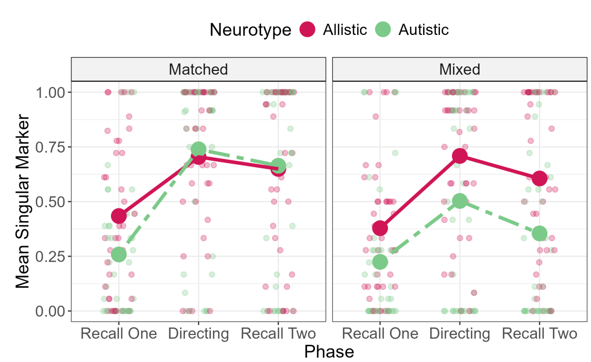


Figure 5: Mean of singular marker use for autistic and allistic participants in Experiment 1 across all matching/mixing conditions.

Discussion

Previous literature suggests that one mechanism of language change is accommodation, but that accommodation is impacted both by linguistic features and by social variables such as gender identity. Accommodation is therefore one avenue for investigating the key question of *who* drives language change. In this study, we consider individuals of different neurotypes as potential drivers of change. We tested the relationship between accommodation, regularisation, and neurotype mixing and matching.

We used Fehér et al. (2019)'s methodology, which involved teaching participants a miniature artificial language with an optional grammatical morpheme for singular nouns, and tested whether they accommodate to a partner who uses that morpheme categorically. Both allistic and autistic participants interacted with a partner that they believed either did or not not patch their neurotype. Our results replicate the general finding of Fehér et al. (2019) that participants who were trained on a variable singular marker accommodate towards a partner who uses that marker categorically. Additionally, we found that whilst there is a decrease in the use of the singular marker after interaction, it remains higher than it was before the interaction, pointing towards longer-lasting effects of accommodation on language change.

Turning to our predictions with respect to neurotype and neurotype mixing, our first hypothesis was that both autistic and allistic participants would accommodate in neurotype-matched pairs. Previous literature has provided conflicting results regarding accommodation by autistic people, with some studies finding that autistic people accommodate substantially less than allistic people. However, recent theories of autistic communicative success suggest that communicative differences in autistic people are the result of two-sided difficulties in mixed neurotype interactions. Our statistical model suggests that autistic people may in fact accommodate *more* than allistic participants, though there is some uncertainty around the effect. If they do accommodate more, this could be related to the fact that our model predicts autistic people use less of the optional marker before interaction than allistic participants. Thus, autistic people have to use relatively more singular marking compared to their baseline to reach the same levels as allistic people in the accommodation phase. The finding that autistic participants were more likely to reduce variation was unexpected; Fletcher et al. (2024) found that autistic people regularise to the same extent as allistic people in the absence of any interacting social pressure. To summarise, however, our main result here is that autistic are as, or possibly more likely than allistic participants to accommodate when their conversational partner has disclosed a matching neurotype.

Our second hypothesis was that in neurotype-*mixed* pairs, participants of both neurotypes would accommodate less than they do in neurotype-matched pairs, and longer-term retention of an accommodated variant would be reduced. Our model predicts a negative effect of mixing in the director-matcher phase, congruent with our hypothesis that neurotype mixing reduces accommodation, though with some uncertainty around this effect. The negative effect of mixing in the second recall test, however, was much more certain. This suggests that, even though mixed neurotype pairs accommodate in interaction – possibly to a lesser degree than in matched pairs – the products of that accommodation may be less likely to be retained on a longer time-scale.

Notably, the negative impact of mixing appears to be stronger in the autistic than the allistic group, particularly in the initial accommodation phase. This suggests that the results of at least some previous studies showing that reduced accommodation by autistic people could be driven by neurotype-mixing. However, it is contrary to our prediction that autistic and allistic participants would be equally affected by neurotype mixing, as would be expected under an account based purely on the Double Empathy Problem (Milton, 2012).

Whilst it is possible that autistic people are more sensitive to neurotype mixing in this context, methodological limitations may contribute to the disparity between the two groups. For the autistic group in mixed conditions, no specific neurotype (e.g., allistic) was declared; on the other hand, for the allistic group in mixed conditions, a specific neurotype (autistic) was declared. Conversely, for matched conditions, it was the autistic group who saw an explicit declaration of neurotype, and the allistic group for whom it was implicit. This leads to two possibilities. First, the negative effect of mixing in autistic people may be driven by a stronger positive effect of matching. As discussed above, since autistic people begin at a lower baseline of singular marking, they have to alter their linguistic behaviour more (relatively speaking) than allistic people to reach the same level of accommodation. There may be more incentive to do this when there is an explicit neurotype match, and autistic people are known to often prefer autistic-autistic interactions than interactions with allistic people (see Watts et al., 2024, for a recent review). Second, it is possible that the introduction of an explicit autistic identity altered how allistic participants behaved. Previous research has indicated that allistic people react more favourably to autistic people when they are aware of diagnostic status than when they are not, and that wrongly labelling allistic people as autistic increases ratings, whilst correctly labelling them as non-autistic does not (Sasson & Morrison, 2019). Thus, the difference between autistic and allistic participants in mixed interactions may be less evident in more naturalistic settings where diagnostic status is not explicitly outlined. We leave this as an important issue for future research.

Finally, we note that our results are limited by our recruitment method. Autistic participants on Prolific only represent a subsection of the autistic community, and given the variability inherent to autism, these results may not generalise across the population. For instance, our participants are likely to be verbal (or at least are able to read and write English), not be intellectually disabled, and to require less day-to-day support.

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