

Pragmatic Uses of Gestures in Brazilian Portuguese in Contexts of Negation

Usos pragmáticos de gestos no Português Brasileiro em contextos de uso de negação

Beatriz Graça

Universidade Estadual do Sudoeste da
Bahia (UESB) | Vitória da Conquista | BA | BR
biafgss@gmail.com
<https://orcid.org/0000-0003-0097-0202>

Maíra Avelar

Universidade Estadual do Sudoeste da
Bahia (UESB) | Vitória da Conquista | BA | BR
mairavelar@uesb.edu.br
<https://orcid.org/0000-0003-4907-6121>

Abstract: Drawing on discussions about the pragmatic functions of gestures, this study demonstrates how recurrent gestures in Brazilian Portuguese convey performative and metapragmatic functions in various communicative contexts of negation. To illustrate these pragmatic uses, we selected six examples of recurrent gestures performing distinct pragmatic functions from Brazilian TV shows, TED Talks, and legislative sessions. The dataset, comprising 565 samples ($N = 565$), was analyzed using the Methods of Gesture Analysis (MGA) and the Linguistic Annotation System for Gestures (LASG), focusing on gesture forms, functions, and their semantic relation with speech. Statistically significant results ($p < 0.001$) indicate that recurrent gestures used in contexts of negation in Brazilian Portuguese operate at a pragmatic level, contributing to the utterance's illocutionary force, and often at a metapragmatic level, where they mark stancetaking and signal the speaker's attitude toward the interlocutor.

Keywords: Gesture studies; Contexts of negation; Pragmatic functions; Multimodality; Brazilian Portuguese

Resumo: Com base em discussões sobre as funções pragmáticas dos gestos, o objetivo deste trabalho é demonstrar de que forma gestos recorrentes do Português Brasileiro podem desempenhar funções pragmáticas performativas e metapragmáticas em diferentes contextos comunicativos de negação. Para ilustrar os usos pragmáticos dos gestos recorrentes nesses contextos, coletamos, de programas de TV brasileiros, TEDTalks e sessões legislativas, seis ocorrências



de gestos recorrentes de negação que desempenham diferentes funções pragmáticas. Para análise do corpus, que, por sua vez, é composto por um total de 565 amostras ($N = 565$), foram utilizados tanto o Método de Análise dos Gestos (MGA) quanto o Sistema Linguístico de Anotação Gestual (LASG), com um foco maior nas formas e funções gestuais, bem como na relação semântica estabelecida entre gesto e fala. Os resultados que apresentam significância estatística ($p < 0,001$) demonstram que os gestos recorrentes em contextos de negação no Português Brasileiro operam em um nível pragmático, executando a força illocucionária do enunciado, e, principalmente, em um nível metapragmático, marcando, sobretudo, a postura epistêmica, assim como a atitude do falante, direcionada ao interlocutor.

Palavras-chave: Estudos de Gestos; Contextos de Negação; Funções pragmáticas; Multimodalidade; Português Brasileiro

1 Introduction

In the last decade, Gesture Studies have increasingly explored the linguistic potential of gestures (Bressem et al., 2013), grounded in the view of gestures as ‘visible utterances’ (Kendon, 2004). This perspective allows for gestures, like verbal language, to undergo grammaticalization processes, encompassing conventionalization and meaning stabilization (Ladewig, 2014). This paper analyzes the pragmatic functions of recurrent gestures in Brazilian Portuguese across diverse communicative contexts of negation. First, we define recurrent gestures and the (meta)pragmatic functions these gestural utterances can perform in spoken language. Next, in Materials and Methods, we describe the criteria for corpus selection, the linguistic gestural analysis parameters, and the steps taken to operationalize sample analysis. Finally, in Results and Discussion, we examine six illustrative samples of gestures in Brazilian Portuguese within contexts of negation, highlighting their coordination with speech and pragmatic uses. We then present descriptive and statistical results from our database findings.

2 Theoretical backgrounds

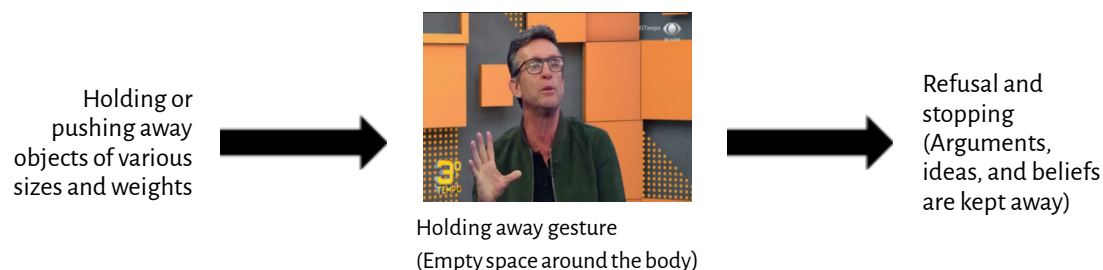
2.1 Recurrent gestures in contexts of negation of use

Recurrent gestures can be understood as intermediate – in-between lexicalization and grammaticalization process – or hybrid gestural forms. According to Ladewig (2014), recurrent gestures share relatively stable features in the form-meaning and/or form-function relation in verbo-gestural compounds. Although their functions and uses can be variable according to the local context and the cultural environment of the speaker's community, their regularities allow them to be grouped by semantic themes, since the motivation of gestural forms is still transparent (Ladewig, 2014). In other words, the common features of form and movement, as well as the common semantic themes, make it possible to establish “gesture families” (Kendon, 2004) that could be subjectively and, most of the times, culturally related to the situation they are set in (Ladewig, 2024).

For instance, in contexts of negation within the Brazilian Portuguese linguistic community, the “flapping gesture” could be considered as an example that, up until this moment, has not yet been described in other languages or cultures. This widely used gesture is characterized by palm up or vertical open hands, with the fingers respectively moving back and forth or up and down, usually in the center of the gesture space, acting as if rapidly cleaning/removing something off the hands¹ (see “Results and Discussion” for a more detailed account).

In addition, there are more conventionalized gestures in contexts of negation known to be used among different cultures, such as the ones of the Open-Hand Prone family (OHP), early described by Kendon (2004), and later detailed in terms of metaphorical extensions, so they can convey aspects of speech and communication by simulating the manipulation of physical objects, turning these gestures into abstract versions of practical actions (Streeck 2005, 2017). These metaphorically extended movements were grouped as the Away family (Bressemer; Müller, 2014), as each gesture in this family involves a straight movement away from the body, symbolizing a distanced action (Bressemer; Müller, 2014, p. 1596). What brings these gestures together is not necessarily the shape or position of the hands, as initially proposed by Kendon (2004), but rather, the act or effect of metaphorically pushing or keeping unwanted objects, entities, ideas, or actions away from the immediate gestural space. The following scheme, adapted from Bressemer and Müller (2014), displays how the metaphoric extensions function in an illustration of a holding away gesture:

Figure 1 – Metaphorical extension of the action scheme of the holding away gestures



Source: Scheme adapted by the authors, based on Bressemer and Müller (2014). Video source: sports show *Terceiro Tempo* (episode aired in 2019).

¹ This is stated based on the documentation being conducted at this moment (Graça, 2021, forthcoming) and on the accounts already published for recurrent gestures in other languages.

In the given example, IDEAS or ENTITIES (the metaphoric source-domain) are OBJECTS (the target-domain) to be removed and kept away from the body. The gestures in the Away family have in common the shared effect of an underlying action: removing or keeping away something close to or approaching the body to keep the space around the body clear. This effect can be considered as the semantic core or motivation for the gestural forms that can be assembled in a gesture family. Thus, this family is semantically connected by the themes of Rejection, Refusal, Negative Assessment, and Negation (Bressem; Müller, 2014).

2.2 The pragmatic functions performed by recurrent gestures

Müller (2014) argues, from the point of view of Pragmatics, that any gesture can be considered a communicative action: some express primarily the propositional content, like gestures with referential functions; others perform an illocutionary force, like performative gestures. As Silva Ladewig states: “While singular gestures often contribute to the proposition of a multimodal utterance, recurrent gestures mainly serve pragmatic functions” (Ladewig, 2024, p.34). Therefore, most recurrent gestures are based on instrumental actions or manipulations, since they perform pragmatic functions and ground their ability to engage in pragmatic meaning-making on the manual actions that motivate them (Ladewig, 2024).

Recurrent gestures categorized as performatives perform a pragmatic function, corresponding to the illocutionary force of an utterance (Kendon, 2004, 2013). In contexts of negation, these gestures perform a communicative action, like the brushing away gesture that highlights a situation where something is ended by being brushed aside and removed from the immediate space, affecting the actions of someone else and, consequently becoming relevant for the circumstances of the interaction itself (Teßendorf, 2014). These gestures aim at the interlocutor, acting as a speech act of dismissing. Even though performative gestures are mostly used without speech (Teßendorf, 2014), they may be used co-expressively with a verbal utterance.

When performing discursive or modal functions, recurrent gestures are used meta-communicatively and operate on a metapragmatic level. In contexts of negation, gestures performing the discursive metapragmatic – or punctuational - function (Kendon, 2004, 2013) are used to highlight the structure of the speech, like the holding away gesture used as discursive markers for contrast, elaboration, or inference (Bressem; Wegener, 2021).

Gestures performing a modal function can provide a frame of interpretation for a specific speech segment, conveying the speaker’s attitude or stancetaking. Gestures performing this function are tightly linked with the verbal unit on which they operate. In contexts of negation, these gestures display the speaker’s attitude towards a subject, like the brushing away gestures used as a negative assessment to reject something and qualify it as annoying (Bressem; Müller, 2014).

In sum, gestures operating on a metapragmatic level – performing a discursive or modal function – are tightly connected with the speech and help to structure an utterance and show in which kind of communicative act the speaker/gesturer is engaged. In contrast, gestures working on a pragmatic level – performing a performative function – tend to transcend the level of speech and be detached from it, acting “on its own right” (Teßendorf, 2014, p. 1552).

3 Materials and methods

3.1 Corpus selection and methods for gesture analysis

Our *corpus* from gestures used in contexts of negation is composed of 565 samples of gestures from Brazilian Portuguese, selected from our database composed of nearly 20 hours of videos. These samples were collected from various sources and communicative contexts: TED talks, face-to-face interactions in interview programs, and parliamentary sessions, all retrieved from YouTube; face-to-face interactions in research-oriented focal groups, retrieved from the Intercultural Communication in Multimodal Interactions (ICMI)²; and televised talk-shows and news broadcasts collected in the Distributed Little Red Hen Lab multimodal library³. Part of the data selection followed a two steps process: (i) search for keywords, such as “no”, “never”, and prefixes of negation in Brazilian Portuguese, as described in the following table (Graça, 2021), and (ii) the identification of gestural forms of the “Away Family” (Bressemer; Müller, 2014), in different communicative situations initially excluding the verbal utterances (Graça, 2021).

Table 1 – Keywords used to collect the Red Hen data

Key words
Não (No)
Nem (Neither)
Nunca (Never)
Ninguém (Nobody)
Jamais ⁴ (Never)
Nenhuma (None)
Sem (Without)
Nada (Nothing)
Impossível (Impossible)
Desativar (Deactivate)

Source: Graça, 2021.

² ICMI is an inter-institutional and international network of researchers, hosted at the Federal University of Minas Gerais, Brazil, that analyzes intercultural communication in interaction from micro-analytical and multimodal perspectives.

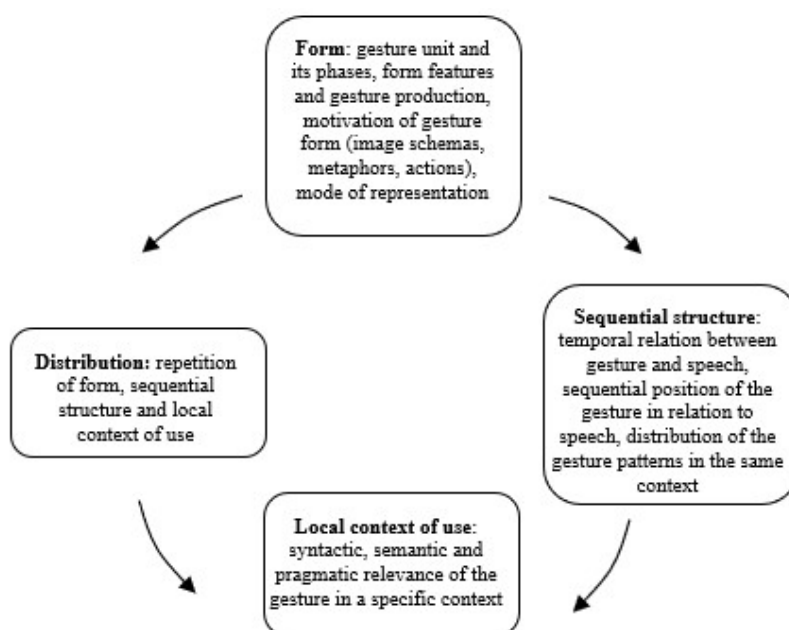
³ <https://www.redhenlab.org/home/how-to-cite-and-credit-red-hen>

⁴ “Jamais” would be a more intensified form of “never”, like when “never” is combined with “ever”: “I’ll never ever do this task”, for example.

The other part was selected according to different communicative situations. We gathered different videos from a wider range of communicative events, to do our documentation from an expanded set (Graça, forthcoming). The videos were organized and classified by the following categories (Raso; Melo, 2012): number; duration; year; public or private domain, controlled, noncontrolled, or partially controlled situation; presence or absence of a mediator; formal or informal setting; and, finally, type of interaction: split into monologue, dialogues (more coordinated) and spontaneous conversations (less coordinated).

Regarding the methods for gesture analysis, we used the homonymous system proposed by Müller (2013; 2024). The Methods for Gesture Analysis (MGA) allows a systematic reconstruction of the fundamental properties of gestural meaning based on form features, distinguishing four building blocks: i) the form; ii) the sequential structure of gestures in relation to speech and other gestures; iii) the local context of use; iv) the distribution of the gesture over different contexts of use (Bressem, et al., 2013; Müller, 2024), as illustrated below:

Figure 2 – Diagram of the Methods of Gesture Analysis



Source: Barbosa (2020), adapted from Müller (2019).

As can be observed, the MGA proposes that the meaning of a gesture emerges from the relation between form, sequential position, and context of use (Bressem et al, 2013; Müller, 2024). The most recent version of MGA (Müller, 2024) focuses on hand gestures and analyzes gestures as temporal forms “embedded in a dynamically unfolding context and an understanding of context that itself varies with the adopted framework” (Müller, 2024, p. 184). MGA⁵ also approaches the multimodality of language use as a dynamic process occurring along different timescales. The Method offers sets of tools for gesture analysis that are adaptable to different research purposes and that can be extended by future researchers that work with various analytical frameworks.

⁵ All the parameters proposed in the Methods and used in this study can be visualized on the Appendix.

Taking the first three blocks of MGA (form, sequential position, and local context of use) into account, the Linguistic Annotation System for Gestures (Bressemer, et al., 2013) can be applied to turn these blocks into annotation tiers applicable to computer annotation tools, such as ELAN (Sloetjes et al., 2008). The system allows the description of the relation between gestural forms and functions. Furthermore, gestures can be analyzed from the perspective of a multimodal grammar, as the system also allows the simultaneous description of gestures and their relation to speech.

On its turn, LASG is composed of three blocks. The first block outlines the parameters of gestural forms, based on four form parameters initially proposed for the description of sign languages: (1) handshape, such as open or closed hand, extended or bent index finger; (2) palm-orientation, such as down, up, horizontal, vertical or diagonal; (3) movement direction, such as up, down, to the right, to the left, towards and away from the body; and (4) position in the space, such as self-touching gesture (on the speaker's body), proximal, medium or distal from the speaker.

The second block proceeds describing gesture modes of representation: (1) enacting, in which the hands move in a way that they engage in a functional act that involves the manipulation of something; (2) embodying, in which the hand stands for the entity it represents by replacing it; (3) drawing, in which the hand or hands move as if tracing an imaginary trail of the depicted form; (4) holding/molding, in which the hands shape a 3D object.

The LASG examines gestures and the semantics of speech on its third block. It draws on McNeill's (2005) concept of "co-expressiveness", which considers speech and gesture as modalities that can express the same underlying idea unit, each in their modality-specific ways. In analyzing the semantic relation between gestures and the co-expressive speech segments, the system focuses on gestures' semantic functions in relation to the verbal utterance. The basic semantic functions are: (i) emphasizing, when they express redundant semantic features, illustrating what is verbally uttered; (ii) modifying, when they express complementary semantic information, modifying the verbal meaning; (iii) additive, when carrying contrary semantic information, also altering the verbal meaning; (iv) substitutive, when they express semantic information in the absence of speech, replacing the verbal meaning (Bressemer, et al., 2013). Therefore, gestures can embody elements of the verbal meaning; mark important information; and highlight and foreground information in the flow of speech (Bressemer, et al., 2013).

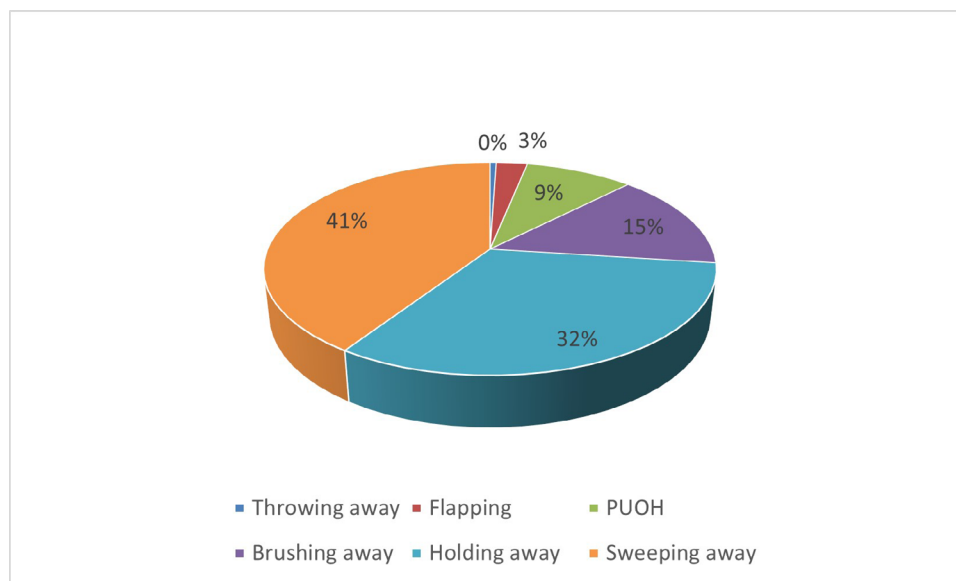
3.2 Methodological procedures

To run the analysis of the gestural forms and functions, we created tiers (Graça, 2021) on ELAN (Sloetjes et al., 2008) following the annotation procedures proposed both in LASG and in MGA (2013; 2024): at first, the sound of the video was turned off, to avoid a biased interpretation based on the verbal content, and the gesture units (where a gesture begins and ends) were determined; next, the sound was turned on and, after the transcription was made using GAT2 (Selting, 2009) minimal transcription conventions, formational features of gestures were categorized. Finally, gestures were analyzed along with the linguistic context in which they co-occurred, allowing the identification of gestural functions.

4 Results and discussion

As in the German language; Brazilian Portuguese data indicates that the Away family is also composed of four recurrent gestures: the Sweeping Away, Holding Away, Brushing Away, and Throwing Away gestures (Bressem; Müller, 2014). Nevertheless, another gestural form was identified in the data; the flapping gesture, which, so far, has only been documented in Brazilian Portuguese data. In addition, the Palm-Up Open Hand gesture (PUOH) combined with negative verbal utterances also emerged in contexts that evoke a negative meaning (Graça, 2021), as it also occurs in some other cultures (Cooperrider et al, 2018). All these patterns – or gesture types – are distributed in the following way:

Figure 3 – Gestural patterns distribution in the collected dataset






Source: Authors' database.

The descriptive graph indicates that the sweeping away gesture is the most frequently used across different communicative situations in Brazilian Portuguese, normally to completely exclude and negate arguments, beliefs, or ideas (Bressem; Müller, 2014). The other predominant gesture is the holding away gesture, mostly used to reject and halt unwanted topics of conversation (Bressem; Müller, 2014). Following we have the PUOH and the brushing away gesture. When used in contexts of negation, the PUOH gesture predominantly occurs within contexts in which an unawareness of knowledge is expressed. The brushing away gesture, in turn, is used to remove, or dismiss annoying topics that are negatively assessed (Bressem; Müller, 2014). Lastly, there is the flapping gesture, which is commonly used to emphasize the information conveyed in speech when dismissing irrelevant subjects; and the throwing away gesture, used to reject and label arguments, ideas, and actions as uninteresting (Bressem; Müller, 2014).

We have selected six samples that illustrate each gesture-type in different communicative situations. Each sample includes a picture of the gesture stroke, the transcription of the verbal utterance, and the segmentation of the gesture units.

In the first sample, the speaker is on a sports show, talking about a big fire tragedy that killed 10 junior players from Flamengo, one of the biggest soccer clubs in Brazil. In this case, the speaker is talking about the fact that it is irrelevant for which team the children were playing, and emphasizing that what truly matters is that they were just children and lost their lives prematurely and in such a tragic way.

Figure 4 – Multimodal representation of a flapping gesture (sample 1)

<p>Gesture: (z2) flapping motion palm lateral, back forth movement, in the center of the gesture space, hands acting as if rapidly and energetically removing something</p>			
<p>(.)</p>	<p>não TEM flamengo não tem corinthians não tem palmeiras não tem seleção brasilei:ra não tem real madrid não tem</p>		<p>não eXISte isso,</p>
<p>(.)</p>	<p>there is no Flamengo, there is no Corinthians, there is no Palmeiras, there is no Brazilian National soccer team or Real Madrid</p>		<p>it doesn't matter</p>
<p>Preparation</p>	<p>Stroke</p>		<p>Gesture2</p>

Source: Made by the authors.



When the speaker affirms that it does not matter which soccer team the victims played for, he mentions other four soccer clubs as examples. He says: “There is no Flamengo, there is no Corinthians, there is no Palmeiras, there is no Brazilian National soccer team or Real Madrid”. During this whole speech segment, the speaker uses a flapping gesture repeatedly with the lateral palm, in a back-and-forth movement as if cleaning the hands, emphasizing the information conveyed in the speech, and, at the same time, dismissing the idea that a specific team should be up to discussion. Thus, the gesture, together with the verbal segment which it occurs with, helps the speaker to create the meaning he is willing to convey: the idea that something is not important or relevant enough to be considered (“*não importa*”/ it doesn’t matter”). Thus, the gesture is metapragmatically integrated with a negative assessment. The frequent relation between this gesture and this verbal utterance (“*não importa*”/ it doesn’t matter”), commonly seen in Brazilian Portuguese, form recurrent kinesic phenomena that indicate a strong potential for this kind of occurrence of the flapping gesture to be considered a multimodal construction. However, further research is needed to address this issue in more detail.

In our database, we identified instances of flapping gestures that are metacommunicative and display a modal or a discursive function. Therefore, there are the flapping gestures that operate upon speech when expressing the speaker’s stancetaking regarding the situation

described, as well as the ones that are coordinated with the aspects related to the structure of speech. That is why they create metacommunicative meaning and serve a metapragmatic function in both cases. Lastly, some flapping gestures are integrated with a speech act to express a communicative meaning of dismissing and interrupting, affecting someone else’s behavior. In these cases, the flapping gestures are predominantly performative and “relevant in an interactive way” (Teßendorf, 2014, p. 1553).

The palm-up open gestures are widely observed, displaying their different form, movement and meaning patterns. In the Brazilian Portuguese data, we identified variants of PUOH gestures presenting meaning patterns within interactional contexts of negative situations and/or stances. The next sample, taken from a talk show, illustrates a PUOH used to express the absence of knowledge.

Figure 5 – Multimodal representation of a PUOH gesture expressing “absence of knowledge” (sample 2)

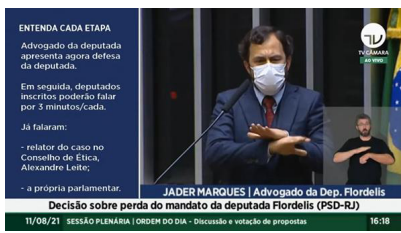
Gesture: open hands, palms up, Moving laterally.		
eu não SEI eu gravava cinco programas por dia esse aí devia ser o quinto programa, eu devia tá canSAda, sei lá o que: eu não SEI (.) eu garanto que (.)	eu não SEI gente;	<risos>
I don't know, I used to shoot five shows a day, this one should be the fifth show or something, I could be tired; I don't know, I guarantee you...	I don't know guys!!!	<laughter>
Preparation	Stroke	Post-stroke hold

Source: Made by the authors.

In this example, Xuxa, a famous TV show host in Brazil, attempts to explain the back-story of an interaction with a child in one of her former TV shows, which has been viral for years (“*senta lá, Claudia*”). She tries recalling what happened, but realizes she is unsure about it, and says out loud “*eu não sei, gente*” (“I don’t know, guys!”). The utterance is accompanied by a PUOH gesture commonly used in contexts where the speaker conveys ignorance or denial. Besides expressing the speaker’s uncertainty, the gesture also assists her in elaborating her stance and bringing the topic to an end, thus serving a metapragmatic purpose. In Brazilian Portuguese, this gesture usually occurs with a shrug of the shoulders.

The next sample was taken from a parliamentary session where Brazilian politicians were debating the mandate revocation of deputy Flordelis Souza, following her charged with murder. In this clip, the speaker is taking the stand in favor of the defendant and is asking for a 6-month extension on the trial:

Figure 6 – Multimodal representation of a sweeping away gesture (sample 3)


Gesture: open hands, palms down, moving from center to periphery taking a narrow portion of the gesture space, with an accentuated, Strong movement quality.		
Daqui SEIS meses os senhores têm tempo, sem	prejuízo	pra esta casa (.) de fazer uma avaliação corREta da situação;
Six months from now you will have had the time, without any	Drawbacks	to make a proper assessment of the case
Preparation	Stroke	Retraction

Source: Made by the authors.

When he says: “six months from now you will have had the time, without any drawbacks to make a proper assessment of the case” he uses a sweeping away gesture along with the word “drawbacks” but referring to the previous negative preposition “without”. In this case, the gesture of negation is semantically emphasizing the negative verbal segment of the occurrence by marking the negative appositive phrase that excludes any possibility of a “drawback” in the period of the trial, thus, serving a discursive function and operating at a metapragmatic level. Therefore, the gesture not only excludes but also negates a topic of the conversation.

The fourth sample is retrieved from the show “*Que história é essa, Porchat?*” (“How come, Porchat?”) in which one of the guests is narrating a story about a weird day in her life when the host Fábio Porchat interrupts her to ask a question about a specific aspect of her story using a holding away gesture:

Figure 7 – Multimodal representation of a holding away gesture (sample 4)

Gesture: open hands, palm away, moving towards the interlocutor		
Falante1: porque eles falaram que iam ajudar a gente;	Falante2: desculpa só interromper (.)	mas? (.) ser o homem borracha significa
Speaker1: because they told us they would help us	Speaker2: sorry to interrupt	but... what does that mean?
Preparation	Stroke	Retraction


Source: Made by the authors.

In this sample, the gesture operates on a pragmatic level serving a performative function, as it marks the illocutionary force of interrupting the conversation in progress, i.e., the guest's story. The gestural utterance acts as a directive interruption, despite occurring with a verbal segment in which there is a marker of politeness ("sorry") and, thus, semantically complementing the information conveyed by the verbal utterance: "Sorry to interrupt".

Nevertheless, the interruption can be considered collaborative, since it represents a request for information on a specific part of the interaction (Kyrychenko, 2017). The pragmatic use of the holding away gesture signals interruption and refusal of unwanted topics. However, in this occurrence, the interruption does not imply a strong rejection of the subject of the conversation, since the speaker (2) uses a marker of politeness. However, it still expresses the need to pause, once the speaker (2) asks for clarification before the other person continues the story.

In the next sample, retrieved from a TED Talk, the speaker narrates the story of her first experience with sexual harassment. She says that as she suffered the abuse, she started crying in the middle of the street. At that moment, an elderly woman saw her and tried to help by saying she was foolish for being sad and afraid when she should be flattered instead.

Figure 8 – Multimodal representation of a brushing away gesture (sample 5)


<p>Gesture: open hands, palm lateral, moving along the sagittal axis.</p>		
<p>quando eu conTEI pra ela o que tinha acontecido ela me disse que eu era (.)</p>	<p>bo:ba</p>	<p>que eu não devia tá chorando por isso,</p>
<p>When I told her what had happened, she told me that I was</p>	<p>Silly</p>	<p>That I shouldn't be crying because of that</p>
<p>Preparation</p>	<p>Stroke</p>	<p>Retraction</p>

Source: Made by the authors, retrieved from a video of their dataset.

In reporting the elderly woman's speech, the speaker performs a brushing away gesture, directly enacting the viewpoint of the elderly lady. The gesture qualifies the situation – the young woman crying in the middle of the street because of the harassment – as irrelevant. In other words, the narrator reports the experience, and the lady's assessment – expressed by the word "silly" co-occurring with the throwing away gesture – about her emotional reaction. In terms of semantic function, the gesture utterance complements what is conveyed in the verbal utterance. Thus, the brushing away gesture performs a modal function, operating on a metapragmatic level, since it demarcates the elderly lady's negative assessment of the situation.

In the last sample, also retrieved from the Brazilian TV show "*Que História é Essa, Porchat?*" ("How come, Porchat?") the host Fábio Porchat tells a joke that does not make anyone laugh, and when he notices it, he turns to his listeners and uses a throwing away gesture (Fig. 9):

Figure 9 – Multimodal representation of a throwing away gesture (sample 6)

Gesture: open hands, palm away, moving downwards		
<O apresentador faz uma piada da qual ninguém ri> não? TÁ;	(-)	
<the host tells a joke that does not make the audience laugh> No? ok;	(-)	
Preparation	Stroke	Retraction

Source: Made by the authors

The gesture replaces the speech segment and operates on a pragmatic level, serving a performative function of the directive speech act of dismissing, because it is through the gesture that the host, after checking with the audience if the joke was funny or not, qualifies his intention of being funny as, now, irrelevant to the communicative context and dismisses his attempt to tell a joke. It works as if the speaker was conveying, with the gesture, the meaning of the expression “*deixa pra lá*” (never mind), commonly used in Brazilian Portuguese, which marks a negative assessment, since the speaker negatively qualifies something as irrelevant and throws it away telling the others to ignore him.

The following table, which summarizes the illustrative samples previously discussed, can provide a visualization of the different pragmatic functions found in our database:

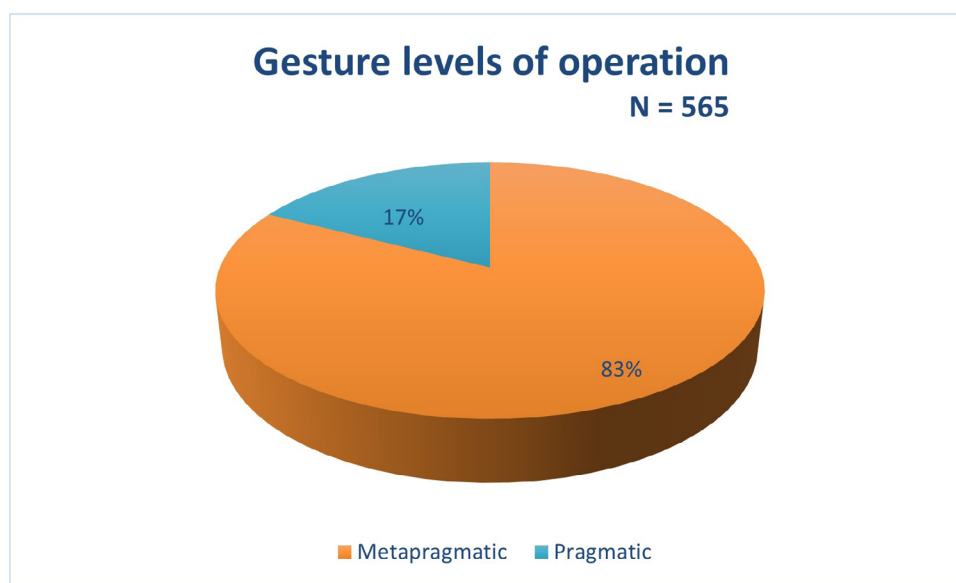
Table 2 – Summarization of the illustrative samples

		Relation to Speech	Function
1		<p>Integrated pragmatically with a negative assessment.</p> <p>Coordinated with discursive aspects of speech.</p> <p>Also integrated pragmatically with a negative assessment.</p> <p>Coordinated with discursive aspects of speech.</p> <p>Potential for a multimodal construction</p> <p>Can also be integrated pragmatically with a speech act.</p>	<p>Meta-pragmatic</p> <p>Meta-communicative</p> <p>Modal</p>
2		<p>Integrated pragmatically with a negative assessment.</p> <p>Coordinated with discursive aspects of speech.</p>	<p>Meta-pragmatic</p> <p>Meta-communicative</p> <p>Discursive</p>
3		<p>Integrated pragmatically with negation/exclusion.</p> <p>Coordinated with discursive aspects of speech, semantically emphasizing the verbal segment.</p>	<p>Meta-pragmatic</p> <p>Meta-communicative</p> <p>Discursive</p>
4		<p>Integrated pragmatically with the illocutionary force of the speaker's utterance.</p> <p>Requests the interruption of the ongoing conversational topic.</p> <p>Semantically complements the verbal segment (modifying semantic function).</p>	<p>Pragmatic</p> <p>Performative</p>
5		<p>Integrated pragmatically with a negative assessment.</p> <p>Semantically complements the verbal segment (modifying semantic function).</p>	<p>Meta-pragmatic</p> <p>Meta-communicative,</p> <p>Modal</p>
6		<p>Integrated pragmatically with a directive speech act of dismissing.</p> <p>Replaces the speech segment (substitutive semantic function)</p>	<p>Pragmatic</p> <p>Performative</p>

Source: Made by the authors, based on samples retrieved from their dataset

When working on a metapragmatic level, gestures can be related to the speaker's stancetaking or attitude-marking or, secondarily, to the structuring of the discourse itself. In these cases, the gestures perform semantic functions – such as emphasizing – directly connected with the verbal part of the multimodal utterance (as illustrated in samples 1, 2, 3, and 5). When working on a pragmatic level, the gestures can serve a performative function, performing a speech act itself or marking the utterance's illocutionary force while simultaneously presenting a semantic function that is not directly related to the verbal content (as illustrated in samples 4 and 6).

Figure 10 – Results concerning the levels of operation worked by the gestures



Source: Made by the authors

The descriptive graph demonstrates that, in most of the samples from our database, the gestures with pragmatic functions operate mostly at a metacommunicative level (83%), and only in a few contexts, at a pragmatic performative level (17%). This difference is highly significant, since the chi-square test (SPSS, 2023) is 22.9486, and the p-value is 0.00013 ($p < 0.01$).

5 Conclusion

The stable-enough structure of form and meaning allows recurrent gestures to be used in various social and cultural contexts of negation and be grouped into gesture families, such as the “Away family” (Bressemer; Müller, 2014), mentioned in this paper. In the six discussed samples, illustrative of all 565 samples retrieved from the Brazilian Portuguese dataset (Graça, 2021; forthcoming), composed of about 20 hours of videos, the gestures operate on pragmatic and metapragmatic levels, performing respectively the utterance’s illocutionary force and, most significantly ($p < 0.001$), marking the speaker’s stancetaking or attitude towards the interlocutor.

In that sense, gestural utterances alone or accompanied by verbal utterances functions to regulate interactions by providing negative assessments, semantically emphasizing a segment of the verbal utterance that expresses what the speaker actually thinks.

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Authors' contributions

Every author contributed equally to every phase of the conduction of the study, including designing, data collecting and analysis, writing, and review. The manuscript has been read and approved by all named authors.

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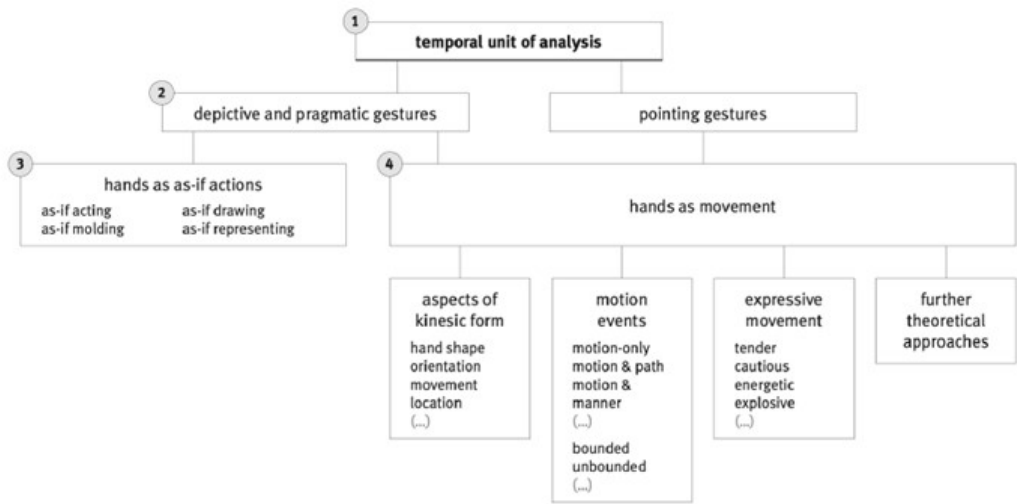
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Appendix

Figure 11 – Overview of levels of annotation in the Methods of Gesture Analysis (MGA)



Source: Müller, 2024, p. 190.

Figure 12 – Overview of levels of annotation in the Linguistic Annotation System for Gestures (LASG)

Level of Annotation		Name of Tier	obligatory/ optional	controlled vocabulary	
Annotation of gestures	determining units	Gesture Unit Gesture Phases	obligatory		
	annotation of form	Hand Shape Orientation Position Movement Type Movement Direction Movement Quality	obligatory	x	
		Mode of representation (MoR)			
		motivation of form	Action Motor pattern Image schema	obligatory	
	Annotation of speech	annotation of speech (turn)	Speech Turn Speech Turn-translation Speech Turn-Gesture Phases Speech Turn-Gesture Phases translation	obligatory	
annotation of speech (intonation unit)			Intonation Unit Intonation Unit-translation Intonation Unit-Gesture Phases Intonation Unit-Gesture Phases translation		
prosody		Final pitch movement Accent (primary, secondary)	obligatory optional	x	
Annotation of gestures in relation to speech	Syntax	Word Class	obligatory	x	
		Syntactic Function Integration	optional		
	Semantics	Temporal Relation	obligatory		
		Semantic Relation Semantic Function	optional	x	
	Pragmatics	Turn	obligatory		
		Speech Act Pragmatic Function Dynamic Pattern	optional	x	

Source: Bressem, Ladewig and Müller, 2013, p. 1101.