

Variation and usage preferences

The case of first-person plural in Brazilian Portuguese

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Introduction

Why are structures that are **rare** and perceived as **less than fully acceptable** consistently attested?

A **case study: agreement variation** with the pronoun *a gente* ('we') in Brazilian Portuguese (BP)

Our questions:

- ▶ How do we account for the range of possible structures? → **grammar**
- ▶ How can we predict the usage preferences among them? → **theory of register**
- ▶ How can we embed **register-knowledge** in a **formal theory of grammar**?



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Agreement variation

In BP, there are **two pronominal forms** that express 1.PL 'we':

- (1) a. *nós*
b. *a gente*

(Vianna & Lopes 2012: 98, Borges 2004: 129, Mattos 2013: 108, Lopes 2004: 69, Rubio & Gonçalves 2012: 1016, Seara 2000: 181, Mendonça 2012: 4, Zilles 2002: 302)

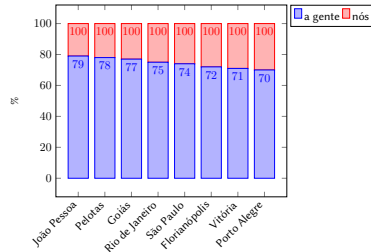


Fig. 1: *a gente* vs. *nós* in BP varieties

A gente has **same meaning** as the standard form *nós*, but different **usage preferences** with respect to **agreement**



Agreement preferences

Verbal agreement: *a gente* typically controls **3.SC verbal targets**.

Local anaphoric agreement: *a gente* is typically used with the 3P proclitic *se* as a target, as opposed to the dedicated 1.PL clitic *nos*.

- (2) **A gente**₁ { **se**₁ / ? **nos**₁ } { **viu** / ? **vimos** } na TV.
A GENTE REFL.3 CL. 1.PL saw.3.SC saw. 1.PL on-the TV
'We₁ saw ourselves₁ on TV.'

Agreement between *a gente* and the overtly 1.PL forms is sometimes claimed to be **ungrammatical**. (Menuzzi 2000; Costa & Figueiredo Silva 2006; Reuland 2011; Marcotulio et al. 2013; Nunes 2020)



Rare patterns

In spite of being **rare**, examples of *a gente* with 1.PL exponents are reported.

Verbal agreement: 1.PL exponents are 6%-18% of the attested targets.

(Naro et al. 1999; Rubio & Gonçalves 2012; Marcotulio et al. 2013; Mendes & Oushiro 2015)

- (3) **A gente** queremos coerência, pô!
A GENTE want.1.PL coherence, EXCL
'We want coherence!'

Anaphoric agreement: 1.PL *nos* is less frequent (around 0,5% of the targets), but also attested (with both 3.SC and 1.PL verb forms).

(Taylor 2009; Brito & Sedrins 2017; Carvalho et al. 2018; Varaschin 2021)

- (4) Eles preferem que **a gente**₁ **nos**₁ mate [...]
they prefer that A GENTE CL. 1.PL kill.3.SC
'They prefer that we₁ kill ourselves₁'



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Deriving the variation

Low-frequency patterns survive because they are **grammatically licensed**.

An **adequate grammar** needs to account for all of the patterns:

- ▶ verbal agreement (VA):
 - ▶ *a gente* – V.3.SG
 - ▶ *a gente* – 1.PL
- ▶ local anaphoric agreement (LAA):
 - ▶ *a gente* – *se*
 - ▶ *a gente* – *nos*
- ▶ attested combinations of VA+LAA:
 - ▶ *a gente* – *se* – V.3.SG
 - ▶ *a gente* – *se* – V.1.PL
 - ▶ *a gente* – *nos* – V.3.SG
 - ▶ *a gente* – *nos* – V.1.PL



The CONCORD/INDEX distinction

The fact that *a gente* can trigger 3.SG VA and 1.PL LAA simultaneously suggests that we need a **single structure** with **two sets of ϕ -features**:

- (5) O amigo é um presente que *a gente*₁ *nos*₁ dá.
 the friend is a present that A GENTE REFL.1.PL give.3.SG
 ‘A friend is a gift that we₁ give to ourselves₁.’

There is a precedent for this in HPSG: the CONCORD/INDEX distinction.

(Kathol 1999; Wechsler & Zlatić 2003; Levine 2010; Wechsler 2021)



CONCORD is a HEAD feature whose value gathers syntactic information that feeds the **morphological realization of inflection**

(≈ PF ϕ -features from Smith (2017))

$$(6) \left[\text{HEAD} \left[\text{CONCORD} \left[\begin{array}{l} \text{phi} \\ \text{PERS } \textit{pers} \\ \text{NUM } \textit{num} \\ \text{GEN} \textit{gend} \end{array} \right] \right] \right]$$

INDEX is a CONT(ENT) feature that serves to **trigger variable binding** and **restrict the values** of assignment functions to **sub-domains of D_e**

$$(7) \left[\text{CONTENT} \left[\begin{array}{l} \textit{nom-obj} \\ \text{INDEX} \left[\begin{array}{l} \text{phi} \\ \text{PERS } \textit{pers} \\ \text{NUM } \textit{num} \\ \text{GEN} \textit{gend} \end{array} \right] \end{array} \right] \right]$$



nós: The values of CONCORD (syntactic PER and NUM values) and INDEX (semantic PER and NUM values) are **the same**.

- (8) Lexical entry for the pronoun *nós*

$$\left[\begin{array}{l} \text{PHON} \langle \textit{nós} \rangle \\ \text{SYNSEM} \left[\begin{array}{l} \text{CAT} \left[\text{HEAD} | \text{CONCORD} \left[\begin{array}{l} \text{PERS } \textit{1} \\ \text{NUM } \textit{pl} \end{array} \right] \right] \\ \text{CONT} \left[\begin{array}{l} \textit{ppro} \\ \text{INDEX} \left[\square \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

a gente: The values of CONCORD and the values of INDEX are **different**.

- (9) Lexical entry for the pronoun *a gente*

$$\left[\begin{array}{l} \text{PHON} \langle \textit{a, gente} \rangle \\ \text{SYNSEM} \left[\begin{array}{l} \text{CAT} \left[\text{HEAD} | \text{CONCORD} \left[\begin{array}{l} \text{PERS } \textit{3} \\ \text{NUM } \textit{sg} \end{array} \right] \right] \\ \text{CONT} \left[\begin{array}{l} \textit{ppro} \\ \text{INDEX} \left[\begin{array}{l} \text{PERS } \textit{1} \\ \text{NUM } \textit{pl} \end{array} \right] \end{array} \right] \end{array} \right] \end{array} \right]$$

Different types of agreement rules may target CONCORD or INDEX...



Verbal agreement

Verbal agreement: can target both **CONCORD** and **INDEX**

- (10) **A gente** { **é** / ? **somos** } uma família.
 A GENTE be.3.SG be.1.PL a family
 ‘We are family.’

The **CONCORD** value on V can come from the subject’s **CONCORD** or **INDEX**.

The **CONCORD** value on V determines its morphological realisation.

(following AGR in Kathol 1999)



Rules for verbal agreement

The inflectional realisation of a verb is determined by a **paradigm function** Φ , which takes a *stem* (e.g. *am-* for ‘love’) and the **CONCORD** value of the *verb-word* and outputs the corresponding phonetic form.

(following Wechsler & Zlatic 2003)

- (11) Constraint on *verb-word*

$$\text{verb-word} \Rightarrow \left[\begin{array}{l} \text{PHON } \Phi(\text{2}, \text{1}) \\ \text{STEM } \text{2} \\ \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \mid \text{CONCORD } \text{1} \end{array} \right]$$

- (12) a. $\Phi(\text{am-}, [\text{CONCORD } 1.\text{pl}]) = \text{am-amos}$

b. $\Phi(\text{am-}, [\text{CONCORD } 3.\text{sg}]) = \text{am-a}$

- (13) a. $\Phi(\text{com-}, [\text{CONCORD } 1.\text{pl}]) = \text{com-emos}$

b. $\Phi(\text{com-}, [\text{CONCORD } 3.\text{sg}]) = \text{com-e}$



Rules for verbal agreement

- (14) LR1 for **CONCORD** agreement (morphosyntactic agreement)

$$\left[\begin{array}{l} \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \\ \text{verb-lexeme} \end{array} \left[\begin{array}{l} \text{VFORM } \text{bse} \\ \text{verb} \end{array} \right] \right] \mapsto \left[\begin{array}{l} \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \\ \text{ARG-ST} \\ \text{verb-word} \end{array} \left[\begin{array}{l} \text{VFORM } \text{fin} \\ \text{CONCORD } \text{1} \\ \text{verb} \end{array} \right] \left\langle \text{NP} [\text{CONCORD } \text{1}], \dots \right\rangle \right]$$

- (49) Constraint on *verb-word*

$$\text{verb-word} \Rightarrow \left[\begin{array}{l} \text{PHON } \Phi(\text{2}, \text{1}) \\ \text{STEM } \text{2} \\ \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \mid \text{CONCORD } \text{1} \end{array} \right]$$

- (15) a. LR1 → a gente + am-a
 b. LR1 → nós + am-amos
 c. a gente + am-amos



Rules for verbal agreement

- (16) LR2 for **INDEX** agreement (semantic agreement)

$$\left[\begin{array}{l} \text{SYNSEM} \mid \text{CAT} \\ \text{verb-lexeme} \end{array} \left[\begin{array}{l} \text{HEAD} \\ \text{ARG-ST} \left\langle \text{NP} \left[\begin{array}{l} \text{CONCORD } \text{1} \\ \text{INDEX } \text{2} \end{array} \right], \dots \right\rangle \right] \end{array} \left[\begin{array}{l} \text{VFORM } \text{bse} \\ \text{verb} \end{array} \right] \right] \mapsto \left[\begin{array}{l} \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \\ \text{verb-word} \end{array} \left[\begin{array}{l} \text{VFORM } \text{fin} \\ \text{CONCORD } \text{2} \\ \text{verb} \end{array} \right] \right]$$

$\wedge \text{1} \neq \text{2}$

- (49) Constraint on *verb-word*

$$\text{verb-word} \Rightarrow \left[\begin{array}{l} \text{PHON } \Phi(\text{2}, \text{1}) \\ \text{STEM } \text{2} \\ \text{SYNSEM} \mid \text{CAT} \mid \text{HEAD} \mid \text{CONCORD } \text{1} \end{array} \right]$$

- (17) a. LR1 → a gente + am-a
 b. LR1 → nós + am-amos
 c. LR2 → a gente + am-amos



A rule for semantic VA (LR2) is **independently needed**

(Rubio & Gonçalves 2012; de Alencar 2013, i.a.)

(18) *Collective Nouns*

O pessoal {foi / foram} convidado
 the.3.MASC.SG people.3.MASC.SG was.3.SG was.3.PL invited.MASC.SG
 ‘The people were invited.’

(19) *Measure nouns*

Um bocado de presentes {chegou / chegaram} ontem
 a.3.SG bunch.3.SG of gifts arrived.3.SG arrived.3.PL yesterday
 ‘A bunch of gifts arrived yesterday.’



Local anaphoric agreement

For **local anaphoric agreement**, Principle A predicts that only *a gente*'s INDEX features (1.PL) should be relevant.

(20) **Principle A:**

An anaphor has the same INDEX as a local o-commander.

This is the right prediction:

- (21) *A gente*₁ admira {*nós mesmas*₁ / **ela mesma*₁}
 A GENTE admire us same.FEM.PL her same.FEM.SG
 ‘We₁ admire ourselves₁.’



The fact that *a gente* can control LAA with *se* is not a problem
 → *se* is underspecified for INDEX in contemporary BP

- (22) a. *A gente*₁ {*se*₁ / ? *nos*₁} {*ama* / *amamos*}
 A GENTE REFL.3 CL.1.PL love.3.SG love.1.PL
 ‘We₁ love ourselves₁’
 b. *Nós*₁ {*se*₁ / *nos*₁} *amamos*
 we REFL.3 CL.1.PL love.1.PL
 c. *Tu*₁ {*se*₁ / *te*₁} *amas*
 You REFL.3 CL.2.SG love.2.SG
 ‘You₁ love yourself₁’ (Pereira 2007; Brito 2008; Menuzzi & Lobo 2016)

The **variation** between *se/nos* follows from the fact that there are **two realisations** for an anaphoric clitic with a *1pl* index.



Rules for clitics

Clitics are introduced by a **lexical rule**: (adapted from Monachesi 1999)

(23) Complement Cliticization Lexical Rule (CCLR)

$$\left[\begin{array}{l} \text{word} \\ \text{HEAD } \textit{verb} \\ \text{COMPS } \langle \bar{1} \circ \langle \bar{2} \rangle \rangle \\ \text{CLTS } \langle \rangle \end{array} \right] \mapsto \left[\begin{array}{l} \text{COMPS } \langle \bar{1} \rangle \\ \text{CLTS } \langle \bar{2} \rangle \end{array} \right]$$

$$(24) \left[\begin{array}{l} \text{word} \\ \text{PHON } \langle \textit{ama} \rangle \\ \text{HEAD } \left[\begin{array}{l} \textit{verb} \\ \text{CONCORD } 3\textit{sg} \end{array} \right] \\ \text{COMPS } \langle \bar{2} \text{NP}.\textit{acc} \rangle \\ \text{CLTS } \langle \rangle \end{array} \right] \mapsto \left[\begin{array}{l} \text{word} \\ \text{PHON } \langle \textit{ama} \rangle \\ \text{HEAD } \left[\begin{array}{l} \textit{verb} \\ \text{CONCORD } 3\textit{sg} \end{array} \right] \\ \text{COMPS } \langle \rangle \\ \text{CLTS } \langle \bar{2} \rangle \end{array} \right]$$

CLTS provides an **interface with morphophonology**: it contains information which is relevant for the realisation of the cliticized verb.

There are different realization rules corresponding to each clitic.



Rules for clitics

The CLTS in the realisation rule that yields verbs marked with *nos* is fully specified for CONCORD and INDEX:

(25) Clitic Realization 1 (CR1)

$$\left[\begin{array}{l} \text{word} \\ \text{PHON } [1] \\ \text{CLTS } \left\langle \text{NP} \left[\begin{array}{l} \text{CONCORD } [2] \text{ 1pl} \\ \text{INDEX } [2] \end{array} \right] \right\rangle \right\} \Rightarrow [\text{PHON } \langle \text{nos} \rangle \oplus [1]]$$

The CLTS that gets realized as the proclitic *se* is underspecified for INDEX.

(it is only specified as having *ana* CONTENT)

(26) Clitic Realization (CR2)

$$\left[\begin{array}{l} \text{word} \\ \text{PHON } [1] \\ \text{CLTS } \left\langle \text{NP} \left[\begin{array}{l} \text{CONCORD } 3 \\ \text{CONT } \textit{ana} \end{array} \right] \right\rangle \right\} \Rightarrow [\text{PHON } \langle \textit{se} \rangle \oplus [1]]$$



Rules for clitics

A structure with a [INDEX 1pl] anaphoric clitic satisfies the conditions for both CR1 and CR2:

(27) a. A gente₁ {se₁ / ? nos₁} {ama / amamos}

A GENTE REF.3 CL.1.PL love.3.SG love.1.PL

'We₁ love ourselves₁'

$$\text{b. } \left[\begin{array}{l} \text{CLTS } \langle [2] \rangle \\ \text{ARG ST } \left\langle \text{NP:ppro} \left[\begin{array}{l} \text{CONCORD } 3\text{sg} \\ \text{INDEX } [1] \text{ 1pl} \end{array} \right], [2] \text{NP:ana} [\text{INDEX } [1]] \right\rangle \right\}$$

The cliticized verb in (27a) can be realized with *nos* (CR1) and *se* (CR2).

The PHON of the verb that the clitic exponents *nos/se* get appended to will depend on LR1 or LR2.



Usage preferences?

We can account for the **pool of possible variants**, but how do we explain the **usage preferences** among them?

▶ verbal agreement (VA): ▶ local anaphoric agreement (LAA):

▶ *a gente — V.3.SG*

▶ *a gente — 1.PL*

▶ *a gente — se*

▶ *a gente — nos*

▶ attested combinations of VA+LAA:

▶ *a gente — se — V.3.SG*

▶ *a gente — se — V.1.PL*

▶ *a gente — nos — V.3.SG*

▶ *a gente — nos — V.1.PL*

Theory of **register** ...



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Register

Register variation: intra-individual variation in linguistic behaviour influenced by situational and functional settings

(Lüdeling et al. 2022; Pescuma et al. 2023)

<https://sfb1412.hu-berlin.de>

That is: In which **communicative situation** do we prefer a **linguistic form** over another?

This type of variation interacts with all levels of linguistic description:

(28) I {**ve** / **have**} bought it.

(29) My wife is a {**policewoman** / **cop**}.

(30) I will arrive at {**3:32** / **half past 3**}.

(cf. Solt 2015)

(31) **a gente** vs. **nós**

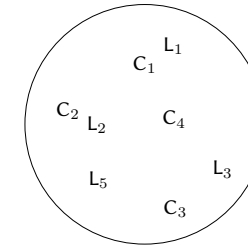


Conceptualising Register

Grammar acquisition:

In the course of our life, we acquire **lexemes** and **constraints** to combine or transform linguistic objects (i.e. phonology, morphology, syntax, etc.).

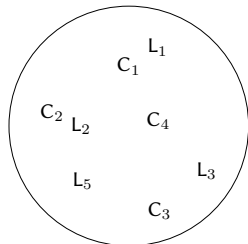
Grammar



Register acquisition:

Through **social interaction**, we learn that there are different **external factors** in the “real world” (e.g. socio-cultural factors), which lead to different kinds of **behaviour**.

Grammar



External Factors

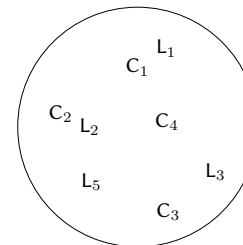
close relation
distant relation
place: church
official communication
private communication
...



Register acquisition:

The different **external factors** are clustered into (abstract) **situations** that lead to **similar (or same) behavioural patterns**.

Grammar



Situations

S₁: formal
S₂: informal
S₃: family
S₄: friends
...

External Factors

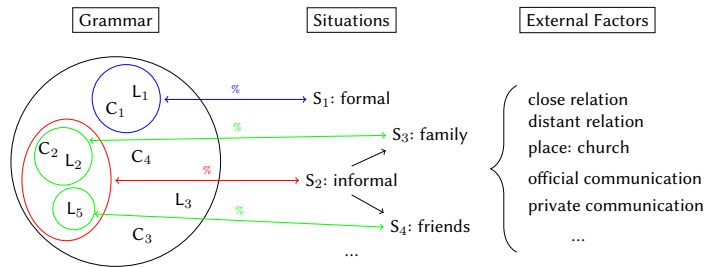
close relation
distant relation
place: church
official communication
private communication
...



Register acquisition:

Our **use of grammar** as an **externalisation of behavioural patterns** reflects these **abstract situations** (super- and subtypes).

→ building registers



Registers

Subsets of constraints in the grammar that are used with a higher probability in a specific situation.



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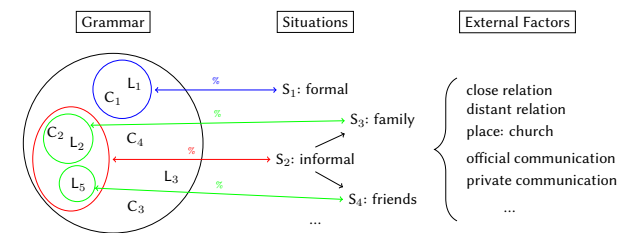


Formalising register variation

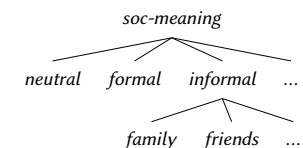
- ▶ HPSG → promising for modelling register (**sign-based, underspecification, ...**)
(Paolillo 2000; Bender 2007; Asadpour et al. 2022; Machicao y Priemer et al. 2022)
- ▶ HPSG architecture allows to associate social meanings with **different levels of grammatical representation** (phonology, syntax, argument structure, semantics, information structure, etc.)
- ▶ social meanings → **abstraction of communicative situations** and partition of a grammar into registers



First, we need different **types of social meanings** which reflect the situations in which we use expressions.



We encode these values as an **inheritance hierarchy** of *social meaning* values representing some properties of signs (lexical rules, words, syntactic constraints, etc.).

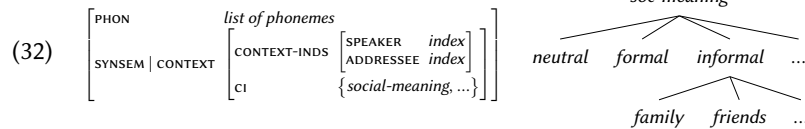




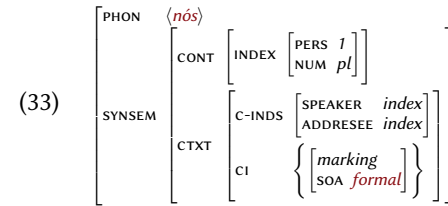
Second, since the combination of linguistic expressions with different social meanings (i.e. register clash) is **possible** and **grammatical**, but **less adequate**, they enrich the meaning of linguistic expressions as **conventional implicatures**.

They are values inside the CONTEXT feature of signs.

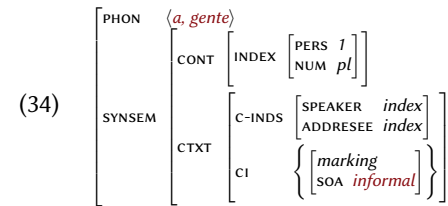
(following Green 1994; Paolillo 2000; Bender 2001; Asadpour et al. 2022)



The speaker conveys some **formality** with the utterance of *nós*.



The speaker conveys some **informality** with the utterance of *a gente*.



(following Green 1994; Paolillo 2000; Asadpour et al. 2022)

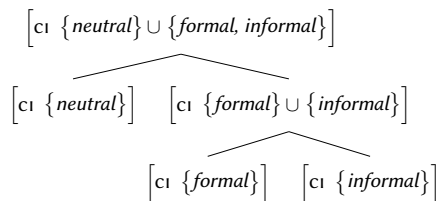


Third, we need a way to **project the conventional implicatures** of the parts when combining them to larger phrases.

CI Projection Principle (simplified)

The CI value of a phrase is the union of the CI values of the daughters

(cf. Pollard & Sag 1994b; Paolillo 2000; Asadpour et al. 2022)



... minus those that are integrated into the phrase's semantic representation. CIs are integrated into a semantic representation only in the scope of a speech act operator.

(cf. Asadpour et al. 2022)



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Predicting the judgments

Our **grammar** can license the utterances that are **attested** in the data.

The **judgements** and **frequencies** w.r.t. the different combinations **vary** according to whether there is a clash between the social meanings, making it hard to assign the **complex utterance to any specific register**.



According to sociolinguistic studies:

(Naro et al. 1999; Freitag 2016; Freitag et al. 2018; Schwenter et al. 2022, i.a.)

► assignment of value at **lexical level**:

1. **nós** ⇒ *formal*
2. **a gente** ⇒ *informal*

► assignment of value at **morphosyntactic level**:

1. $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 1pl \end{array} \right] \Rightarrow \textit{formal}$ (*am-amos*: agreement with 1.PL)
2. $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 3sg \end{array} \right] \Rightarrow \textit{neutral}$ (*am-a*: agreement with 3.SC)
3. $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 1pl] \rangle \right] \Rightarrow \textit{formal}$ (*nos*: +*am*(-a/-amos): cliticization of 1.PL)
4. $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 3] \rangle \right] \Rightarrow \textit{neutral}$ (*se*: +*am*(-a/-amos): cliticization of 3)



The cases that are perceived as “less-than-fully” acceptable are those that show a set of **conflicting social meanings** (i.e. register clash):

1. **a gente** + **ama** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 3sg \end{array} \right]$ {*informal, neutral*} → [acceptable, frequent]
2. **a gente** + **amamos** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 1pl \end{array} \right]$ {*informal, formal*} → [odd, rare]
3. **a gente** + **nos** $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 1pl] \rangle \right]$ + **ama** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 3sg \end{array} \right]$ {*informal, formal, neutral*} → [odd, rare]
4. **a gente** + **se** $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 3] \rangle \right]$ + **ama** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 3sg \end{array} \right]$ {*informal, neutral, neutral*} → [acceptable, frequent]
5. **a gente** + **nos** $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 1pl] \rangle \right]$ + **amamos** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 1pl \end{array} \right]$ {*informal, formal, formal*} → [odd, rare]
6. **a gente** + **se** $\left[\text{CLTS } \langle \text{NP}[\text{CONCORD } 3] \rangle \right]$ + **amamos** $\left[\begin{array}{c} \text{verb} \\ \text{CONCORD } 1pl \end{array} \right]$ {*informal, neutral, formal*} → [odd, rare]



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Conclusions

on a **grammatical** level:

- ▶ the **grammar** allows for all **attested variations**
- ▶ difference between CONCORD and INDEX agreement by means of LR1 & LR2

on a **usage** level:

- ▶ acceptability judgments are explained by the interaction between **grammatically encoded social meanings** and **external communicative situations**
- ▶ structures with conflicting social meanings are perceived as **less acceptable** because they are hard to assign to any coherent communicative situation

External factors shape which **parts** of the grammar can be (**feliciously**) used in which **contexts**.



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