



Did Samuel Bronston Commit Perjury?

— A Study in Discourse Semantics

*Luis López**

Abstract

In the landmark case *Bronston v. US*, the Supreme Court put forward a reading of the perjury statute according to which one could only be tried for perjury on the basis of what one had stated, not what was implicated. This decision has given rise to a number of theoretical and practical problems, best detailed in Tiersma (1990) and Douglis (2018). This article argues that a formal investigation of discourse structure, of the type developed in Asher and Lascarides (2003), coupled with an understanding of the role of ellipsis in discourse, allows us to develop a framework that captures those instances of perjury that seem to fall through the cracks of the literal truth condition without introducing speaker's intent on the solution. The crucial idea that the analysis hinges on is the notion that an indirect answer to a question is a two-node discourse with an elliptical polarity answer. Approaches based on Grice's implicatures or speaker's communicative intent are discussed and shown to be inadequate.

Keywords

perjury, implicature, Segmented Discourse Representation Theory, discourse structure

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* University of Illinois at Chicago, luislope@uic.edu.



1. Introduction: Is There Perjury by Negative Implication?

Mr. Bronston was a movie producer that worked often in Europe. Business was not good and finally the company Samuel Bronston Productions had to file for bankruptcy. At a bankruptcy proceedings examination, the following exchange took place between a lawyer for a creditor and Mr. Bronston:

- (1) Q1: Do you have any bank accounts in Swiss banks, Mr. Bronston?
A1: No, sir.
Q2: Have you ever?
A2: The company had an account there for about six months, in Zurich.

Although it was true that Mr. Bronston did not have a bank account in Switzerland at the time of this questioning, he used to have an account in the past. When this was discovered, he was tried for perjury. The relevant federal statute is 18 U.S.C. § 1621–1623; in particular, section 1623 says that “Whoever under oath (or in any declaration, certificate, verification, or statement under penalty of perjury as permitted under section 1746 of title 28, United States Code) in any proceeding before or ancillary to any court or grand jury of the United States knowingly makes any false material declaration...shall be fined...or imprisoned or both.” The Bronston perjury trial was a difficult one because the literal content of the answer was truthful enough: it was true that the company had an account in Zurich. There was clearly an intent to hide information and mislead but no false statement was uttered.

A lower court decided that Mr. Bronston had indeed committed perjury. During the trial, the judge instructed the jury that the defendant could be found guilty of perjury if he provided an answer “not literally false but when considered in the context in which it was given, nevertheless constitute[d] a false statement” (409 U.S. 352, 356; see discussion in Tiersma, 1990). This reasoning is difficult to sustain, it is hard to see how the true proposition “the company had a bank account in Zurich” may become false if the discursive context changes. Many propositions do change their truth values if the context changes, in particular propositions that include deictics. The proposition “water boils at 100°C” is true at sea level and false on top of the Everest. But in the proposition of concern (1) A2 we do not see anything that might suggest that the context will turn it into a falsehood.

The Court of Appeals didn't improve matters very much. It argued that Bronston's answer was perjury by negative implication: “an answer containing half of the truth which also constitutes a lie by negative implication; when the answer is intentionally given in place of the responsive answer called for by a proper question, is perjury.” (453 F.2d 555, 559). In other words: An unresponsive answer provided with the aim of hiding the truth is perjury. This reasoning is even more difficult to sustain. As the Supreme Court would later point out in the *Bronston v. the USA* decision (409 U.S. 352 [1973]), the Court of Appeals asks a jury to speculate on the state of mind of a person being interrogated under the notion of “perjury by implication”. This would create considerable legal uncertainty since witnesses could never be certain they would not be second guessed by

a clever lawyer. A defendant or a witness would be constantly torn between not providing more information than needed and the danger of perjury by negative implication. Consequently, the original sentence was duly overturned by the Supreme Court in a decision that has become seminal. In the *Bronston v. The USA* decision, the Supreme Court argued that only something that is stated can form the basis for a conviction of perjury. In particular, they state that “the statute does not make it a criminal act for a witness to willfully (409 U.S. 352, 358) state any material matter that implies any material matter that he does not believe to be true.”

The Supreme Court added that a jury should not conjecture (should not be allowed to conjecture) whether or not an unresponsive answer intends to mislead. When the whole reasoning of the Supreme Court is put together, it amounts to asserting that only the literal truth of what someone says under oath counts for the purposes of perjury. In particular, the ability of jurors to peek into people’s brains to ascertain if somebody has committed perjury is limited: it can only be used to figure out if the witness believes the statement to be true or not. I find myself in strong agreement with the Supreme Court in this point: the problem caused by “perjurious implications” must be resolved with a method that is subject to public scrutiny and therefore can be shared by anyone who speaks the language, any solution that requests a speculation of a person’s state of mind would create considerable legal insecurity.

The Supreme Court added that if a witness provided an unresponsive answer to a question it is the obligation of the lawyer to probe further until an adequate answer is provided. In the words of the Supreme Court: “to flush out the whole truth with the tools of adversary examination”.

The Supreme Court’s solution has the advantage of being clear and unambiguous. But it is not satisfying. First, it seems to void the “whole truth” part of the oath. Second, and most crucial to our purposes, the concept of literal truth is a hard one to pin down, as philosophers of language have known for a long time. Most in particular, the idea that one can look at a proposition and, without further ado, extract its truth-conditions is very hard to sustain (for the debate see Recanati, 2010; Borg, 2012; Carston, 2002 i.m.a) One important aspect of this issue is that we as speakers routinely do not pronounce full propositions in our speech, leaving up to the listener the job of filling in all the missing information. Consider the following constructed example:

(2) I did.

This sentence fragment does not constitute a proposition – a whole verb phrase is absent. In order for it to do so, material must be recycled from the previous discourse and plugged in where the verb phrase should go. Thus, (3) would be an appropriate answer to the question “did you take out the garbage?” or “did you stab Julius Caesar three times?” You can try and figure out what the missing constituent is by looking at the structure of the previous discourse:

- (3) Speaker A: I don't know who took out the garbage. And I would like to know because whoever did was very careless with it, did not tie up the bag the right way and now there are oily stains on the carpet...
- Speaker B: I did.

Notice that it is not necessary to speculate with regards to the intentions of speaker B in order to fill in the space of the ellipsis. Inspecting the discourse is all that is required. Keeping this in mind, let us return now to the exchanges in (1). Notice that (1) Q2 includes an extensive ellipsis: “have you ever (had a bank account in Switzerland)?” This ellipsis did not give rise to any problems, as far as I know. Consider now another even more difficult example:

- (4) Speaker A: Did Ms. Jones sell the house on April 15, 2016?
Speaker B: Yes, Ms. Jones sold the house.

Notice that in order to make Speaker B's declarative sentence logically true, one only needs to find a point in the past in which Ms. Jones sold the house; (4) has a logical form that can be expressed as follows: $[\exists t, t \text{ a time} \ \& \ t < \text{NOW} \ \& \ \text{Ms. Jones sold house at } t]$. Therefore, the answer provided by Speaker B is a truthful answer if the house was sold on January first 1492 or any other date. However, in the context posed by the question-answer exchange, we take the sentence to mean that ‘Ms Jones sold the house on April 15, 2016’ and, consequently, Speaker B's answer would be regarded as perjurious if the house had been sold on a different date. In order to correctly interpret Speaker B's answer in this particular context, we need to make use of an unarticulated constituent (see Perry, 1986 for the original proposal and Sennet, 2011 for a recent take on it), a constituent of a proposition that is necessary to correctly interpret the proposition but which is not explicitly pronounced. In example (4) we need an unarticulated constituent because without it the truth condition assigned to the utterance would be too broad to constitute a good answer to Speaker A's question. This unarticulated constituent is “April 15, 2016”, easily drawn from Speaker A's utterance. Once again, notice that we are not required to read Speaker B's mind, all we need to do is inspect the previous discourse. This is, in fact, how ellipsis is resolved in natural language.

Tiersma (1990) provides examples of unarticulated constituents (without referring to them with this label) in legal contexts. Consider *People v. Meza* (1987). When a court clerk introduced the defendant of a criminal case to the prospective jurors and asked them if they knew him, the defendant's brother-in-law, who was one of the prospective jurors, did not say anything. He was condemned for perjury. But within a strict reading of *Bronston v. United States*, he probably should never have been condemned, since his perjury was only by implication and he never uttered a false statement. Instead, we conclude that there is an unarticulated constituent “I never met the defendant” which can be inferred because he did not provide a positive answer to the court clerk. These examples are meant to show that the Supreme Court's idea that perjury can only be about the literal truth of what the witness explicitly states needs to be revisited because it assumes

a view of the content of a proposition that ignores the realities of how we actually evaluate utterances. Routinely, we take as true or false statements that, in fact, are neither true nor false on their own. The attribution of truth or falsehood almost always follows a train of inferences that is automatic, below consciousness and not triggered by logic, as uncovered by Grice (1975) and many others after him. Moreover, and most important for the current essay, this train of inferences involves reconstructing elliptical constituents and/or adding unarticulated constituents to the utterance to form a proposition.

Once we understand that the “literal truth” requirement of the Supreme Court is too narrow, the challenge facing us is how to identify forms of perjury that fall through the cracks of this definition while simultaneously making sure that our reasoning is solid and explicit and allows us to separate the wheat from the chaff with reasonable certainty. I surmise that it is desirable to obtain legal certainty from basing our reasoning on formal foundations.

I would like to add a third reason why the Supreme Court’s decision is unsatisfactory. The Supreme Court tells us that what we call perjury is something very distant conceptually and much more circumscribed than what we normally consider ‘lying’. Consider again a constructed discourse with an indirect answer to a polarity question:

- (5) Speaker A: Did you visit Chris again?
 Speaker B: I was at the gym.

If it turned out that Speaker B was, in fact, in Chris’ house before going to the gym, Speaker A would accuse Speaker B of being a liar. Most people would agree. But the Supreme Court tells us that we cannot use our normal, every-day, understanding of what a dishonest statement is when evaluating if there has been perjury. Instead, the Supreme Court argues that we should look at a very abstract object – the literal truth of a proposition – to conclude that someone has committed perjury. Ideally, perjury should be as close to lying as we normally understand it as possible for the same reason that justice should be at least somewhat related to our notion of fairness (but for a different opinion, see Douglis, 2018, who constructs an argument that perjury and lying are conceptually quite different).

It is generally understood that the purpose of perjury statutes is not to stop people from lying. The purpose of the perjury statutes is not to accomplish a desirable moral goal. Rather, their purpose is ensuring that magistrates and juries get the facts right with respect to a case for the proper administration of justice. So, if you lie about something that is not material to the proceedings then you are not committing perjury. For instance, if you lie about having sex with Monica in a case pertaining sexual harassment against Paula then you are not committing perjury because whatever you did with Monica is not material to the question of whether you sexually harassed Paula. Perjury is only a very specific case of lying.

Having said this, I understand that perjury is more circumscribed than lying but I would argue that as long as we have trials by jury we cannot have a definition of truth in perjury so technical that it becomes disconnected to our notion of truth in real life. Jurors are real people after all and they interpret what they see and hear using the same logic that they use in normal life. In particular, jurors use the same Gricean implicatures that we use in regular conversation. If a witness says that ‘Sam took \$5,000 dollars from the cashier’, the jurors will take it to mean that ‘Sam took exactly \$5,000 dollars from the cashier’; if it turns out that Sam took \$10,000, the jurors will conclude that the witness lied even if, from a logical point of view, his statement is a true statement. If a violation of the Gricean principle of quantity would be regarded as a lie in the normal walks of life, it should also be regarded as perjury in a legal sense.¹ In fact, the Supreme Court, in the same holding that discusses Mr. Bronston’s case, seems to agree on this, as they discuss the hypothetical case of someone who claims that he went to a store five times when in fact he did 50 times. Thus, it seems that the Supreme Court itself acknowledges the limits of the literal truth requirement (more on this case in section 4).

Philosophers and legal scholars have written some illuminating work on the distinction between lying and misleading. The lying/misleading distinction is relevant in the present context because it could be argued that Mr. Bronston misled but did not lie. Further, the Supreme Court’s decision leads to the conclusion that perjury is about lying and not simply misleading. Let us then explore if the distinction can illuminate the present case.

Horn (2016) claims that a lie belongs at the level of “what is said” and a misleading statement, on the other hand, is a proposition that induces false implicatures (see Tiersma, 1990 on this topic). Carson (2006) also uses a literal truth definition of lying (enriched with a notion of warranting the truth of the statement) and does not consider cases of misleading statements or sentences that do not have a truth value without some interpretation work.

Green (2005) makes a moral distinction between lying and misleading. The distinction is based on the idea that the latter involves some collaboration by the interlocutor. He proposes a Principle of caveat auditor which entails that if we made erroneous inferences based on what somebody told us we are, at least to some extent, responsible for those inferences. As a consequence, a misleading but truthful statement is morally less reprehensible than a straight lie. Green’s reasoning leads to the consequence that (5) is less immoral than (6):

- (6) Speaker A: Did you visit Chris again?
 Speaker B: No.

¹ As a reviewer for JLL points out, I am here skipping the problem of ambiguity and the sorites paradox. Assume a witness says “Sam took \$5,000 from the cashier” while in fact Sam took \$5,030. I believe most of us would not take it to be a lie, but just a round-up to an approximate figure. In specific circumstances, however, those \$30 might be crucial for the case in which case this would be perjury. This question should certainly be integrated into a general theory of lying and perjury but the goals of this article are more modest and circumscribed to what the literature calls “indirect responses”. For detailed analysis of vagueness see Van Deemter (2010).

Green goes on to claim that people, including victims of dishonest speech, view them differently, with greater outrage in the case of lying. Green does not discuss running a survey or any other method to gauge people's perception and so it seems that his conclusion is based on his own intuition. I don't share this intuition, I personally do not see the moral difference between (5) and (6) – in fact, the sort of astute manipulation that is involved in (5) looks more appalling than a straight lie. Saul (2012), *contra* Green (2005), argues quite extensively that the distinction between lying and misleading does not hold as a principle and that there are many instances in which misleading should be regarded as morally worse than lying. Saul's (2012) argument has consequences for our case because they entail that even if we conclude that Mr. Bronston did not lie, he only misled, we are not allowed to use the lying/misleading distinction as cover to prosecute only cases of "literal truth" perjury. We have to treat misleading statements such as Mr. Bronston's the same way we treat straight lies (although, Saul, 2012 does not reach this conclusion for the legal context, see below).

But, how to go about it? I argue that it is possible to analyze the answer provided by Mr. Bronston and properly classify it as perjury. This can be done without entering into absurd reasoning, and without asking jurors to become mind readers, with all the legal uncertainties that this request would cause. All that is required is a careful linguistic analysis of the conversational exchange. The method I propose to use here is based on Segmented Discourse Representation Theory (henceforth SDRT), particularly the version developed by Nicholas Asher and his collaborators (see in particular Asher and Lascarides, 2003). SDRT provides a formal modeling of discourse structure that makes specific empirical predictions as to what kinds of discourses are felicitous or not. In particular, I use one of the most fruitful ideas that have emerged from the SDRT framework: the idea that any two propositions bound within a discourse may form a subordinate or a coordinate discourse. I join this finding with the assumption that unarticulated constituents form part of the Discourse Model and are used to evaluate the truth conditions of a proposition. This theoretical framework is all we need to evaluate if a proposition denoted by the utterance (1) A2 constitutes in fact perjury.

Solan and Tiersma (2005: 213–221), Saul (2012: 95–97) and Douglis (2018) introduce a new consideration into the issue. They emphasize that the rules of conversation in a witness stand are adversarial and the interests of the people involved are not aligned. They also point out that the lawyer is in full control of the situation: the lawyer chooses which questions to ask and the witness or defendant has to answer them. They go on to claim that the power imbalance provides an argument to support the idea that perjury should be carefully circumscribed – limiting perjury to the literal truth of a statement. It is really the lawyer's job, as the Supreme Court says, to make sure that all answers are pertinent. I appreciate this point. Certainly, witnesses should be protected against accusations of perjury for propositions they did not actually say as they are being interrogated in the stand in a stressful situation. This point highlights that Mr. Bronston's indirect

answer should be inspected in light of discourse structure, which can be easily inspected, without entering into speakers' intent or defeasible implicatures.

The rest of this article is organized as follows. In section 2 I discuss the assumptions of SDRT that I require for my analysis of Mr. Bronston's case in section 3. Sections 4 and 5 are devoted to two unsuccessful paths. Section 4 discusses an approach in terms of Gricean implicatures while section 5 presents a critique of Tiersma's (1990) Communicative approach. Section 6 discusses Asher and Lascarides' (2013) strategic conversations. Section 7 summarizes the conclusions.

2. Discourse Structure

Take two propositions p and q that conform a discourse structure. We define the relationship between p and q as one of subordination or coordination. Let us take it that q is subordinate to p . In this configuration, there is a common topic to p and q and q is an expansion, explanation or elaboration of their super-ordinate proposition p . As an example, consider the following two-node discourse:

- (7) a. Mary took the screwdriver from the box.
b. It had to be a screwdriver of the right size.

The second sentence is a commentary or elaboration of the first one. It is discourse-subordinated to the first one. Here are a couple more examples. In example (8), (8b) is an explanation of the proposition (8a):

- (8) a. John is buying lots of broccoli.
b. He really likes green vegetables.

And in (9), (9b) is an expansion of the proposition expressed in (9a).

- (9) a. Mary loves Susan.
b. Mary kisses the ground Susan walks on.

Question-answer pairs also conform to a subordinate discourse structure. That is, the answer is subordinate with respect to the question as a consequence of sharing the same overarching topic.

When you have a coordinated discourse the propositions involved are linearly connected. The prototypical example of a coordinate discourse is narration, a type of discourse in which each proposition is linked to an overall plot but it cannot be said that one is subordinate to the other in the sense explained above. For example, consider the following two-node discourse:

- (10) a. Mary took the screwdriver from the box.
b. She started to assemble the bed.

The two sentences in this discourse form a mini-narrative and the propositions they denote are coordinated at the level of discourse representation. A logical syllogism or an empirical argument are also examples of coordinate discourse. Again, I can exemplify this with another two-node discourse:

- (11) a. People forget to take their house keys.
b. For that reason, they find themselves unable to enter their own homes.

The second proposition exemplifies a natural consequence of the truth of the first proposition.

Finally, Contrast is another form of coordinate discourse and the one that is crucial for our purposes. Asher and Lascarides (2003: 465) define Contrast as follows. Two propositions p and q are in contrast if there are two conditions: (i) there is some isomorphism in their semantic representations and (ii) there has to be a semantically related but oppositional theme. Asher and Lascarides provide the following example:

- (12) a. John likes sports.
b. But he hates football.

The isomorphism is created by the parallel structures John – he, likes – hates, sports – football. The contrast is in the verb phrases, ‘likes sports’ vs ‘hates football’. (See Appendix A for a slightly more formal definition of Contrast.)

Discourse structures are often represented with graphs such as the one in (13). Each proposition of a discourse is represented with a node in the graph. (13a) shows a discourse D in which proposition q is subordinate to proposition p , in (13b) p and q are coordinate in D :

- (13) a. $D \rightarrow p \rightarrow q$
b. $D \rightarrow p$
 ↓
 q

Let us now focus on the discourse structures of YES/NO questions and answers. As argued in Asher and Lascarides (2003), the answer of any kind of question is always subordinate to the question. The interesting issue for us here is what kind of proposition can follow a YES/NO answer. The following example (14) shows that YES may be followed by another subordinate proposition (an elaboration, or an explanation). In particular, YES cannot be followed by a coordinate proposition of the contrast type. In the following examples, the pound sign # indicates an infelicitous discourse:

- (14) Speaker A: Do you own a Honda?
Speaker B: Yes. It is a wonderful car.
My wife recommended it to me.
I am very happy with it.
#My wife owns a Honda.
#I own a chevy.

Continuations like ‘it is a wonderful car’ or ‘my wife recommended it to me’ constitute elaborations on the positive answer. Together, they form a completely coherent discourse. I suggest that, in the general case, a YES answer can always be followed with a subordinate discourse. However, the contrasts ‘my wife owns a Honda’ and ‘I own a chevy’ are not felicitous continuations to the positive answer. I suggest that in general a positive answer cannot be the first node of a contrast discourse.

Notice that the infelicitous responses improve if we add additional material: “Yes, and my wife owns a Honda too.” “Yes, and I also own a Chevy.” Particles like ‘too’ and ‘also’ are able to force contrastive readings even in contexts that normally do not accept them. For the purposes of this paper, we can safely ignore them because they play no role in the Bronston case.

The connection between the YES answer and the following subordinate discourse is so tight that the YES answer can be omitted and reconstructed from the context as an unarticulated constituent:

- (15) Speaker A: Is Ms. Jonson rich?
 Speaker B: Well, she has a mansion.

The implicit answer to Speaker A’s question is YES, the claim that she has a mansion is an explanation for this conclusion – it is in fact a subordinate node. The implicit answer cannot be NO, it would be a conflict with what we know about the world because you don’t own a mansion if you are not rich.

Let us now look at the continuation of a NO answer. The continuations of a NO answer are the mirror image of a YES answer: NO may give rise to a coordinate proposition of the Contrast type. Consider the following examples:

- (16) Speaker A: Do you own a Honda?
 Speaker B: No. #It is a wonderful car.
 #My wife recommended it to me.
 #I am very happy with it.
 My wife owns a Honda.
 I own a chevy.

As we can see, the NO answer can be followed by a proposition that acts as a contrast of NO. This makes a NO answer starkly different from a YES answer. We can establish the following claim:

- (17) A NO answer can be used as the first node of a Contrast discourse.
 A YES answer cannot be used as the first node of a Contrast discourse.

The restriction in (17) is strong enough that if the NO answer is elided, it can easily be reconstructed:

- (18) Speaker A: Do you own a Honda?
 Speaker B: My wife owns a Honda.
 Speaker C: I own a chevy.

Even if the answer is elided, the discourse structure requires that the answer to Speaker A be interpreted as NO, never as YES. Interpreting the answer as YES would lead to an infelicitous discourse, as shown in (14). Understanding this fact is really all we need to resolve the problem posed by the Bronston case.

Incidentally, I am not saying that NO cannot be followed by a subordinate discourse. It plainly can: A possible answer to Speaker A in example (16) is: “No, it is a terrible car”, where NO is followed by an explanation. The only point here is that YES cannot be followed by a contrast.

In light of this discussion, consider a more complex example, in which the subjects of the question and answer stand in a set membership relation or an inclusion relation:

- (19) Speaker A: Do you own a Honda?
 Speaker B: My family owns a Honda.

The most immediate interpretation is that Speaker B’s family, not Speaker B himself, owns a Honda. The implicit answer is NO and the explicit sentence expresses a contrast between ‘me’ and ‘my family’. The question here is whether the implicit answer could be YES and then ‘my family owns a Honda’ would be an elaboration. Intuitions are hard to grasp here but I would say that this second interpretation requires an explicit YES answer.

3. Mr. Bronston’s Ellipsis

As I said, the tools of SDRT are all we need to show that Mr Bronston committed perjury. My argument is the following: Mr. Bronston’s answer includes an elliptical NO which therefore constitutes a perjurious answer. This elliptical NO can be inferred by inspecting the structure of discourse. This inference is not based on reading the speaker’s mind, it is based on the structure of discourse, something that we can inspect with our naked eyes without exerting violence on anyone’s skull. Thus, we are not going out on a witch-hunt trying to find secondary or tertiary intentions, ambiguities or negative implications to a witness statements, which is what the Supreme Court, correctly, feared. We are strictly led by the need to interpret the utterance at the most basic level.

Let us see how.

1. Mr. Bronston was asked a YES/NO question. Therefore, he could have answered YES or NO. He provided neither, explicitly, leaving the answer elliptical. Since the answer is elliptical, one of the two possible answers needs to be inferred by the listener. Notice that this inference is unavoidable because Bronston did not in fact provide a YES or NO answer. This much is based on what we know about the structure of questions and answers.

2. Let us assume the answer should be YES. Then, his entire utterance is as follows: “Yes, my company had a bank account in Zurich.” Notice that the resulting discourse is

infelicitous. If somebody asks: did you ever have an account in Switzerland, the answer ‘yes, my company had a bank account in Zurich’ is infelicitous. This is parallel to our previous examples in (14). This answer is infelicitous because of the rules of discourse structure. A sentence immediately following the answer YES can only be an elaboration or an explanation to this answer, not a Contrast, as formulated in (17). But the answer ‘my company had a bank account in Switzerland’ is clearly a Contrast, where the contrastive terms are ‘I’ and ‘the company’. The answer YES can collocate with a number of continuations, here are some examples: Did you have a bank account in Switzerland? (Yes), but only for a few months. (This example qualifies as an elaboration). (Yes), I opened it to pay for a surgery that my father underwent in Switzerland. (This is an explanation). But the answer YES does not collocate with a Contrast.

Could one interpret Mr. Bronston’s answer as meaning ‘yes my company (and therefore myself, as owner of the company and therefore included in the company,) owned a bank account in Zurich’? This interpretation seems implausible, since in bankruptcy proceedings the distinction between one’s private account and the company’s account is important and clear to everyone present. “Petitioner’s answer to the crucial question was not responsive if we assume, as we do, that the first question was directed at personal bank accounts.” (Bronston Holding page 409 US 357–8).

Therefore, the sentence that Bronston produced is not an explanation or an elaboration, it is in fact a Contrast (see Appendix B). Thus, the answer cannot be YES. If we interpret the answer as being YES the discourse is infelicitous.

3. Let us assume the answer should be NO. Then, his entire utterance reads as follows: “No, my company had a bank account in Switzerland.” Notice that the discourse formed by the question-answer pair is felicitous. If somebody asks: did you ever have an account in Switzerland, the answer ‘no, my company had a bank account in Zurich’ is felicitous, with the contrastive terms ‘I’ and ‘my company’. It is in fact a kind of exchange that is normal in casual conversation, as shown in the examples above. What is the source of this difference between the YES and NO answers? the introduction of ‘no’ leads to the possibility of a contrast, a type of coordinate discourse. In a contrast discourse, the topic shifts: we go from ‘Honda’ to ‘Chevy’, from ‘me’ to ‘my wife’. In this particular case, the topic has shifted from being “Bronston” to being “the company”. Or to put it differently: the change of topic signals a coordinate discourse and the latter implies that the answer couldn’t be YES because YES only leads to subordinate discourses. Therefore, the answer has to be NO.

4. We can conclude that the elliptical answer to the prosecutor’s question was NO, because only a negative answer coheres with the rest of the discourse. On this basis, we can regard Bronston as being guilty of perjury. We do not need to say that the answer is false “in the context in which it was given” nor do we need to conjecture about the state of affairs in Bronston’s mind. A linguistic analysis of discourse is all we need.

Thus, I take the indirect answer provided by Mr. Bronston to consist of a two-node discourse, in which the first node is the polarity answer and the second node a discourse

continuation. This is not the way indirect answers are described in the literature. As far as I can tell, it is taken as a given that an indirect answer is a one-node discourse in which the polarity answer has to be inferred via a Gricean implicature (as discussed in more detail below). Asher and Lascarides (2003: 403) define an indirect answer as an answer to a question from which the polarity can be inferred, not as something that is elliptically present in the discourse structure:

(20) Indirect Question Answer Pair (IQAP)

IQAP(α , β) holds only if there is a true direct answer p to the question $[|\alpha|]$, and the questioner can infer p from $[|\beta|]$ in the utterance context.

It is clear that (1) A2 falls into Asher and Lascarides' definition of indirect answer. De Marneffe, Grimm and Potts (2009) discuss the type of (1) A2, under the same assumption that the polarity must be inferred from context. They also include in their discussion what they call partially-resolved answers, as in (21) (De Marneffe et al., 2009: 139).

(21) Speaker A: Are your kids little?
 Speaker B: I have a seven-year-old and a ten-year-old.
 Speaker A: Yeah, they are pretty young.

I am not certain at this point that the two-node ellipsis approach is fruitful in a discussion of partially-resolved answers since there is not, in fact, a polarity answer in the structure. I leave this for future research.

4. Perjury and Implicatures

Tiersma (1990), Solan and Tiersma (2005) and Saul (2012) dedicate considerable attention to looking at the Bronston case from the prism of Paul Grice's framework logics of conversation (Grice, 1975). Grice's central idea is that conversations are managed by means of an overarching principle called Cooperation which expresses itself by means of maxims: be truthful, be relevant, be informative, be clear and concise. These maxims constitute a framework that guides the interpretation of sentences beyond their literal meaning. For instance, they allow us to conclude that if you said "there are 20 students in this classroom" you will understand "there are exactly 20 students in this classroom", although in fact the statement remains logically truthful as long as there are at least 20 students in the classroom.

Grice's maxim of relation is of particular importance here. Let us see how it works with an example. Chris wants to know if Pat is rich and so she asks Susan, a friend of Pat's. Susan responds: "she is a doctor." On a literal understanding of the sentence, it looks like this response is unrelated to the question. But we are not literal conversationalists and we assume that our interlocutors are not literal conversationalists either and so we conclude that this sentence is indeed relevant to the question asked. This relevance

is constructed via inference: Pat is a doctor, doctors in the USA are rich, Pat lives in the USA, Pat is rich. Thus, Susan has indeed answered Chris's question. This inference is automatic, we are not even aware that we make it (see also 15 above).

Within this framework, Tiersma argues that Mr. Bronston has violated the maxim of relation in (1) A2 because whether or not the company had a bank account in Switzerland is irrelevant to whether he himself had that account – to put it in the terms favored by legal scholars, his answer was unresponsive. But Mr. Bronston is counting on the listener to fill in the blank to make the answer relevant and the only answer that works in this context is 'no'. Only in this context could the statement "the company had a bank account in Zurich" be understood as a response that aims at being helpful by providing extra information.

The algorithm that yields the negative implicature in the Bronston case goes like this (see Hirschberg, 1985; Potts, 2015 for discussions of implicature algorithms):

- (22) Q. Have you ever (had a bank account in Switzerland)?
 A. The company had an account there for about six months, in Zurich.
 Implicature: Mr. Bronston never had a bank account in Switzerland.
1. Contextual premise: it is mutual public information that Mr. Bronston has complete knowledge regarding his bank accounts.
 2. Contextual premise: there is no contextual relationship between Mr. Bronston owning bank accounts in Switzerland and his company owning bank accounts in Switzerland. The truth of one has no bearing on the truth of the other.
 3. Assume Mr. Bronston is cooperative in the sense of the Principle of Cooperation. (This assumption has been reinforced via oath.)
 4. The contextual premise a) tells us that Mr. Bronston can answer the question. The Principle of Cooperation tells us that he will.
 5. The semantics of YES/NO questions tells us that there are only two possible answers to the question: Mr. Bronston had bank accounts in Switzerland, Mr. Bronston never had bank accounts in Switzerland.
 6. Contextual premise b) tells us that the proposition "The company had an account there for about six months, in Zurich" does not lead to the conclusion that Mr. Bronston ever owned a bank account in Switzerland. Since Mr. Bronston is cooperative, he will avoid obscurity.
 7. Therefore, we conclude that Mr. Bronston never had a bank account in Switzerland.

So, Mr. Bronston has violated a conversational maxim. The idea that we are considering here, then, is whether someone could be guilty of perjury not only on the basis of the literal truth of what has been stated but also on the basis of having violated Grice's maxims. One question you could ask at this juncture is whether Grice's Principle of Cooperation is in fact active in the courtroom given that the exchanges between lawyers and witnesses follow an adversarial framework. In fact, it has been argued that Grice's principles must be active in the courtroom (see Tiersma, 1990). Consider an example. If Mr. Jones says "I have three children", everybody in the courtroom will understand that he has exactly three children and Mr. Jones will be accused of perjury if it turned out that

he had four children and knew about it and this information was material to the case. Notice that if Mr. Jones has four children the statement “Mr. Jones has three children” is a true statement – having four children entails having three. In the current context, the statement “Mr. Jones has three children” is a violation of the maxim of quantity. Similar examples can be constructed in relation to the other maxims. (In parenthesis, one must acknowledge that in some circumstances defendants are not interested in providing more information than exactly what is required and so the maxim of quantity may have a weaker meaning in an adversarial (but highly stereotyped) exchange.)

So, the Principle of Cooperation and Gricean maxims are active in the courtroom. Could any violation of a maxim be regarded as perjury? That is clearly not the case. If a witness says “I was dying of thirst” to mean simply that she was very thirsty she should not be accused of perjury. She was just exaggerating in a manner that is easy to identify by everyone involved. The crucial difference here is precisely that this violation of the maxim is easy to detect and therefore not intended to mislead.

In a footnote to the *Bronston v. US* decision, the Supreme Court discusses an example proposed by a lower court that exploits (unwittingly, it seems to me) Grice’s Maxim of Quantity. The example invites us to consider a fictional situation in which somebody declared that he had walked into a store five times when in fact he had walked in fifty times and this number is material to the case being judged. Should this person be accused of perjury? As the lower court points out, it is “technically true that he entered the store five times” (as in the example above, if an event has taken place 50 times it entails that the same event has taken place any number of times lower than 50). From this, the lower court concludes that we need to consider negative implications in our consideration of perjury. The Supreme Court, however, doubts that this answer can be regarded as “technically true” (which suggests to me that the Supreme Court justices of 1973 did not take an undergraduate logic course). In any case, the Supreme Court claims that there is a crucial difference between this hypothetical case and the *Bronston* case. Translating what the Supreme Court says in the Gricean framework, violations of Gricean maxims that are easy to detect in the conversational exchange cannot form the basis of a perjury conviction. They can be taken to be simple colloquial forms of speech, as in “dying of thirst”. But undetectable violations are a different story. As the Supreme Court says, if somebody says “I went to the store five times” when in fact he went to the store fifty times this is not merely a violation of quantity, it is a violation of quantity that the interlocutor cannot immediately detect in the conversational exchange and therefore the listener will conclude that what the witness meant is “I went to the store exactly five times.” There is nothing to alert us that this implicature does not hold.

Back to the *Bronston* case, the Supreme Court argues that the lawyer for the creditor should have realized at once that Bronston’s answer was not responsive, that it was in fact purposefully unresponsive. Any reasonable person would have realized that Bronston’s statement was not answering the question and it is the obligation of the attorney to keep questioning until she gets a direct answer. To put it in the terms of the

Gricean framework, the violation of the Gricean maxim was easy to detect and to repair. It is only an unreparable violation of Grice's maxims what counts as perjury.

Thus, the Supreme Court gives us a plausible foundation for a legal doctrine on perjury based on Grice's Maxims. The idea is that if a witness declares something under oath purposefully violating a Gricean maxim and this violation cannot be repaired by an ordinary interlocutor, the witness may have committed perjury. The crux of the matter is whether the distinction between repairable and non-repairable violations of the maxims fully resolves the Bronston problem or the more general problem of indirect answers. The weak link in the argumentation is that sometimes it is hard to agree on whether a violation is repairable or not. I will show this with an example. Take the following exchange:

- (23) Speaker A: Do you have any children?
 Speaker B: I have two sons.

If Speaker B has two sons and a daughter, one could argue this is a willfully unresponsive answer. The important question is whether or not one should regard this answer as obviously unresponsive – a transparent violation of Quantity – and therefore repairable, because according to the Supreme Court this draws the line of what constitutes perjury. I think one could find arguments in one direction or the other. On the grounds that Speaker A said 'children' and Speaker B answered 'sons' one could take this to be obviously unresponsive, just as in (1) A2 Mr. Bronston answered about his company when he was asked about himself. If so, if we take Speaker A to be a prosecutor and Speaker B to be a witness, it is the obligation of the prosecutor to inquire further and make sure that the question is fully answered. If the prosecutor does not do so, it is her own fault and the witness cannot be prosecuted for perjury. But we could also consider the maxim violation to be non-repairable – the exchange is felicitous and would raise no eyebrows in casual conversation – it would be understood as meaning "I have exactly two male children and no female children". Since the prosecutor could not know that the witness's statement didn't fully answer the question the witness is guilty of perjury. Which is which? I find it hard to provide a conclusion with any certainty and, in fact, I think there is none. Ultimately, defining if a violation of a maxim is repairable or not might not be a trivial matter. Thus, it seems to me that the Supreme Court's distinction between repairable and non-repairable violations of the Gricean maxims does not really provide a clear-cut extension of the literal truth doctrine on perjury.

The SDRT approach sketched above allows us to tackle the problem of children and sons from a discourse perspective. This is how it works:

1. Speaker B was asked a YES/NO question. Therefore, he could have answered YES or NO. He provided neither, explicitly, leaving the answer elliptical. Since the answer is elliptical, one of the two possible answers needs to be inferred by the listener. This much is based on what we know about the structure of questions and answers.

2. Let us assume the answer should be YES. Then, his entire utterance is as follows: “Yes, I have two sons.” Notice that the resulting discourse is felicitous, with the proposition ‘I have two sons’ as an elaboration of the YES answer.
3. Let us assume the answer should be NO. Then, his entire utterance reads as follows: “No, I have two sons.” This discourse is infelicitous – a contradiction – because having sons entails having children. Therefore, the elliptical answer could not be NO.
4. We can conclude that the elliptical answer to the prosecutor’s question was YES, because only a positive answer coheres with the rest of the discourse.
5. Since the answer to the question can only be understood to be a YES, the next sentence can only be seen as subordinate to the yes answer: an elaboration or an explanation. If this answer can only be regarded as an explanation of the YES answer, it follows that this answer can only be understood as taking the set of sons to be fully overlapping with the set of children. In particular, there cannot be a contrast between the two sets.
6. Thus, if the Speaker B has a daughter, he committed perjury.

I conclude that the appeal to Grice’s maxims does not solve the problem of perjury when the literal truth-value of the sentence is not false. Instead, the discourse analysis proposed in this article allows us to deal with the problem of perjury with indirect answers in a straightforward manner.

5. The Communicative Approach to Perjury

Tiersma (1990: 403–409) proposes that perjury should be about the meaning that is communicated, not the literal meaning of the words – as long as the meaning intended by the defendant himself can be reasonably inferred from the context. In order to figure out if someone committed perjury, one has to “concentrate on how the speaker intends the hearer to understand the sentence” and “there is no further requirement that the speaker intend to mislead”. In other words, he rejects the literal truth approach to perjury: “perjury law should be closely attuned to how witnesses intend their utterances to be understood instead of mechanistically focusing on the meaning of the words used.” He emphasizes that hidden intentions and mental reservations do not play a role in this communicative approach, only the intention of the speaker as can be induced from the context of utterance, in particular the previous questions and answers provided. In the present context, Tiersma concludes that “If Mr. Bronston intended his utterance regarding the company’s bank accounts in Switzerland to communicate that he had never had a personal account there, or knew that it would be so interpreted, he made a false statement under this analysis.”

The Supreme Court, at least the Supreme Court that passed the Bronston resolution, would probably disapprove of Tiersma’s (1990) approach, since it involves a guessing of

the intention of the speaker by the jury, which is what the Supreme Court wants to prevent. The question is not whether this intention can be inferred (I believe it is something that can be done) the question is whether this inference is free of error and interpretation and whether it draws clear lines that sustain legal certainty. I think not. That is the reason why I propose formally to analyze the structure of the discourse in which a statement is assembled, not the intentions of the speaker.

Tiersma himself acknowledges that some scholars might regard that his approach is too fuzzy and impressionistic and does not provide a reliable guide. The literal truth approach at least is clear. He anticipates this complaint and submits the following considerations: (i) the meaning of words is already fuzzy, any dictionary entry has several meanings, and which one is the one being used in a particular sentence requires looking at speakers' intent, anyway; (ii) the literal meaning of a word is an abstraction, based on how speakers use a word, so the notion of communicative intention is already part of the definition of a word. He goes on to argue that "for the purposes of the law of perjury, what people in general would mean by particular words seems a less significant inquiry than what the defendant meant by the words in the specific situation." (1990: 408)

I agree with the reality of these observations. However, one would argue that highlighting the vagueness and abstraction of ordinary language should in fact militate against Tiersma's (1990) approach: if literal truth is already difficult to get at, why add an extra layer of fuzziness around it? This is avoided in the discourse analysis proposed here, in which the intention of the speaker is extracted from the equation from the beginning.

Let us look at an example of Tiersma's applicability: instances in which the perjurious action involves silence or inaction, as in *People v Meza*. Recall that in this case, the members of the jury were asked by the county clerk to raise their hand if they had ever met the defendant. Despite the fact that the defendant was his brother in law, Mr. Meza did not raise his hand. As Tiersma points out, the literal truth theory of perjury would have to let him go free because he literally didn't state anything, true or false. But Tiersma's model can say: his communicative intention when he did not raise his hand is that it would be understood that he didn't know the defendant. (The court of appeal convicted him of perjury).

The SDRT approach presented above is suited to deal with the problem of perjury by silence. The idea here is that the structure of a discourse is analogous to a logical system to the extent that its working is independent of the terms that occupy the nodes of the graph. The county clerk's request is, in fact, a formulaic variation of the YES/NO question and the options provided (raise your hand/do not raise your hand) stand as proxies for an affirmative or negative answer. If we adopt these premises, we can infer that not raising one's hand stands for NO without dwelling on Mr. Meza's communicative intent.

To conclude this section: Tiersma's communicative approach to perjury relies on "speaker's intentions" as they can be inferred from the context of use. I contend that this approach forces us, as the Supreme Court feared, to become mind readers and would create legal insecurity. Instead, the discourse semantics approach defended here relies

on the structure of discourse and the judgments of sentences as being felicitous or not. These judgments do not rely on reading the mind of the speaker but on general properties of discourse structures, which can be inspected by anyone who speaks the language.

6. Strategic Conversations

Asher and Lascarides (2013) also focus their attention on the Bronston case. The intent of this article, however, is not to figure out some way to reach a conclusion regarding the perjuriousness of Bronston's elliptical answer and developing an objective method that can be applied in a variety of cases, as it is here. Rather, their goal is to present a formal model that elucidates the choices that the lawyer and Mr. Bronston have at each fork of the conversation and the utility derived from each choice; the model itself is based on a development of Grice's implicatures and the important notion – absent from Grice's work – of safe implicature. As the introduction states “a theory of dialogue should link discourse interpretation and production to general principles of rational action and decision-making (Asher and Lascarides, 2013: 1). Unlike the current proposal, Asher and Lascarides (2013) maintain the idea that Bronston's answer is indirect, rather than elliptical. As I argued above, only an approach that takes Bronston's answer to be elliptical can help us develop an objective, publicly contrastive method to identify a statement as perjurious. In the end, given the different goals of this article and mine, the articles themselves are unrelated. I present a brief summary of Asher and Lascarides (2013) here for the reader's reference.

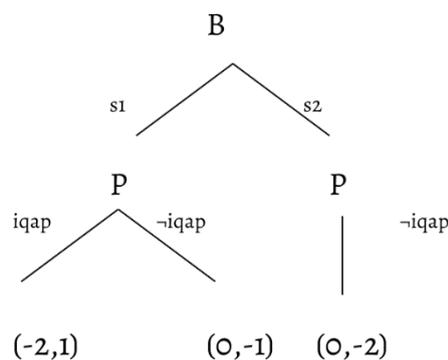
A key notion in their article is strategic conversation: a conversation in which agents' interests do not align. If the speakers' interests do not align, their cooperativity becomes rhetorical cooperativity – a notion independent of Gricean cooperativity, which assumes that the speakers' interests are aligned. The main difference between rhetorical and Gricean cooperativity hinges on the safety of implicatures. In Grice's model, they always are. In a model of strategic conversation, implicatures may not be safe.

Let us turn to the Bronston case. Asher and Lascarides (2013) reason that Mr. Bronston's answer to the prosecutor's question gives rise to an implicature: a negative answer. But this implicature is safe only if we take for granted that he is sincere in a strong cooperativity model. But if we can't assume that Mr. Bronston is sincere, the implicature is defeated. Therefore, Mr. Bronston's answer is equivalent to any random assertion.

Their analysis of the conversation game played by Mr. Bronston and the prosecutor is based on the following concepts: (i) a distinction between public commitment and private attitude; (ii) discourse coherence, which ensures that the answer to a question is somehow related to the question; (iii) a distinction between rhetorical cooperativity and full Gricean cooperativity.

The illustration on the right presents a partial model of Mr. Bronston's answer and the prosecutor's interpretation of it:

B is Mr. Bronston in a deceptive mode (the complete model that Asher and Lascarides (2013) present also considers a truthful Bronston). P is the prosecutor. In response to P's question, B can react in two ways: The signal s_1 is an utterance that is intended to be interpreted as an answer to the question while the signal s_2 is a non-answer or a refusal to answer (in the complete model, the authors also consider s_3 , the possibility that Mr. Bronston utters a direct answer to the question.)



At this point, P can interpret B's reaction in two ways. He can interpret B's answer as an indirect answer (this is the $iqap$ = indirect question answer pair branch). If P takes B's s_1 to be an indirect answer, he infers that that the answer is 'no'. Alternatively, P can interpret B's utterance as a refusal to answer (this is the $-iqap$ branches).

We now calculate the utility of each result for both P and B. This is represented in the pairs of integers at the bottom of the tree. The first integer represents the utility for P and the second one the utility for B. Let us start with the rightmost branch, ($S_2, -iqap$), which has the utility $(0, -2)$: no utility for P, negative utility for B. How did we reach these figures? In ($S_2, -iqap$), B provides a non-answer and P interprets this as refusing to answer. There is no utility for P because he has learned nothing but there is a serious negative utility for B because he intended to mislead but did not succeed; as a consequence, the jury loses confidence.

Let us now consider the branch ($s_1, -iqap$), where B provides an indirect answer but P interprets it is a non-answer. If this were the Bronston case, the lawyer would not accept Mr. Bronston's response as an answer to his question. In situation ($s_1, -iqap$), P has treated B's answer as a non-answer – in other words, we can say that P treats the implicature that arises out of the indirect answer as unsafe. This penalizes B's utility because he has failed to mislead. P remains at 0, because he still does not know the answer. The resulting utility is $(0, -1)$: no utility for P and negative utility for B.

Finally, we look at the utility for the left-most branch: ($s_1, iqap$). Here, P does interpret B's answer as an indirect answer. This is the real-life situation of the Bronston case, where the lawyer took Bronston's answer that his company had a bank account in Zurich as implying that Bronston himself did not. The resulting utility in this situation is $(-2, 1)$. The situation ($s_1, iqap$) penalizes P's utility because he has been misled. It enhances B's utility because he has succeeded in misleading (without making himself vulnerable to an accusation of perjury, because the implicature can be denied.) This is certainly the best outcome for B.

7. Conclusion

I have presented a method based on SDRT that allows us to correctly identify an indirect answer to a question as perjurious even if, on the face of it, the literal meaning of the response is truthful. The method presented here is based only on our intuitive knowledge, available to all English speakers, of discourse structure and discourse felicitousness. It is based on the idea that an indirect answer is a two-node discourse that includes an elliptical polarity answer. It does not require making assumptions regarding the intention of the speaker or appeal to the obscure notion of negative implication and therefore does not negatively affect legal certainty.

How practical is this from the point of view of regular court proceedings? It is not reasonable to ask jurors to study SDRT, but it is reasonable to ask them to look at a sentence or short paragraph, identify the possible ellipsis and let them reach their own conclusion regarding how the information in the ellipsis is to be interpreted so that the discourse is coherent. In the example at hand (1) A2, it is easy to see for anyone who speaks English that a YES response yields an infelicitous discourse whereas a negative answer yields a felicitous one. One can conclude that the unpronounced answer is NO without making conjectures with respect to the speaker's state of mind.

Appendices

Appendix A

Contrast can be formalized using an alternative semantics for focus (for an introduction to the semantics of focus, see Rooth, 2016). The idea is that a phrase α is in a contrasting relationship with a phrase b if the ordinary meaning of b is a member of the focus set of α :

Construe a phrase α as contrasting with a phrase β if $[\beta]_O \in [\alpha]_F \wedge [\beta]_O \neq [\alpha]_O$
 Where $[x]_O$ is the ordinary semantic value of x and $[x]_F$ is the focus meaning of x .

In the example

- (i) John likes sports
 But he hates football.

the ordinary semantic value of 'hates football' is a member of the set that constitutes the focus meaning of 'likes sports', as the following shows:

- (ii) $[\text{sports}]_O = \{ \text{football, basketball, baseball...} \}$
 $[\text{likes sports}]_O = \{ \text{football, basketball, baseball...} \} \in [\text{likes}]_O$
 $[\text{likes sports}]_F = \{ \{ \text{football, basketball, baseball...} \} \in [\text{likes}]_O, \{ \text{football, basketball, baseball...} \}$
 $\in [\text{hates}]_O \dots \}$
 $[\text{hates football}]_O = [\text{football}]_O \in [\text{hates}]_O$
 $[\text{hates football}]_O \in [\text{likes sports}]_F$

Appendix B

We can use alternative semantics for focus (Rooth, 2016) to show formally that Mr. Bronston's answer is in a contrastive relationship with the previous discourse. The contrastive focus on 'company' triggers a set of alternatives of persons or entities that may have bank accounts in Switzerland. Among the members of this set is, of course, Mr. Bronston.

- (iii) Have you ever (had a bank account in Switzerland)?
The company had a bank account in Switzerland.

The focus meaning of 'the company' = [\uparrow the company]_F =
= set of possible entities that may have bank accounts in Switzerland =
= {the company, Mr. Bronston, George Soros, Napoleon Bonaparte ...}
→ [\uparrow Mr. Bronston had a bank account in Switzerland]_O ∈ [\uparrow the company had a bank account
in Switzerland]_F

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