

Clarifying *when*-constructions: Conversation, morphosyntax, lexicon, and mode and their interactions in language use

Construcciones aclaratorias con *when*: Conversación, morfosintaxis,
léxico y modo, y sus interacciones en el uso de la lengua

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Abstract – The present study investigates clarifying *when*-constructions (e.g., *when I say more, I don't mean that we should consume more, but really it's about creating a rich life*) in a sample of 971 examples from the *Corpus of Contemporary American English*. In this construction, a phrase or clause from a different or the same turn is repeated in a *when*-clause to provide clarification through the main clause, often accompanied by a refining clause. The present research centers around identifying configurations of variables that are correlated with whether a speaker repeats a phrase or clause from a different or the same turn in a *when*-clause. We do so with a predictive modeling approach that uses the following variables: refining clause, main clause verb, main clause polarity, and mode. We also discuss the prototypical configurations associated with each type of repetition. Our findings go beyond traditional research on self-repetition and clarification by showing how their conversational functions interact with other grammatical domains in language use: morphosyntax, lexicon, and mode. This is in line with recent Usage-Based Construction Grammar work that has shown that constructionhood is a complex intersection of internal and external properties.

Keywords – *when*-clause; repetition; predictive modeling; clarification; conversation

Resumen – El presente estudio investiga las construcciones aclaratorias con *when* (por ejemplo, *when I say more, I don't mean that we should consume more, but really it's about creating a rich life*) en una muestra de 971 ejemplos extraídos del *Corpus of Contemporary American English*. En esta construcción, una frase o cláusula del mismo turno o de uno diferente se repite en una cláusula con *when* para proporcionar una aclaración a través de la cláusula principal, a menudo acompañada de una cláusula de refinamiento. La presente investigación se centra en identificar configuraciones de variables que se correlacionan con el hecho de que un hablante repita una frase o cláusula de un turno diferente o del mismo en una cláusula con *when*. Para ello, empleamos un enfoque de modelado predictivo que utiliza las siguientes variables: cláusula de refinamiento, verbo de la cláusula principal, polaridad de la cláusula principal y modo. También abordamos las configuraciones prototípicas asociadas con cada tipo de repetición. Nuestros hallazgos van más allá de la investigación tradicional sobre la autorrepetición y la aclaración al mostrar cómo sus funciones conversacionales interactúan con otros dominios gramaticales en el uso de la lengua: la morfosintaxis, el léxico y el modo. Esto está en línea con trabajos recientes de la Gramática de Construcciones Basada en el Uso, los



cuales han demostrado que el estatus de construcción (constructionhood) es una intersección compleja de propiedades internas y externas.

Palabras clave – cláusula con *when*; repetición; modelado predictivo; clarificación; conversación

1. INTRODUCTION

The present study investigates a rarely-studied construction, the clarifying *when*-construction (1), in which a phrase or clause from a different conversational turn (1) or from the same conversational turn (2) (henceforth just *turn*, for brevity's sake) is repeated in a *when*-clause. In (1), line 03, speaker A repeats the verbal phrase *punish General Aidid* from a different turn, i.e., line 01. By contrast, speaker B in (2), line 02, repeats the possessive phrase *Lord's help* from the same turn.¹

(1) Somalia: Moment of decision (Spoken discourse)

01 **Speaker A.** We should send more troops to **punish General Aidid**.

02 **Speaker B.** If you're sending more troops in in an effort to, as you were saying, Dr. Kissinger, punish General Aidid, it doesn't seem to be making a whole lot of sense that simultaneous with that you're asking President Carter or Bob Oakley to go back in and start up negotiations. Which is it going to be, or am I missing the point?

03 **Speaker A.** Let me first make one point clear. When I say **punish General Aidid**, I don't mean Aidid personally. Rather, I mean reduce his power base in a way so that it is apparent that when you tackle the United States in the brutal way in which it has been done.

04 **Speaker B.** I see.

(2) Veep-Oslo (Spoken discourse)

01 **Speaker A.** Can't believe what you're saying.

02 **Speaker B.** But with the **Lord's help**, I got through it. And when I say **Lord's help**, I mean Jesus Christ Almighty, and not the Jewish one.

03 **Speaker A.** That makes sense.

This repetition serves to provide clarification through the main clause, often accompanied by a refining clause. For instance, in (1), line 03, Speaker A repeats *punish General Aidid* in the *when*-clause and then uses the main clause *I don't mean Aidid personally* and the refining clause *Rather I mean reduce his power base...* directly addressing the interlocutor's expressed need for clarification. In (2), line 02, Speaker B repeats *Lord's help* in a *when*-clause and then uses the main

¹ We use *speaker* as a cover term to refer to participants involved in both spoken and written discourse.

clause *I mean Jesus Christ Almighty* and the refining clause *and not the Jewish one* to prevent a likely request for clarification. Thus, clarifying *when*-constructions occur both in contexts where a clarification has been requested (1) and in contexts where it has been not requested (2). Overall, speakers use these constructions as interactional resources to achieve intersubjectivity, i.e., to ensure that there is an understanding of one another's turns (Heritage 1987; Schegloff 1992; see Nakahama *et al.* 2001 for analogous findings on other constructions). Put another way, clarifying *when*-constructions play a key role in fostering shared understanding during conversations, which is fundamental to human social behavior in everyday life (Levinson 2006).

The present study analyzes clarifying *when*-constructions in a sample of 971 examples from the *Corpus of Contemporary American English* (COCA, Davies 2008) with the aim of identifying configurations of variables that are correlated with whether a speaker repeats a phrase or clause from a different (1) or the same turn (2) in a *when*-clause. This investigation is relevant for several reasons. Previous research has shown that adverbial clauses, including *when*-clauses, can be used in many languages around the world, to repeat information from earlier discourse (e.g., van Gijn 2014; Aikhenvald 2019; Forker and Felix 2019; Guérin and Aiton 2019; Olguín Martínez 2023). Although this is well-known, existing analyses have primarily examined monologic rather than dialogic/interactional data and have only paid attention to this phenomenon through the lens of tail-head linkage.² Additionally, this domain has not yet been approached from a multifactorial perspective. To address these gaps, we employ a quantitative, multifactorial corpus-linguistic approach based on conversational data incorporating the following variables: MAIN CLAUSE VERB, MAIN CLAUSE POLARITY, REFINING CLAUSE, and MODE. Given that constructions may develop specific functions in conversation settings not attested in monologues (Posio and Rosemeyer 2025) and the decision-making processes of speakers are influenced by multiple factors, our study provides a comprehensive account of the factors shaping the use of adverbial clauses and repetition in discourse. Our analysis is grounded in Usage-Based Construction Grammar (Usage-Based CxG), which views constructions as cognitive representations that not only contain lexical, semantic, and syntactic information, but also information about the social contexts in which they

² Tail-head linkage involves the repetition of the predicate of one clause (the tail clause) in the following clause (the head clause) (de Vries 2005: 364). Although clarifying *when*-constructions and tail-head linkage differ in several respects (e.g., while tail-head linkage only occurs in spoken discourse, clarifying *when*-constructions occur in spoken and written discourse), both employ adverbial clauses to recapitulate linguistic material from prior discourse.

have been used (Fischer 2010; Enghels and Sansiñena 2021; Olguín Martínez and Gries 2024; Jensen and Gries 2025).

In what follows, we outline a number of expectations that guided our investigation of characteristics correlated with whether in clarifying *when*-constructions, a phrase or clause is repeated from a different or the same turn in a *when*-clause. Because the existing literature on clarifying *when*-constructions is rather scarce, if not non-existent, we ground our expectations in related research on conversational misunderstandings, differences between spoken and written discourse, information management in discourse, and speaker attention.

First, previous research suggests that participants in spoken discourse distribute explanations, including clarifications of specific topics, across multiple turns (López Cortez and Jacobs 2023) as they must rapidly manage a variety of tasks, often under considerable time pressure (Levinson and Torreira 2015). In contrast, because such time constraints are absent in writing, written discourse tends to be more explicit and information-dense (Chafe 1985; Mithun 2012). Writers tend to provide complete explanations, including clarifications of specific topics, within a single turn in order to convey their message clearly (Lunzer 1979). Based on this distinction, we expect *when*-clauses that repeat a phrase or clause from a different turn, as in (3), to occur more frequently in spoken discourse than in written discourse, given that it is likely that clarification commonly unfolds across multiple sequences; this is therefore a prediction of a main effect of MODE. This may explain why the clause *I don't wanna discuss it* appears in line 03 and not at the end of line 01 in the example in (3). Conversely, we expect *when*-clauses that repeat a phrase or clause from the same turn, as in (4), to occur more frequently in written discourse than in spoken discourse, since writers typically elaborate complex propositional thoughts within a single turn.

(3) Melissa & Joey-Pretty big liars (Spoken discourse)

01 **Speaker A.** I'm sorry, I have an urgent **personal** conflict.

02 **Speaker B.** Personal?

03 **Speaker A.** Stephanie, when I say **personal**, I mean that I don't wanna discuss it.

(4) Why writing from day one is nuts, *The thesis whisperer* (Written discourse)

01 **Speaker A.** My most **successful** doctoral students have been the ones who spent the most time writing, and that meant writing manuscripts intended for publication

in journals or book chapters, and not simply thinking of every writing project as part of their dissertation. When I say **successful**, I mean these are the ones that are now tenured professors with their own research programs.

Second, it is well-known that mutual understanding in conversational settings is accomplished through a range of grammatical resources (e.g., Mondada 2011). Speakers employ turns-at-talk to monitor and maintain mutual understanding to ensure that no linguistic problems arise in communication (Schegloff 1996). However, misunderstandings sometimes emerge in interaction, for instance due to unfamiliar lexical items, problems of reference, difficulties in recognizing actions, or mismatches in assumptions or common ground (Sidnell 2014). In this scenario, speakers draw on a variety of grammatical resources (e.g., repair structures) to clarify specific information and resolve emerging interactional issues (Schegloff 1992). Interestingly, there are also cases in which speakers anticipate that certain information may lead to misunderstandings and consequently employ grammatical resources to avert such potential interactional issues. As mentioned above, clarifying *when*-constructions occur in contexts where a clarification has been requested (see (1)), but also where, although no clarification has been requested, the speaker anticipates that offering one may prevent a potential request from the interlocutor (see (2)).

Such observations lead to the following expectations. We expect that refining clauses as in (1), line 03 (i.e., *Rather I mean reduce his power base...*), will be produced more often when the phrase or clause in the *when*-clause is repeated from a different turn regardless of the main clause polarity; thus, this, like its counterpart below, is a main-effect prediction. On the other hand, we expect that refining clauses as in (2), line 02 (i.e., *and not the Jewish one*), will be produced less often when the phrase or clause in the *when*-clause is repeated from the same turn regardless of the main clause polarity. Here, no clarification has been requested, and thus a refining clause is not communicatively necessary; the main clause itself suffices to prevent a potential clarification request from the interlocutor.

Third, it has been shown that in conversational settings, there are cases in which a speaker A provides a specific type of information and then Speaker B corrects the information provided by Speaker A by means of a construction which tends to show negative polarity, as in (5) (Steube 2001). Put another way, “the first speaker uses grammatical entities against which the next speaker

protests with a sentence nearly identical except that it contains a prosodically marked corrective element” (Steube 2001: 211). In this scenario, negation signals the speaker’s rejection of the prior proposition. By contrast, a speaker sometimes reaches “a point of possible completion in his or her talk, i.e. completes a turn, but then –for whatever reason– finds it expedient to continue talking” (Couper-Kuhlen and Ono 2007: 514). This kind of continuation provides additional information which is part of what the speaker just mentioned, and it may serve different functions, such as clarification, as in (6). Although Schegloff (1996) does not explicitly comment on polarity, most of his examples appear to involve continuations with positive polarity. It goes without saying that the type of correction in (5–6) is different from that of clarifying *when*-constructions. However, it is reasonable to assume that polarity will have similar uses. This leads us to the following expectations. We expect that a phrase or clause repeated in a *when*-clause from a different turn will occur with main clauses showing negative polarity, while a phrase or clause repeated in a *when*-clause from the same turn will occur with main clauses showing positive polarity.

- (5) The last thing we knew about him (Spoken discourse)

01 **Speaker A:** Jack went to the park

02 **Speaker B:** No, Jack didn’t go to the park, but to school.

- (6) Final exams (Written discourse).

01 **Speaker A:** And then the student ended up taking longer than we expected on the final exam. He spent over an hour working on it.

Finally, the main clause in a clarifying *when*-construction serves to introduce a clarification regardless of whether the phrase or clause repeated in the *when*-clause comes in a different or the same turn. This uniform function of the main clause in clarifying *when*-constructions leads us to expect that verb lemmas in the main clause will align with this function in very much the same way as, say, verbs that are most attracted to a slot in an argument structure construction reflect its function (the best-known example is probably the strong attraction of *give* and *tell* to ditransitives; Stefanowitsch and Gries 2003). In our present case, we expect the use of verbs that signal expansions of the speaker’s ideas, such as *mean*, *refer*, and *talk* (7–9). Previous studies suggest that these verbs, particularly *mean*, when preceded by the first person pronoun *I*, help maintain the interlocutor’s attention (Fox Tree and Schrock 2002: 741-742; Brinton 2007: 48) by signaling that

the hearer should “continue attending to the material of prior text in order to hear how it will be modified” (Schiffrin 1987: 309). Put another way, these verb lemmas, when preceded by *I*, provide elaboration, clarification, expansion, explanation, or reformulation of the preceding utterance: *in other words what I’m saying amounts to the following...* (Brinton 2007). In this function, they indicate “change in emphasis, direction, or meaning in order to align the conveyed information with the speaker’s intended contribution” (Goldberg 1980: 215).

(7) Drunk parents (Spoken discourse)

01 **Speaker A.** You don’t know how many times I’ve fantasized about getting rid of you for at least two months, but now that I’m going to jail, I’m gonna be devastated without you.

02 **Speaker B.** Wait, you’re going back to college?

03 **Speaker A.** You know that when I say jail, I **mean** prison.

(8) Prediction: Things will unravel faster than you think (Written discourse)

01 **Speaker A.** Peak Oil is now a matter of open inquiry and debate at the highest levels of industry and government. Recent reports by Lloyd’s of London, the US Department of Defense, the UK industry taskforce on Peak Oil, Honda, and the German military are evidence of this. When I say debate, I am not **referring** to disagreement over whether or not Peak Oil is real.

(9) Under Haley, the Steelers’ offensive style is different in 2012 (Written discourse)

01 **Speaker A.** While style points may not matter to Tomlin or the Steelers, most fans in the Nation sure do seem to like a certain kind of football. And when I say a certain kind of football, I’m **talking** about the running game.

Table 1 provides a summary of the above expectations regarding the characteristics correlated with whether, in clarifying *when*-constructions, a phrase or clause is repeated from a different or the same turn in the *when*-clause.

Expectations regarding fixed effects/predictors	
Predictor	Response
MODE: <i>spoken</i>	TURN: <i>different</i>
MODE: <i>written</i>	TURN: <i>same</i>
REFINING CLAUSE: <i>present</i>	TURN: <i>different</i>
REFINING CLAUSE: <i>absent</i>	TURN: <i>same</i>
MAIN CLAUSE POLARITY: <i>positive</i>	TURN: <i>same</i>
MAIN CLAUSE POLARITY: <i>negative</i>	TURN: <i>different</i>
Expectations regarding random effects (i.e. specific main clause verbs)	
Verb lemma of main clause	<i>mean, refer, talk</i> will account for most instances

Table 1: Expectations of the present study

The remainder of this paper is structured as follows. We first discuss our corpus data and the variables for which clarifying *when*-constructions have been annotated and then present the methods applied (Section 2). In Section 3, we present the results of our analysis and then round up this paper with a discussion of the main findings and implications of the present study (Section 4). Section 5 offers concluding remarks and points to issues that remain to be investigated by future studies.

2. METHODS

2.1. Data retrieval

The English corpus chosen for the investigation of clarifying *when*-constructions in American English was the *Corpus of Contemporary American English* (COCA; Davies 2008). There are two main reasons why we used COCA in the present study. First, it is one of the few corpora providing a sufficiently large number of clarifying *when*-constructions to carry out our quantitative analysis. The *British National Corpus*, for instance, contained only the much smaller number of 178 instances of clarifying *when*-constructions. Second, COCA was the only corpus for which it was possible to obtain clarifying *when*-constructions used in written discourse (web-based material) and spoken discourse (e.g., material from TV and movies subtitles). As one of the variables of our analysis is that of MODE (see Section 1 and Section 2.2), COCA is highly suitable for our purposes.³

The procedure for data retrieval was the following. A concordance search of clarifying *when*-constructions was performed by searching COCA for the form *when I say*. This generated a large sample of constructions occurring with *when I say*, which was then trimmed down to exclude false positives, i.e., constructions that fit the general pattern but are not relevant to the present study, such as the following:

- (10) Instilling a sense of responsibility in your child (Written discourse)

³ It is worth noting that the spoken data in COCA are derived from television and movie subtitles, a type of written-to-be-spoken data that approximates natural spoken language as much as possible. Although this type of spoken data may differ from informal, conversational dialogue between familiar speakers, it approximates natural spoken language reasonably well. Given these considerations, we believe that using spoken data from television and movie subtitles in this study is justified.

01 **Speaker A.** I think I speak for most parents when I say that we want to help our kids develop a strong sense of responsibility.

(11) My son is not eating well (Written discourse)

01 **Speaker A.** I believe I speak for all her family and friends when I say that we are all incredibly worried about her.

The examples in (10) and (11) are not clarifying *when*-constructions as defined above because their function differs from that of our target: (10) and (11) indicate collective opinion or sentiment, i.e., a speaker communicating not just their own feelings, but those of a larger group. The speaker is speaking on behalf of a group, emphasizing collective emotional support.

It is also worth noting that the present study only takes into account clarifying *when*-constructions where the *when*-clause precedes the main clause. Constructions with postposed *when*-clauses, as in (12), are almost non-existent: we only found seven constructions showing this pattern in our exhaustive analysis. Given their scarcity, postposed constructions were excluded from the present analysis.

(12) Investigator? Really? Is that the best you can do? (Written discourse)

01 **Speaker A.** The deeper questions really are best answered by mature members – and I don't mean only old when I say mature.

Following the steps mentioned above, we obtained 971 instances of clarifying *when*-constructions.⁴

2.2. Annotation

For the sample of constructions mentioned in the previous section, we then also coded the relevant variables for our analysis:

- TURN: whether the phrase or clause repeated in the *when*-clause is from a different turn or from the same turn;
- MAIN CLAUSE VERB: the verb lemma that appears in the main clause of the clarifying *when*- construction;

⁴ The data are not publicly available. However, access may be granted upon request to the corresponding author.

- MAIN CLAUSE POLARITY: whether the main clause shows positive or negative polarity;
- REFINING CLAUSE: whether the main clause is followed or not by a refining clause;
- MODE: whether the clarifying *when*-construction is found in spoken or written discourse.

These were manually annotated by inspecting each of the 971 of the clarifying *when*-examples. Table 2 shows the way we organized our data and the subsequent sections describe the variable levels and their annotation in more detail.

Source	Example	TURN	MAIN CLAUSE VERB	MAIN CLAUSE POLARITY	REFINE- MENT CLAUSE	MODE
The closer- Dead man's hand	<i>Speaker A. Okay, let's talk about what I mean by proof. I mean some physical evidence that we can all look at, you know, and go, Speaker B. ahh! Fine. How about this? F.I.D. 's photos from the crime scene? Speaker A. Okay, when I say physical evidence, I mean, you know, fingerprints, DNA, and not what you're saying</i>	different	<i>mean</i>	positive	present	spoken
Diary of a wimpy kid	<i>Speaker A. Now the term 'laugh-out-loud funny' is not to be bandied about. When I say that something is 'laugh-out-loud funny' I am not talking about titters, mild chuckles, or undersized, underfed guffaws.</i>	same	<i>talk</i>	negative	absent	written
Sugar donor: I bit the bullet and it was a tough one to swallow	<i>Speaker A. I totally had dropped the ball on my own health. When I say dropped the ball I mean completely stopped checking my BG</i>	same	<i>mean</i>	positive	absent	written
Fastest way to find a job - Tip 21 career coaching	<i>Speaker A. If you're in the job search, you have certainly heard advice about job boards, networking, or even temporary work. But have you ever considered a career coach as a path to a new job? When I say 'Career Coach', I do not mean the kind of life coach who helps you decide what you should do with your life, but what I'm talking about is a coach who helps you with your career</i>	same	<i>mean</i>	negative	present	written
Delusional misidentification as subpersonal disintegration	<i>Speaker A. These issues are not directly addressed in this paper; but we can note that the normal, unreflective, use of 'I' presumes that the metaphysical and semantic questions have been solved. When I say 'solved' here, I do not mean that a subject is able satisfactorily to articulate a set of conditions which guarantee continued identity or can make explicit a theory of first-person indexical reference. Rather I mean that we are systematically successful in thought and action</i>	same	<i>mean</i>	negative	present	written

Table 2: Excerpt of how clarifying *when*-data was organized in the present study

2.2.1. Conversational turn

Sequential organization is “any kind of organization which concerns the relative positioning of utterances or actions. Turn-taking is a type of sequential organization because it concerns the

relative ordering of speakers, of turn-constructual units, and of different types of utterance” (Schegloff 2007: 2).

As was mentioned in Section 1, in clarifying *when*-constructions, a phrase or clause is repeated from the same or different turn in the *when*-clause (cf. (13) vs. (14)), which constitutes the organizing/response variable in this study.

(13) The Detroit News (Spoken discourse)

Speaker A. We don’t have any time left.

Speaker B. OK, that’s not true. There’s plenty of time and these are very worthwhile questions. It’s been a **long** time, and when I say **long**, I mean looooooong time since Michigan has had a championship-caliber offensive line.

(14) Betsy’s wedding (Spoken discourse)

01 **Speaker A.** You’re gonna have a **fantastic** wedding.

02 **Speaker B.** Wait a minute. - What do you mean by fantastic? - Wonderful. - But not big and expensive?

03 **Speaker A.** Gee, no. When I say **fantastic**, I mean cheap and ugly, but not what you’re saying!

04 **Speaker B:** Ok!

The examples from spoken discourse in COCA used in this study are typically presented in speaker-addressee formats. This organization allowed us to examine the sequential structure of the interaction; more specifically, it allowed us to determine when one interlocutor begins and ends a turn and when the next interlocutor begins and ends theirs within the same conversational context. This in turn made it possible to identify whether the phrase or clause in the *when*-clause was repeated from the same turn or from a different one.

As for written discourse, the data were drawn from two sources: novels and blog posts. In novels, the notion of turn is not inherently applicable, as the text is typically produced by a single narrator and lacks the interactive structure characteristic of conversation. However, the situation is different for blog posts, particularly when comments and responses are involved. Accordingly, we retain the distinction between same-turn and different-turn contexts for this subset of the written data.

2.2.2. Main clause verb

Another variable examined in the present analysis concerns the range of verb lemmas that appear in the main clause of clarifying *when*-constructions. One clarification is necessary regarding what we refer to as the main clause verb. Main clauses may contain two or more verbs. For instance, in (15), line 02, the main clause contains two verbs: *mean* and *gone*. In (16), line 02, the main clause includes more than two verbs: *mean*, *keep on*, *walking*, *turn around*, and *walk*. In this study, however, we consider only the first verb lemma of the main clause, i.e., the verb lemma that immediately follows the first person pronoun. Note that in all the examples considered in the present research, a phrase or a clause is a syntactic argument of the predicate following the first person pronoun. For instance, in (15) line 02, the clause *I was gone through many years of real angst and torment* is a syntactic argument of the predicate *mean*. Accordingly, we do not include cases of *mean* that are part of the completely separate discourse marker *I mean* (Brinton 2007). On this basis, the annotation of this variable was straightforward.

(15) Becoming us- Into the wild (Spoken discourse)

01 **Speaker A.** Why does it hurt you? Besides you're not that person anymore.

02 **Speaker B.** Because I've worked really hard to become who I am. And when I say worked really hard, I **mean** I was **gone** through many years of real angst and torment.

(16) Justified- The promise (Spoken discourse)

01 **Speaker A.** Can't believe what you're saying.

02 **Speaker B.** I had to lose it all before I saw the light. And do you know why? I succumbed to temptation. Now, any man can walk towards temptation, but it takes a real man to walk away from it. And when I say walk, I **mean keep on walking, turn around, walk** in the other direction.

2.2.3. Main clause polarity

As to the polarity of main clauses in clarifying *when*-constructions, sometimes they appear with positive polarity or negative polarity (cf. (17) vs. (18)).

(17) Home improvement-The naked truth (Spoken discourse)

01 **Speaker A.** Oh, my gosh. I got to run out and get Sherman a present.

02 **Speaker B**. Do you want to borrow my earmuffs? It's really nippy out there.

03 **Speaker A**. No, Nancy, when I say run out, I **mean take the car**, and not what you're saying.

(18) Chris Hedges: So Much for the Promised Land (Written discourse)

01 **Speaker A**: our newspaper has daily articles on home invasions, drive by shootings and other happenings by street gangs. When I say street gangs, **I don't mean your everyday kids who get together**.

Determining whether the main clause shows positive or negative polarity was one of the most straightforward aspects of the analysis. Here, negative polarity refers specifically to cases in which the main clause contains the standard negative marker *not*, and standard negation means the basic clausal negation construction(s) of a language (Miestamo 2005: 42).

2.2.4. Refining clause

Identifying refining clauses in clarifying *when*-constructions was generally straightforward during the annotation process for this study. Connectors played a particularly important role in signaling refining clauses. In both spoken and written discourse, refining clauses are commonly introduced by connectors such as *but*, *rather*, *instead*, and *and*. For example, the refining clause in (19), line 03, is introduced by *but*, whereas the refining clause in (20), line 01, is introduced by *and*.

(19) Making light: Yes, a little fermented curd would do the trick (Written discourse)

01 **Speaker A**: It is a method where we bring more and more and more into our lives.

02 **Speaker B**: Like de Kooning we are called to continue to expand and explore and grow. Right?

03 **Speaker A**: When I say more I don't mean that we should consume more, **but really it's about creating a rich life**.

(20) From the mind of Murph: Vote for the other guy (Written discourse)

01 **Speaker A**: You know. Those folks that call themselves geeks because they watched all 9 some-odd hours of Lord of the Rings and have spent a few hours playing World of Warcraft or some such. Contrary to what they think, those aren't geeks. When I say Geek, I mean that I'm a D &D; playing, comic book reading, SciFi loving, social outcast, **and not what people usually call "a geek."**

In cases where refining clauses were not introduced by a connector, particularly in written discourse, punctuation, i.e., the semicolon, played a crucial role in identifying refining clauses, as shown in (21-22).

(21) Dean Karnazes is on the road again (Written discourse)

01 **Speaker A:** You know, I think it's just – making the most of every minute of life. Just taking a concept and saying, it should be bigger. It should be more fun. And when I say “big,” I don't mean this big media campaign; **I mean big in our live.**

(22) The importance of staying sequential (Written discourse)

01 **Speaking A:** Interestingly, when I ran ext4 with no journal it got *worse* for OSYNC writes because then it has to do the full metadata write(s) instead of a simple journal write before returning. When I say “worse” I mean even worse than single-disk; **not just worse than separate-journal.**

2.2.5. Mode

Identifying the communication mode of each example, whether it occurred in spoken or written discourse, was straightforward, as COCA explicitly provides this information.

In the following section, we describe the statistical approach used to analyze the data in greater detail.

2.3. Statistical analysis and overall model performance

The statistical analysis of our data centers around identifying configurations of variables that are correlated with whether a speaker repeats a phrase or clause from a different or the same turn by means of a clarifying *when*-construction using a predictive modeling approach. There are two reasons to adopt such an approach: first, it allows us to see whether our expectations are met (see Table 1) and which factors have the highest degree of discriminatory –i.e., predictive– power for where the repetition occurs. Second, based on the logic of Gries (2003), Bernaisch *et al.* (2014), or Olguín Martínez and Gries (2025), it allows us to determine what the prototypical cases are for these two different interactional situations (when the repeated phrase or clause is from a different turn and when the repeated phrase or clause is from the same turn) and the constructional use in

them.

In order to prepare the statistical analysis, we began with an exploratory stage. Most variables to be included were well enough distributed but the variable MAIN CLAUSE VERB required some conflation of verbs to address the issue of very low cell frequencies when main clause verb was cross-tabulated with the response variable TURN. It has been argued in the past that one can deal with this kind of scenario by conflating all variables levels below a certain frequency into one ‘big’ level called *other* (see Wolk *et al.* 2013). However, we disprefer this option, which is why we follow a slightly different approach that avoids at least some of the problems of the previously suggested approach:⁵ for each verb lemma with a frequency of less than 6, we determined which level of the response variable TURN it preferred, which yielded three new ‘meta verb lemmas’ called:

- *other different* for verbs like *assert* that occurred more often with TURN: *different* than with TURN: *same*;
- *other mixed* for verbs like *expect* that occurred equally often with TURN: *different* and TURN: *same*;
- *other same* for verbs like *assume* that occurred less often with TURN: *different* than with TURN: *same*.

To be able to evaluate the performance of our predictive modeling approach, we then computed the baselines we would attempt to beat: the no-information rate (the proportion of TURN: *same*) was 0.804, the proportional guessing baseline was 0.685, and the deviance of TURN in general was 960.02.

We then used a generalized linear mixed-effect model (using `lme4::glmer` in R 4.5.2, see Bates *et al.* 2015, following the methods discussed in Gries 2021a, b) to predict TURN based on:

- the predictors MAIN CLAUSE POLARITY, REFINING CLAUSE, and MODE;

⁵ For example, speakers that use few examples are more likely to use only one repetition strategy, which means that the conflation of many speakers that do not just prefer one strategy, but use that one without exception, not only creates an average speaker that does not actually exist, but also makes that speaker exhibit a degree of ‘internal’ variability that is structurally distinct (in its internal multi-modality) and greater than the variance of the ‘regular’, non-conflated speakers. Even worse, in many applications, though not the present one, given the Zipfian distribution of speakers or elements, the conflation of infrequent factor levels can easily lead to an *other* level that is much more frequent than most other or even all actually-attested levels.

- all their pairwise interactions;
- a random-effects structure with varying intercepts for MAIN CLAUSE VERB.⁶

Using Likelihood-Ratio tests, this model was simplified in a backwards selection process to one that contained only fixed-effects predictors whose p -values remained below 0.05.

3. RESULTS

3.1. Overall model performance

The final model resulting from the above model selection process is summarized in Table 3.

	Estimate	se	z	$p_{2\text{-tailed}}$
Intercept: REFINING CLAUSE: <i>absent</i>, MODE: <i>spoken</i>, MAIN CLAUSE POLARITY: <i>negative</i>	0.485	0.3082	1.573	0.1157
REFINING CLAUSE: <i>absent</i>→<i>present</i>	-2.315	0.3618	-6.4	<0.0001
MODE: <i>spoken</i>→<i>written</i>	1.297	0.2632	4.929	<0.0001
MAIN CLAUSE POLARITY: <i>negative</i>→<i>positive</i>	1.905	0.3374	5.646	<0.0001
REFINING CLAUSE: <i>absent</i>→<i>present</i>	-2.15	0.5843	-.368	<0.0003
MAIN CLAUSE POLARITY: <i>negative</i>→<i>positive</i>				

Table 3: Fixed effects summary of the final regression model

The varying intercepts of the verbs explained hardly any variance at all: R^2_{marginal} and $R^2_{\text{conditional}}$ were both 0.313, this is because the verbs, while very different in token frequency, are even just monofactorially distributed fairly much like the response variable;⁷ TURN's $R^2=0.44$. The accuracy of the model was 88.5%, a significant improvement over the no-information rate ($p_{\text{exact binomial test}} < 10^{-10}$), but more important than that are the Cohen's κ -value of 0.63 and the C -score of 0.88 (where, by convention in linguistics, values exceeding 0.8 count as 'excellent').

⁶ Typically, one would include varying slopes of each predictor by main clause verb, but since even with the above conflation half of the lemma types were attested less than 10 times, this was not possible.

⁷ For instance, not a single verb's residuals deviate more from 0 than by 1.54 and the residuals of the by far most frequent verb (*mean*) are both in the interval [-0.45, 0.45].

3.2. Fixed effects results

In what follows, we discuss the nature of the fixed effects that remained significant: the significant main effect of MODE and the significant interaction of REFINING CLAUSE and MAIN CLAUSE POLARITY; we discuss them on the basis of effects plots of predicted probabilities (Fox 2003; Fox and Weisberg 2019) for (combinations of) levels of predictors while all other predictors are held constant at typical values. The main effect of MODE is very straightforward and is represented in Figure 1 where:

- the x -axis represents the predictor mode and its levels;
- the y -axes represent the predicted probabilities of the repeated phrase or clause being from the same TURN (on the left, standard y -axis) and its mirror probability of the repeated phrase or clause being from a different TURN (on the right y -axis);
- the bars (with 95% confidence intervals) indicate the predicted probabilities for each level of MODE.

Clearly, MODE being *spoken* significantly increases TURN being *different* over MODE being *written*.

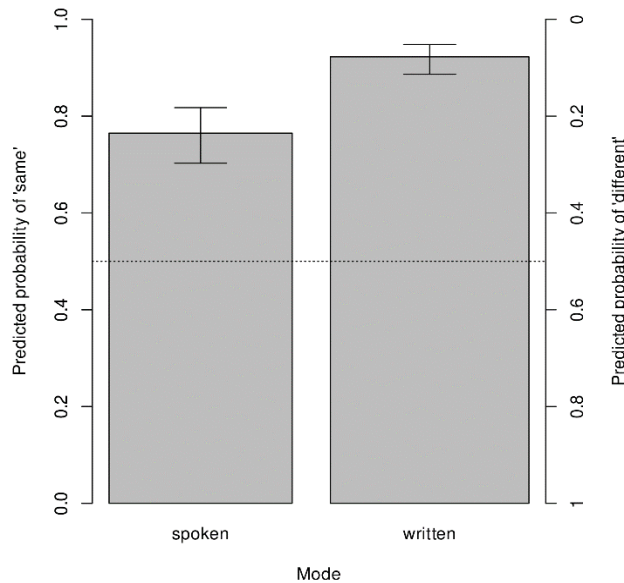


Figure 1: The main effect of MODE in the final regression model

More interesting is the interaction between REFINING CLAUSE and MAIN CLAUSE POLARITY, whose two perspectives are shown in the two panels of Figure 2.

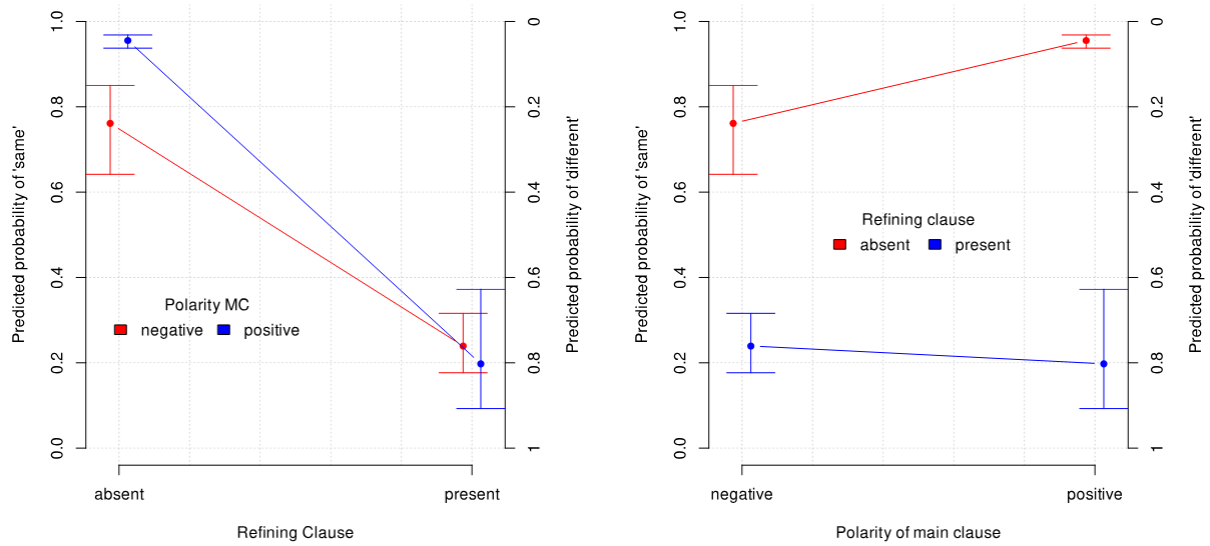


Figure 2: The interaction of REFINING CLAUSE and MAIN CLAUSE POLARITY in the final regression model

Both panels indicate there is an overall main effect such that TURN: *same* is much more likely in the absence of refining clauses regardless of the polarity of the main clause: in the left panel, the predictions on the left (*absent*) are uniformly higher than those on the right (*present*); in the right panel, the upper (red) lines are higher than the lower (blue) ones. However, that main effect of REFINING CLAUSE is qualified by MAIN CLAUSE POLARITY in the interaction. In the left panel, it is clear that:

- in negative-polarity main clauses (red), the presence of a refining clause decreases the probability of TURN: *same* (increases the probability of TURN being *different*) by 52.2%;
- in positive-polarity main clauses (blue), the presence of a refining clause decreases the probability of TURN: *same* (i.e. increases the probability of TURN being *different*) by 75.8%;
- that difference of $(75.8\% - 52.2\%) = 23.6\%$ is highly significant ($p < 0.001$).

By contrast, the right panel shows that:

- in the presence of refining clauses (blue), MAIN CLAUSE POLARITY makes no difference to TURN ($p = 0.61$);

- however, in the absence of refining clauses (red), MAIN CLAUSE POLARITY does make a difference: positive polarity makes it significantly more likely (by 19.4%, $p < 0.0001$) that TURN is *same* than negative polarity.

3.3. The random effect of MAIN CLAUSE VERB

As already mentioned above, the random MAIN CLAUSE VERB did actually not contribute much of anything to the performance of the model. However, it is worth at least brief mention that the frequency distribution of main clause verbs is indeed the straightforwardly expected one: *mean* (784), *talk* (83), *refer* (40), *say* (21), *oth_same* (12), *speak* (9), *include* (8), *think* (6), *oth_mixed* (6), and *oth_diff* (2).

3.4. Prototypes

Given these effects, the question naturally arises as to what the prototypical configurations are for those cases in which the repeated phrase or clause is from a different TURN and for those instances in which the repeated phrase or clause is from the same TURN. Following the above-mentioned studies, the prototype P of a category C is the abstract combination of features F_{1-n} that have the highest cue validity for C, where (i) ‘abstract combination of features’ means that they might actually never all come together in real life –they are possible hypotheticals– and (ii) and cue validity can in turn be defined as follows: a feature F_x (e.g., ‘having a beak’) has a high cue validity for a category C (e.g., ‘birds’) if many/most members of the category have the feature and most/many non-members of C do not have F. For example, most birds (C) have beaks (F) and most non-birds do not have beaks (animals that are not birds but have beaks make up a small set of some turtles, octopuses, platypuses/echidnas, and pufferfish). In a binary predictive modeling context, that means operationalizing a prototype of a category as the abstract combination of features that leads to the highest predicted probability of a category.

We therefore created all combinations of all variables –predictors and the verb lemmas– and used the final regression model to generate predicted probabilities of repeated phrase or clause from a different TURN and repeated phrase or clause from the same TURN; since the verbs’

discriminatory power was so low, we disambiguate predictions for different verbs based on the most extreme residuals of a monofactorial test of verbs' preferences (not unlike what one might get from a collexeme analysis, see Stefanowitsch and Gries 2003).⁸

Based on the predicted probabilities, the prototype of those cases in which the repeated phrase or clause is from a different TURN is the combination of refining clause: *present*, mode: *spoken*, main clause polarity: *positive*, and, according to the residual-based heuristic, the main clause verbs *mean*, *say* or *refer*. By contrast, the prototype of those cases in which the repeated phrase or clause is from the same TURN is the combination of refining clause: *absent*, mode: *written*, main clause polarity: *positive*, and, according to the residual-based heuristic, the main clause verbs *talk*, *include*, or *think*.

In the next section, we discuss these results and relate them back to our expectations from Section 1.

4. DISCUSSION

4.1. Fixed effects results discussion

4.1.1. Turn and mode

One of the most interesting findings presented in Section 3.2 was that a phrase or clause repeated in the *when*-clause is more likely to be from a different TURN in speaking than in writing. This aligns with the expectations outlined in Section 1 regarding TURN and MODE.

First, *when*-clauses repeating a phrase or clause from a different TURN would occur more frequently in spoken discourse than in written discourse, as in (23), given that, as previous work has shown, speakers often distribute explanations, including clarifications, across multiple conversational turns (López Cortez and Jacobs 2023). Such multi-turn clarification can be attributed to the cognitive demands of spoken interaction, where participants must manage multiple tasks in real time and often under time pressure (Levinson and Torreira 2015). Put another way, “the attentional and working memory demands imposed on speaker and hearer by the speech

⁸ Collexeme analysis quantifies to what extent word types in one slot of a construction ‘like to occur’ in that construction (Stefanowitsch and Gries 2003).

situation, as well as competition for the floor in conversation, favor a fragmented, not very integrated style” (Redeker 1984: 44).

(23) CNN_LiveSat (Spoken discourse)

01 **Speaker A:** But, I am sure the U.S. government will serve a **primary** role and.

02 **Speaker B:** You said that the U.S. government will serve a primary role in the mission from this point on. Is that shorthand for saying that you’ve federalized the rescue and relief effort? And if so, how will that improve things?

03 **Speaker A:** No, we have not federalized the effort. And when I say **primary**, I don’t mean that the state and locals don’t have a primary role as well. But what I mean is we typically, as a matter of the general principles of how we work in this country, act merely in a support role.

Second, *when*-clauses repeating a phrase or clause from the same TURN would occur more frequently in written discourse than in spoken discourse, as in (24), given that writers tend to provide more complete explanations, often including clarifications of specific points, within a single turn (Lunzer 1979). In this scenario, “writers have the luxury of time to compose their messages” (Mithun 2012: 5).

(24) What if Chinese people were the dominant race on earth? (Written discourse)

01 **Speaker A:** Even the name of the country, the “middle kingdom,” is implied to be the center of everything.

02 **Speaker B:** There are so many texts and works spouting about how China is/will be the center of humanity and the “heavenly kingdom on earth.” It is absolutely surprising to me that this is the first video following-up on this **diseased thought** that I’ve seen. When I say **diseased thought**, I’m not saying being proud of your heritage is wrong.

4.1.2. Turn, refining clause, and main clause polarity

The discussion now turns to the other finding, the interaction between REFINING CLAUSE and MAIN CLAUSE POLARITY. First, it was shown in Section 3.2 that the presence of refining clauses correlates with TURN: *different* no matter the polarity of the main clause; this aligns with our expectation formulated in Section 1. In addition, as also shown in Section 3.2, the absence of refining clauses correlates with TURN: *same* no matter the polarity of the main clause, which also aligns with our expectation in Section 1.

The former correlation is instantiated commonly when one interlocutor requests clarification and the other responds with a clarifying *when*-construction that includes not only a *when*-clause and a main clause but also a refining clause, as in (25). As argued in Section 1, although the main clause alone may sometimes resolve the clarification request, the addition of a refining clause further reduces the likelihood of additional clarification being needed. In (25), Speaker B interrupts Speaker A with a request for clarification, and Speaker A responds in line 03 with a clarifying *when*-construction that includes both a main clause and a refining clause. Speaker B's acceptance of this clarification is evident in line 04, where no further clarification is sought. The latter correlation, by contrast, tends to occur when no clarification is requested and a refining clause is therefore not communicatively necessary. In (26), Speaker A does not request clarification in line 01. Speaker B, in line 02, simply agrees with Speaker A's assessment and elaborates on what he means by *glaring exceptions*. Speaker A's response in line 03 shows that this elaboration is sufficient and that no further refinement is required. This suggests that the main clause alone is adequate to prevent a potential clarification request from the interlocutor.

(25) Betsy's wedding (Spoken discourse)

01 **Speaker A**. You're gonna have a **fantastic** wedding.

02 **Speaker B**. Wait a minute. - What do you mean by fantastic? - Wonderful. - But not big and expensive?

03 **Speaker A**. Gee, no. When I say **fantastic**, I mean cheap and ugly, but not what you're saying!

04 **Speaker B**: Ok!

(26) ABC_Brinkley/19900128 (Spoken discourse)

01 **Speaker A**: I believe that's right.

02 **Speaker B**: Yes, I do believe that by having Panama a democracy speaks volumes. We had three **glaring exceptions** in this hemisphere a few months ago, Cuba, Nicaragua, and Panama. When I say **glaring exceptions**, I'm talking about glaring exceptions to democracy.

03 **Speaker A**: That sounds right.

While our expectations regarding the levels of REFINING CLAUSE were met, our global expectation regarding MAIN CLAUSE POLARITY was not because there is no *main effect* of MAIN CLAUSE POLARITY. However, there *is* an effect of MAIN CLAUSE POLARITY when REFINING

CLAUSE is *absent* and that effect is indeed in the direction we predicted: positive main clause polarity is correlated with TURN being *same*, and likely for the reasons we discussed in Section 1. We are currently unsure as to why MAIN CLAUSE POLARITY has no effect when there is a refining clause –but at least it does not have the opposite effect.

4.1.3. Turn and verbs

Another finding of the present study is the following: *mean* accounts for 784 (80.7%) of all instances, *talk* accounts for 83/8.5% of all instances, *refer* accounts for 40/4.1% of all instances, and *say* accounts for 21 (2.2%) of all instances. However, these verb preferences were indeed nearly uniform across TURN: *different* and TURN: *same*, as indicated by the irrelevance of the random intercepts for verb lemmas. This aligns with our expectations formulated in Section 1: the verb lemmas *mean*, *refer*, and *talk* will appear in main clauses of clarifying *when*-construction across TURN: *different* and TURN: *same*. This stems from the fact that, as we argued in Section 1, main clauses in this scenario have a uniform function, i.e., they serve to introduce a clarification, and these verb lemmas align with the semantics of this construction. In other words, when preceded by the repeated utterance, they introduce a clarification of that utterance (e.g., *in other words what I'm saying amounts to the following...*; Brinton 2007).

4.2. Prototypes discussion

The discussion in the previous section enabled us to explore in detail a number of significant effects. However, we did not discuss how the different variables considered in the present study jointly contribute to the emergence of prototypical patterns. This is precisely the aim of this section.

First, as was shown in Section 3.4, the prototype of those cases in which the repeated phrase or clause is from a different TURN is the combination of REFINING CLAUSE: *present*, MODE: *spoken*, MAIN CLAUSE POLARITY: *positive*, and, according to the residual-based heuristic, the main clause verbs *mean*, *say*, or *refer* (27).

(27) Betsy's wedding (Spoken discourse)

01 **Speaker A.** You're gonna have a **fantastic** wedding.

02 **Speaker B.** Wait a minute. - What do you mean by fantastic? - Wonderful. - But not big and expensive?

03 **Speaker A.** Gee, no. When I say **fantastic**, I mean cheap and ugly, but not what you're saying!

04 **Speaker B:** Ok!

Second, as was shown in Section 3.4, the prototype of those cases in which the repeated phrase or clause is from the same TURN is the combination of: REFINING CLAUSE: *absent*, MODE: *written*, MAIN CLAUSE POLARITY: *positive*, and, according to the residual-based heuristic, the main clause verbs *talk*, *include*, or *think* (28).

(28) What would be the advantage to the USA of a thriving, high tech (Written discourse)

01 **Speaker A:** Through the use of **renewable energy**, we could eliminate these harmful substances in the air, leading to a healthier population.

02 **Speaker B:** Once the solar panels are installed and the windmills are put up, renewable energy is essentially free. It costs nothing to use the sun's rays and taking advantage of a windy day is free. Furthermore, the supply of wind is not going to diminish. The sun's rays are also prevalent and will exist for millions of years. When I say **renewable energy**, I am talking about solar power, wind power, hydroelectric power.

These patterns align with our expectation outlined in Section 1: main clauses will appear with verb lemmas that signal expansions of the speaker's ideas regardless of whether the phrase or clause repeated in the *when*-clause comes from a different or the same TURN. While these verbs signal expansions of the speaker's ideas, it is noteworthy that the verbs associated with the two prototypes differ depending on whether the repeated phrase or clause is from a different or the same TURN. At the current stage of our work, it is not clear to us why this is the case.

It is also worth noting the following. The prototype of those cases in which the repeated phrase or clause is from a different TURN also occurs with a refining clause (see Section 4.1 for a more detailed discussion of the motivation of this pattern). As for the prototype of those cases in which the repeated phrase or clause is from the same TURN, it appears without a refining clause. This cluster of features makes sense from a usage-based perspective. The absence of a refining clause in this scenario can be easily explained by the fact that no clarification has been requested by the other interlocutor (see Section 4.1 for a more detailed discussion of the motivation of this pattern).

4.3. *Implications*

Self-repetition is pervasive across spoken and written discourse in languages around the world (Bazzanella 2011: 252). It is one of the most fundamental linguistic resources in human communication, deeply embedded in everyday conduct and behavior (Károly 2002: 91). Despite its ubiquity, self-repetition has often been treated as a form of communicative redundancy (Brody 1986: 255). In particular, generative linguists have traditionally neglected the ranges of discourse functions of this linguistic phenomenon (Van Lancker Sidtis and Wolf 2015: 265), frequently viewing it as a marker of disfluency or careless speech (Schegloff 1987). In contrast, usage-based linguists have demonstrated that self-repetition fulfills a range of important discourse functions, one of which is clarification. Norrick (1987: 257), for example, argues that self-repetition for clarification is widespread in interactional settings and should be viewed as a type of comprehension-oriented device that promotes mutual understanding during ongoing conversation in spoken and written discourse.

While previous research on self-repetition and clarification has advanced our theoretical understanding of this domain, it has largely relied on qualitative or monofactorial approaches, focusing primarily on the interactional functions of this linguistic phenomenon (e.g., Erickson 1984; Murata 1995; Tannen 1987, 1989; Bublitz 1989; Tyler 1994). The present study has moved beyond this traditional perspective by examining how self-repetition and clarification not only serve interesting conversational functions, whether a phrase or clause is repeated from a different or the same turn, but also how they interact with other grammatical domains, including syntax (e.g., the presence or absence of refining clauses and main clause polarity), lexicon (e.g., main clause verb lemmas), and mode (spoken or written). In doing so, our study aligns with recent Usage-Based CxG work that incorporates both internal (morphosyntactic, lexical) and external (contextual, conversational) properties of constructions (e.g., Olguín Martínez and Gries 2024, 2026). As Jensen and Gries (2025: 4) note, constructionhood “may be a complex intersection of internal and external properties. In other words, it makes sense to assume that many constructions are essentially multidimensional entities.” Accordingly, multivariate methods provide a productive means of identifying how these properties interact within conversational settings.

5. CONCLUSIONS

5.1. Summary

The present study has provided a comprehensive corpus-based analysis of clarifying *when*-constructions in American English using a predictive modeling approach. In particular, special attention was paid to identifying configurations of variables that are correlated with whether a speaker repeats a phrase or clause from a different or the same TURN in a *when*-clause. The results aligned with all our expectations:

- Turn and mode: a phrase or clause repeated in the *when*-clause is more likely to be from a different TURN in speaking than in writing.
- Turn, refining clause, and main clause polarity:
 - refining clauses were produced more often when the phrase or clause repeated in the *when*-clause was from a different TURN regardless of the polarity of the main clause,
 - refining clauses were produced less often when the phrase or clause repeated in the *when*-clause was from the same TURN regardless of the polarity of the main clause.
- Turn and main clause verb: the verbs we hypothesized to be most frequent ones indeed turned out to be most common, with *mean* accounting for the vast majority of cases.

We also discuss prototypical configurations. For instance, the prototypical case of constructions in which a phrase or clause repeated in the *when*-clause is from a different TURN was the combination of refining clause: *present*, mode: *spoken*, main clause polarity: *positive*, and the main clause verbs *mean*, *say*, or *refer*. By contrast, the prototypical case of constructions in which a phrase or clause repeated in the *when*-clause is from the same TURN is the combination of refining clause: *absent*, mode: *written*, main clause polarity: *positive*, and the main clause verbs *talk*, *include*, or *think*. As for the verb lemmas occurring in both prototypes, they signal expansions of the speaker's ideas. However, the verbs associated with the two prototypes differ depending on whether the repeated phrase or clause is from a different or the same TURN. We mentioned that at the current stage of our work, it is not clear to us why this is the case.

5.2. *Where to go from here?*

There are three main issues that remain to be analyzed by future studies. First, as was mentioned in Section 2.1, the present study only considered clarifying *when*-constructions in which the *when*-clause occurs preposed to the main clause. It remains to be explored how this syntactic feature interacts with the repetition of a phrase or a clause in a *when*-clause.

Second, the present study focused solely on the verb lemmas of the main clause in the analysis of clarifying *when*-constructions. Refining clauses, however, also occur with verb lemmas. Future studies could investigate the extent to which the verbs in these clauses tend to co-occur by employing a co-varying collexeme analysis (Stefanowitsch and Gries 2005). Analyzing such co-occurrence patterns would reveal further functions of this construction not addressed in the present paper.

Third, the next step could be to explore how the configurations of variables that are correlated with whether a speaker repeats a phrase or clause in a *when*-clause from a different or the same turn change across different historical periods. Previous diachronic Usage-Based CxG research has largely concentrated on how particular lexical items become more or less strongly associated with specific constructions over time (Gries and Hilpert 2008). This type of co-occurrence patterning between lexemes and constructions is referred to in the literature as filler-slot relations (see Kay and Fillmore 1999; Hilpert 2013; Diessel 2019, 2020). Future research could therefore examine how filler-slot relations in clarifying *when*-constructions, along with other constructional properties, change across different historical periods.

It is our hope that the method adopted in the present study will be useful to other linguists to explore the interactions of internal and external properties of constructions in language use.

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