The Rhetorical Structure of Attribution

Andrew Potter
Computer Science & Information Systems Department
University of North Alabama
Florence, Alabama, USA
`apotter1@una.edu`

Abstract

The relational status of ATTRIBUTION in Rhetorical Structure Theory has been a matter of ongoing debate. Although several researchers have weighed in on the topic, and although numerous studies have relied upon attributional structures for their analyses, nothing approaching consensus has emerged. This paper identifies three basic issues that must be resolved to determine the relational status of attributions. These are identified as the Discourse Units Issue, the Nuclearity Issue, and the Relation Identification Issue. These three issues are analyzed from the perspective of classical RST. A finding of this analysis is that the nuclearity and the relational identification of attribution structures are shown to depend on the writer's intended effect, such that attributional relations cannot be considered as a single relation, but rather as attributional instances of other RST relations.

1 Introduction

In the classical formulation of Rhetorical Structure Theory, Mann and Thompson (1987) considered, but decided against, QUOTE as one of the baselined relations. But this rejection of an attribution relation was by no means the final word on the subject, with debate continuing into the most recent formulation of the theory (Stede, Taboada, & Das, 2017). Even so, some basic ideas can be generally agreed upon. It would be generally agreed that if there were an attribution relation, it would likely consist of two parts, consisting of an attribution predicate and its respective attributed material (although terminology for these parts varies from one researcher to the next). It is also generally agreed that if there were, or is to be, an attribution relation, one of these parts would be an RST satellite and the other the nucleus. There is not, however, general agreement as to which one is which (e.g., Carlson & Marcu, 2001; Redeker & Egg, 2006).

Among those accepting that there is an attribution relation, as well as among some of those who reject it, the parts comprising the relation are often identified in terms of syntactical or grammatical features (e.g., Carlson & Marcu, 2001; Redeker & Egg, 2006; Wolf & Gibson, 2005). For example, the part of the putative relation that would provide the attributed material is sometimes delimited, for reasons not entirely forthcoming, to clausal complements, and thereby ruling out other possibilities, such as infinitival complements, except when including them would serve the analyst's purposes.

Alternatively among those who reject the relational status of attribution, the reasoning may be more closely aligned with the fundamentals of classical RST, based on the view that the constituents of attributions, whatever they might be from a syntactical or grammatical view, fail to meet the basic standards for discourse units (e.g., Mann & Thompson, 1987; Stede et al., 2017; Tofiloski, Brooke, & Taboada, 2009). However, given that the standards for what constitutes a discourse unit are somewhat unstable in their own right, this too leaves one on uncertain ground (Degand & Simon, 2009).

So there are three core issues here, and these will be the subject of this paper. The first of these issues may be called the *Discourse Units Issue*, and concerns whether the constituents of attributions can be plausibly construed as discourse units, elementary or otherwise. The second issue is the *Nuclearity Issue*. That is, if attributions are relations, which part is the satellite and which the nucleus? The third issue is the *Relation Identification Issue*. If we accept the finding that attributions are relational, with one part consisting

of a nucleus and the other a satellite, then how do we characterize whatever relations may be found between these parts? What are the constraints, and what are the intended effects? Is there only one ATTRIBUTION relation, or are there other possibilities? Addressing these issues is the objective of this study.

The analytical approach used here is based on classical RST analysis. A key determinant in addressing the issues requires analysis of the writer's *intended effect*, as understood by the analyst. Identifying the writer's intended effect is an essential means for determining relational structure. Because RST is a functional account of text organization, intended effect overrides grammatical analysis, and it is the tie-breaker for resolving otherwise simultaneous analyses. As described by Mann and Thompson (1987), RST provides an account for how intended effects are realized through relational propositions, and thus serves as a general theory of writers' goals, and this is fundamental to understanding the organization of a text.

And yet the primacy of intended effect is scarcely mentioned in discussions of attribution. It is not explicit among the reasons Mann and Thompson (1987) identified for rejecting it. Neither Carlson and Marcu (2001) nor Redeker and Egg (2006) mention it. Wolf and Gibson (2005) do not mention it. Nor do Sanders, Spooren, and Noordman (1992) nor Das, Taboada, and Stede (2017). In an earlier rejection of relational status for attributions, Stede (2008) calls attention to the lack of nuclear constraints and inattention to the intentions of the writer, an assessment shared by da Cunha and Iruskieta (2010), but for the most part intended effect, so fundamental to RST, has been ignored.

In this study, I propose to explore attributional relations from the perspective of intended effect. The claim to be developed is that attributions can be segmented into reporting and reported parts, but that the relation between these two parts will not necessarily be ATTRIBUTION *per se*, but will occur as one among several possible relations, including JUSTIFY, ELABORATION, EVIDENCE, EVALUATION, INTERPRETATION, and CAUSE.

To support this claim, I will revisit a selection of existing RST analyses containing attributions from Carlson and Marcu (2001), Redeker and Egg (2006), Taboada and Hay (2008), and Das and Taboada (2013). In addition, I have provided several original analyses. These analyses will be used to support a discussion of each of the core issues outlined above, i.e., the Discourse Units Issue, the Nuclearity Issue, and the Relation Identification Issue. This investigation is followed by discussion of the consequences of these findings along with some suggestions for further research.

2 Background

Quite a few researchers have voiced opposition to relational status for attribution. As noted in above, a frequent objection is that it fails to meet the inter-clausal criterion for coherence relations (e.g., Das et al., 2017; Mann & Thompson, 1987; Sanders et al., 1992; Stede, 2008). Despite these objections, numerous research projects have adopted ATTRIBUTION as a relation. The primary proponents are Carlson and Marcu (2001), whose *Discourse Tagging Reference Manual* and their *RST Discourse Treebank* (Carlson, Marcu, & Okurowski, 2002) have been influential among RST analysts. Redeker and Egg (2006) have also recognized the ATTRIBUTION relation, although their definition differs significantly from those of Carlson and Marcu (2001). Dahlgren, McDowell, and Stabler (1989) used ATTRIBUTION in their knowledge representation system for tracking knowledge provenance. Radev (2000) used ATTRIBUTION in his adaptation of RST for a theory of cross-document information fusion. Wolf and Gibson (2005), for their annotation of news articles, used ATTRIBUTION to distinguish between multiple and possibly conflicting reports about identical news events. Heerschop et al. (2011) used ATTRIBUTION for performing sentiment analysis. In their study of sentiment-based ranking of blog posts, Chenlo, Hogenboom, and Losada (2013) used the ATTRIBUTION relation and found that it, along with ELABORATION, occurred frequently in the postings studied. Similar results were obtained by Zhang and Liu (2016) in their study of RST relations across multiple levels of discourse unit granularity. Galitsky, Ilvovsky, and Kuznetsov (2018) used ATTRIBUTION in their text classification framework for detecting logical argumentation. The ATTRIBUTION relation has been widely included among the relations detected by RST discourse parsing systems (e.g., Heilman & Sagae, 2015; Hernault, Prendinger, duVerle, & Ishizuka, 2010; Ketui, Theeramunkong, & Onsuwan, 2012; Pardo, Nunes, & Rino, 2004; Soricut & Marcu, 2003). Abdalla, Rudzicz, and

Hirst (2018) found both ATTRIBUTION and ELABORATION to be significant indicators of Alzheimer's disease in speech. This widespread acceptance of the relation indicates an extensive reliance on it. For this reason, if for no other, it is important that concerns about its status should be investigated and perhaps even resolved.

3 The Discourse Units Issue

The reason given by Mann and Thompson (1987) for rejecting attribution as a relation is that it does not constitute a distinct entity but has only a support role, such that no relational proposition arises. Therefore it would suffice to show that relational propositions, i.e., RST relations, do under these circumstances arise, hence requiring segmentation of attribution predicates from their attributed material. Showing how these relations arise is an objective of the analyses presented below, in Section 4.

Stede et al. (2017) reject attribution for syntactical reasons. They argue that the attributed material, i.e., the reported unit is not a discourse unit because it is a clausal complement of the attribution verb. If RST were a theory of grammar, this might seem adequate. But since RST is a functional theory of text organization, this argument seems questionable. And if relational propositions are discoverable between attributions and the attributed material, then the constituents of that relation must be discourse units or text spans, and syntactical concerns are insufficient grounds for rejection. Showing how these relations arise is an objective of the analyses presented below.

4 The Nuclearity Issue

In their definition of ATTRIBUTION, Carlson and Marcu (2001) mark the attribution predicate as the satellite and the attributed material, or reported message, as the nucleus. Thus in the passage,

1) Senator Chris Coons, the Delaware Democrat, told me
2) that his longtime colleague [Senator Lindsey Graham] is "hysterically funny" and "personally engaging."

the first unit would be the satellite and the second would be the nucleus. Redeker and Egg (2006) argue that relegating the attribution predicate to satellite status can lead to misrepresentative or impossible RST analyses, particularly when the

attribution predicate is a cognitive predication that is more salient than the attribution material. They therefore mark the attribution predicate as the nucleus and the clausal complement as the satellite. And yet this too will lead to analyses that are misrepresentative or impossible. Under this regimen, in the above example, the attribution predicate, *Senator Chris Coons, the Delaware Democrat, told me* would be marked as the nucleus, but it is the assessment of Lindsey Graham that is the more salient in this passage.

This conflict is the result of a false dilemma. While attributions are clearly asymmetric, meaning that one constituent will be the nucleus and the other the satellite, there is no single pattern of asymmetry. Sometimes the attribution predicate is the more salient, and sometimes the attributed material is more salient. However, the inference to be made is not that ATTRIBUTION is not a discourse relation, nor is it that nuclearity must be decided on a case by case basis. The inference to be made is that, although attribution is relational, the relation is not necessarily ATTRIBUTION per se. Indeed, ATTRIBUTION is but one among several relations that are used in attributional constructs.

5 The Relation Identification Issue

Identification of attributions in discourse appears to be fairly straightforward, based on the presence of attribution verbs or cognitive predicates. However, this is not to say that recognition of attribution phenomena, even as relational structures, provides any assurance that an attribution is ATTRIBUTION rather than some other relation. Identification of intended effect is essential in determining the specific relation. Without identification of intended effect, it cannot be presumed that there is any relation whatsoever. In the case of attribution, the situation is complicated by the necessity for distinguishing between the writer's intended effect and the source's intended effect. Is the writer merely reporting the attribution phenomena, or is the writer leveraging the attribution source or the attribution material to achieve some change in positive regard? Attributions may be to the first person, second person, or third person. Attributions occur within the context of a discourse, and context must be considered when ascertaining the writer's intended effect. As detailed in the following, attributions are used to

achieve a range of effects, with each of these having a corresponding relational function.

5.1 Attribution as JUSTIFY

Attribution is often used to justify a claim. In Carlson and Marcu's example of ATTRIBUTION, *Analysts estimated that sales at U.S. stores declined in the quarter, too,* it is significant that the analysts who have provided the estimation are presumably financial analysts, not psychoanalysts, software analysts, politicians, or human resource managers. The intended effect of JUSTIFY is to increase the reader's readiness to accept the writer's right to present the situation in the nucleus. Misconstruing the type of analyst would undermine the claim that sales in U.S. stores declined.
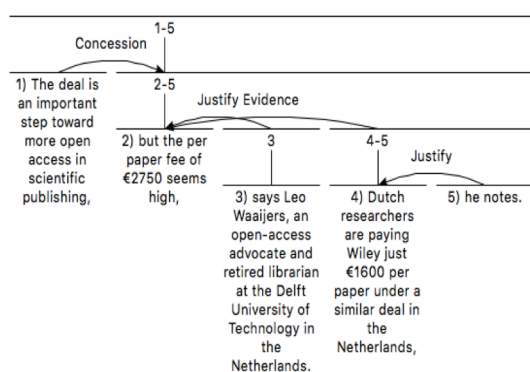

Figure 1: Attribution as JUSTIFY

In the example shown in Figure 1, a writer for *Science Magazine* uses JUSTIFY to present an argument in which the attributed material is interwoven with other elements of the argument. The topic is an open access agreement between Project Deal (a consortium of libraries, universities, and research institutes in Germany) and the Wiley publishing company. Credibility for the claim that the price per paper fee is too high is provided by the qualifications of the attribution source. Further on in the same article, the writer presents a counter-argument and again uses JUSTIFY, this time supporting the position with an attribution to the physicist Gerard Meijer, one of the negotiators for Project Deal. The function of these attributions is not just to give credit to the sources, but to provide authority for claims for which the writer lacks sufficient expertise. That is, the writer is relying on borrowed authority. To assert the two opposing perspectives without attribution would be to risk diminished credibility.

The use of attribution as a form of borrowed authority is standard practice not only in journalism but in other disciplines as well, such as rhetorical studies (Connors, 1999), scientific and technical writing (Cronin & Shaw, 2002), professional health communication (Schryer, Bell, Mian, Spafford, & Lingard, 2011), information science (Halevi & Moed, 2013), anthropology (Goodman, Tomlinson, & Richland, 2014), student writing assignments (Swales, 2014), religious texts (O'Keefe, 2015), and, of course, discourse analysis (Swales, 1986; White, 2004). As observed by Connors (1998), although the use of citation tends to be highly formalized, it is essentially rhetorical in nature.

Attribution as JUSTIFY can also occur in expressions of cognitive acts. For example, when the US politician Kirsten Gillibrand declared that *one of the reasons why I'm running for president is because I truly believe I can bring this country together*, among the intended effects is that the audience should also believe that she can achieve that lofty goal. Designating the relation as JUSTIFY is consistent with the writer's intended effect. To designate the relation as ATTRIBUTION would obscure the identification of intended effect.

5.2 Attribution as EVALUATION and INTERPRETATION

With the EVALUATION relation, the reader recognizes that the satellite assesses the nucleus and recognizes the value it assigns. In the following example, the writer uses a cognitive predicate. The intended effect is that the reader will recognize the pleasure the writer takes in having a new client:

S: We are pleased
N: that you have chosen Young Physical Therapy, Inc. Specialty Center for your physical therapy needs.

Like EVALUATION, INTERPRETATION involves an assessment of the situation presented in the nucleus, but without concern for the writer's positive regard. In the example shown in Figure 2, there are two attributions, one the cause of the other. The first is an example of attribution used for ELABORATION, which will be discussed in Section 5.4. In the second attribution relation, the writer assesses the reaction of a surgical team upon learning of the long term survival of their patient. Although the surgeons' positive regard was likely

enhanced by the surprise, there is no indication that the reported event is concerned with writer's positive regard.
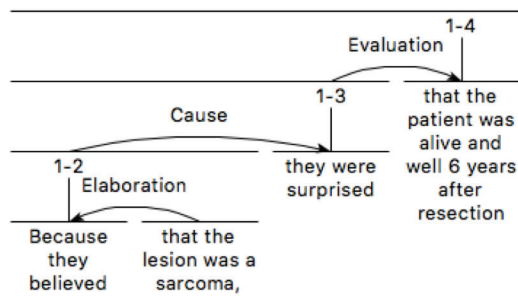

Figure 2: Attribution as ELABORATION and EVALUATION

5.3 Attribution as CAUSE

Sometimes a situation presented in the attributed material is the CAUSE of a cognitive state. These constructs are similar to EVALUATION, except the rhetorical salience is on the attribution predicate. In the example shown in Figure 3, the low ranking assigned to a football team caused outrage among college football experts. Although their outraged response is an evaluation of the ranking, it is their outrage that is the topic of the discourse.
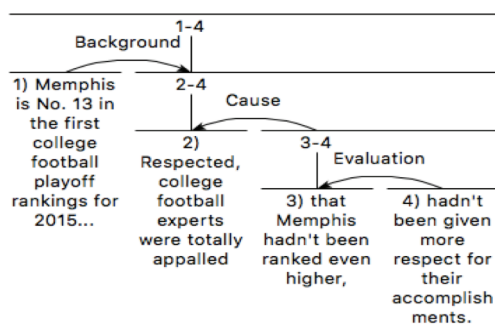

Figure 3: Attribution as CAUSE

5.4 Attribution as ELABORATION

Sometimes the attributed material simply provides more information about the activity identified in the attribution predicate. In the attribution, *Bush indicated there might be "room for flexibility" in a bill*, the significance of context in establishing intended effect becomes apparent. The attribution source is President George H. W. Bush, and the bill he was referring to would have allowed federal funding of abortions for poor women who are victims of rape and incest. The context includes

the observation that *he reiterated his opposition to such funding, but expressed hope of a compromise.* Because the source of the attribution is a US president, who through his political stature and his veto power wields some authority as to whether there is "room for flexibility" in any pending legislation, the attribution might seem to be JUSTIFY. But Bush is not the writer here, and the writer is merely reporting what Bush said during a press conference. There is no indication that the writer's intent was to increase the reader's readiness to accept his or her right to present. Indeed, the press release immediately passes on to other matters. The RST relation in use here is ELABORATION.

Attributions as elaborations also include cognitive states, such as thinking and believing. As shown above in segments 1-2 of Figure 2, the satellite identifies a particular belief attributed to the subject of the nucleus. Presumably this belief or thought is one among many that could be attributed to the surgeons. As a subject matter relation, ELABORATION specifies that the reader will recognize that the satellite provides additional detail for the nucleus. It is not necessary that the reader agree with the additional detail, it is only necessary that the reader agree that, true or false, it is one of the subject's beliefs.

5.5 Attribution as EVIDENCE

In an EVIDENCE relation, the satellite is intended to increase the reader's belief in the nucleus. It is not unusual for an EVIDENCE relation to also meet the criteria for an ELABORATION relation. The difference is one of intended effect. The following example is from Redeker and Egg (2006), who recycled it from Wolf and Gibson (2005), who cite it as example of a text containing cross dependencies, and as such cannot be represented using an RST tree structure:

"Sure I'll be polite," promised one BMW driver who gave his name only as Rudolph, "as long as the trucks and the timid stay out of the left lane."

Redeker and Egg note that, if analyzed in the style of Marcu, the ATTRIBUTION satellite (*promised one BMW driver…*) would interrupt the reported text, so that what should be the nucleus of the ATTRIBUTION is split into separate segments, only one of which can be accessed by the satellite. To address this difficulty, Redeker and Egg reverse

the nuclearity of the ATTRIBUTION relation and avoid the split segments by moving the embedded segments outside of the enclosing text. This practice can be given greater clarity by, in addition to moving the text, relocating them immediately following, and inserting a placeholder at the removal point:

1) "Sure I'll be polite" [3-4],
2) "as long as the trucks and the timid stay out of the left lane."
3) promised one BMW driver
4) who gave his name only as Rudolph.

However, assigning nuclearity to the attribution predicate is at odds with the rhetorical function of the text. The point of the text is the promise itself. The speaker's politeness is contingent upon slower drivers staying out of the way. That Rudolph drives a BMW and refuses to disclose his full name makes the reported warning more believable, so as shown in Figure 4, the EVIDENCE relation is used, with nuclearity assigned to the reported speech. Lest there be any doubt that 'BMW' contributes to the believability of the promise, consider substituting 'Ford Pinto' for it instead. The strength of this evidence is sufficient to assure that the CONDITION relation between segments 1-2 is one of equivalence, not just implication: failure to stay out of the left lane will assuredly result in something other than politeness. The text is an argument, for which the claim is that Rudolph will be polite only to drivers who stay out of his way, and the ground is that not only does he promise as much, but he is also the driver of a fast car and he refuses to be identified.
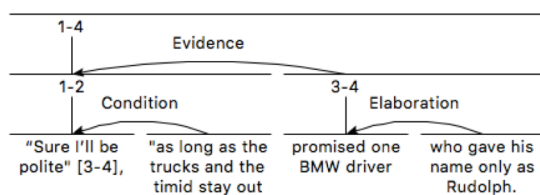

Figure 4: Attribution as EVIDENCE

5.6 Attribution as ATTRIBUTION

As an example of a text problematic for the relational status of ATTRIBUTION, Stede et al. (2017) offer the following:

Katsumoto says to Nathan on the dawn of battle, "You think a man can change his destiny?" to which Cruise replies, "I believe a man does what he can, until his destiny is revealed."

The text comes from a review of the movie *The Last Samurai*, and can be found in the *Simon Fraser University Review Corpus*. Tom Cruise plays the part of Nathan Algren.
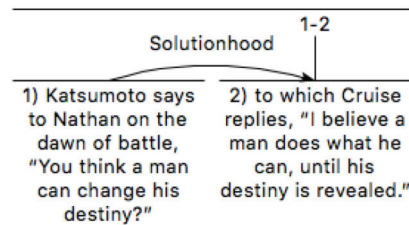

Figure 5. Non-Attributive Analysis

Following the view that attributions should not be treated as distinct discourse entities, Taboada and Hay (2008) analyze this text as shown in Figure 5. Stede et al. (2017) support this view, observing that the reporting verbs are in a relationship to each other, but that also, there is a relation between the content clauses and the reporting verbs. Moreover, it is difficult to say what these relations are, other than that they are attributive. The passage seems to be structurally ambiguous, and the relationships between the attributed material and the attribution predicates seem to be nothing more than attributive. If annotated as attributive, the text would be segmented into four units:

1) Katsumoto says to Nathan on the dawn of battle,
2) "You think a man can change his destiny?"
3) to which Cruise replies,
4) "I believe a man does what he can, until his destiny is revealed."

The structural ambiguity arises with segment 3, *to which Cruise replies*, because it refers both backward (*to which*) and forward (*Cruise replies*). But the SOLUTIONHOOD relation overrides the ambiguity because the question posed by Katsumoto is satisfied not by segment 3, but by the text span 3-4. This sense of the text is captured by the Taboada and Hay (2008) annotation shown above.

As for the possibility of the reporting verbs being nothing more than attributive, if that were so, it might provide support for an ATTRIBUTION relation as defined by Carlson and Marcu, as being reported speech, without regard for intended effect.

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But the intended effect here goes beyond reporting who-said-what. As shown in Figure 6, each of the satellites support the exchange between Katsumoto and Nathan (Cruise) by engaging the reader in the drama (*on the dawn of battle*), making the reader more interested in reading the nuclei. This is akin to the definition of the PREPARATION relation, as defined by Mann and Thompson (1987). However, this relation should not be marked as PREPARATION. It does not conform with the way PREPARATION is usually used, and although, as with PREPARATION, the satellite precedes the nucleus in the text, conformance to that schema is not a reliable expectation. Therefore I suggest that the relation is ATTRIBUTION, but that its definition is not merely attributive.

In this sense the ATTRIBUTION relation could be categorized as a textual relation. Textual relations, as defined by Stede et al. (2017), are relations used
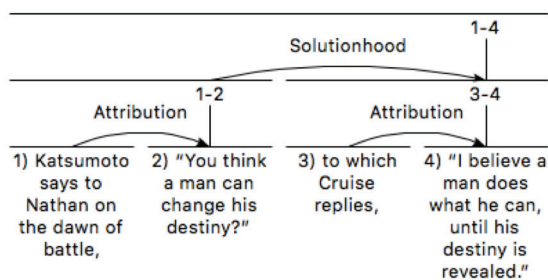

Figure 6: Attribution as ATTRIBUTION

to organize the text and make its understanding easier by providing orienting information. In Stede's classification, textual relations include PREPARATION, RESTATEMENT, and SUMMARY. With that stipulation, we can accept that sometimes an attribution is just an ATTRIBUTION.

5.7 Cognitive States as (Faux) CONCESSION

Expressions of cognitive states are sometimes used to moderate a claim with an indication of uncertainty. This involves an apparent delimitation of the claim as merely a matter of opinion. But the intended effect is not to concede uncertainty upon the claim, but to appear to concede uncertainty in order to moderate the claim's delivery, with the intended effect of assuring acceptance. In the following example from TripAdvisor, the writer tenders some advice to a prospective traveler to the Yucatán Peninsula:

Have you been to Cancun before - if not I think you might want to reconsider using it

as a base. It is heavy traffic, and positively the worst resort I ever went [to] in my life - overdeveloped and literally raping you for every dollar to be had.

This text uses *I think* to soften the advice, ostensibly allowing that *I could be wrong, but*, but the stridency of the evidence used in support of this advice leaves little doubt as to the intended effect. This equivocal use of an expression of cognitive state allows the writer to have it both ways. Similarly, in the movie *Field of Dreams*, when the ghost of baseball legend Shoeless Joe Jackson says to Ray Kinsella,

I think you'd better stay here, Ray

in denying Ray the chance to join the baseball team in the clubhouse, Jackson is not merely expressing an opinion, he is not merely floating an idea for Ray's consideration. He is directing Ray to stay put. That this is a correct interpretation is supported not only by Ray's angry response, but also by the necessity of physically restraining him from going forward: The cognitive predicate has the effect of downtoning the directive while the intent of the directive remains intact.

This use of expressions of cognitive state is particularly valuable for writers of sufficient stature to be recognized as experts in their field. The writer may blend this faux CONCESSION with JUSTIFY. Assured of their authority, the writer can moderate a claim through the rhetorical leavening arising from the disingenuous indication of uncertainty and its resulting informality, while at the same time putting the weight of their authority behind the claim. Thus, in his 1925 presidential address to the Mathematical Association, when mathematician G.H. Hardy wrote that

I think that it is time that teachers of geometry became a little more ambitious

he could easily afford to assume a posture of less than full certainty, knowing that his words would be accorded a respect consistent with his stature. Similarly, in Michael Asimow's letter to the California Common Cause organization, as Vice-Chair and UCLA Law Professor, he could employ the same technique to avoid officiousness when urging the membership to vote against a CCC endorsement of a nuclear freeze initiative:

... I think we will be stronger and more effective if we stick to those issues of governmental structure and process,

broadly defined, that have formed the core of our agenda for years.

And

... I don't think endorsing a specific nuclear freeze proposal is appropriate for CCC.

Analyses of the letter from which these examples are drawn have appeared in numerous publications. It was analyzed as part of a study in relational propositions by Mann and Thompson (1983), and an RST analyses of the text is in several papers by Mann (1984), Mann and Thompson (1985), and Thompson and Mann (1987). It was analyzed from an argumentative perspective by Fries (1987). Seligman (1994) used it to substantiate development of arguments arranged as lattices. It was revisited by Matthiessen (2002a), Matthiessen (2002b), and Halliday and Matthiessen (2004) with lexicogrammatical realizations superimposed on the RST analysis. In none of these studies has this engagingly ambiguous use of language attracted attention. And yet this use of attributions as faux CONCESSION is significant to realization of an intended effect, in this case, buy-in from the membership. And this suggests that not only are attributions relational, but they are central in determining the writer's intended effect.

6   Conclusion

Writers construct attributions with diverse intentions, and this diversity is reflected in the range of RST relations discernible within these constructions. Showing that there are such relations has been an objective of this study. The means for doing so has involved determining whether the constituents of attribution constructions can be plausibly treated as discourse units (the *Discourse Units Issue*), and given that, whether these units can be said to hold satellite-nucleus relations (the *Nuclearity Issue*), and if so, what these relations are (the *Relation Identification Issue*). While this ordering of the research questions may seem like a reasonable way to present them, it is perhaps not the best order in which to answer them. This is because there is an interdependency among the three issues. The units, consisting of the attribution predicates and attributed material, are discourse units by virtue of their participation in discourse relations. That there are attributional discourse relations is

established by the ability to identify applicable relations. The relations identified in this study do not necessarily comprise an exhaustive list. Others may be discovered through further analysis. But such relations as have been discovered are sufficient to satisfy the objectives of the study.

Moreover, I believe the analysis presented here resolves the discrepancy in nuclearity between the approaches presented by Carlson and Marcu (2001) and Redeker and Egg (2006). For most attributions, the nucleus is in the attributed material (ATTRIBUTION, EVIDENCE, EVALUATION, INTERPRETATION, and CONCESSION), but for the ELABORATION and CAUSE relations the nucleus is the attribution predicate. Further, to the extent that the analysis presented here is plausible, some of the criteria employed by Carlson and Marcu for excluding certain constructs as relations may need to be revisited. In particular, their exclusion of infinitival complements from attribution relations seems rhetorically arbitrary. Similarly, the exclusion of attribution predicates that do not identify a source seems unnecessarily restrictive. And passive constructions like *It is hoped that other Japanese would then follow the leader* need not be excluded. Although the apparent anonymity of the expressed hope suggests there could be difficulties in determining whether the writer is among those who hold the attributed material in positive regard, it is clear that someone does. So the relation would be either EVALUATION or INTERPRETATION – that there may be difficulty in choosing between these two is not sufficient to rule that it is neither. And in general for such constructions it would be reasonable to expect that context would be helpful in reaching a determination. In this particular case, the context identifies the parties doing the hoping as unnamed Mexican officials.

The confirmation that attributions are RST relations may seem to be a setup for a long slide down a slippery slope into intraclausal relations. Perhaps, but this descent is already well underway (e.g., de Souza, Scott, & Volpe Nunes, 1989; Garson, 1981; Grabski & Stede, 2006; Hobbs, 2010; Hovy, 1990; Krifka-Dobes & Novak, 1993; Nicholas, 1994; Roch, 2013; Rosner & Stede, 1992; Schauer & Hahn, 2000; van der Vliet, 2010; van der Vliet, Berzlánovich, Bouma, Egg, & Redeker, 2011; Vander Linden, Cumming, & Martin, 1992). Some of this work has been aimed at addressing requirements specific to a particular

application. Other work has been undertaken with the objective of refining or extending general theory.

That RST analyses based on intended effect would yield different results from methods relying on syntactical and algorithmic criteria is unsurprising. Analysis using intended effect involves the use of judgments that, while not arbitrary, if allowed to pass unexplicated, may seem ad hoc. And as Carlson and Marcu (2001) observe, applying such methods to a large corpus is impractical. Even so, for the study of text organization, analyses using intended effect continues to be useful for text and analysis theory development. From such studies emerge new desiderata for development of scalable methods, and thus they are essential to continued progress.

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Appendix. Sources for Original RST Analyses

The nuclearity issue: Senator Chris Coons…

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Attribution as JUSTIFY: The deal is…

Kupferschmidt, K. (2019, February 21). Deal reveals what scientists in Germany are paying for open access. *Science.* http://tinyurl.com/y673es8v

Attribution as JUSTIFY*: One of the reasons why…*

Ryan, J., Mundt, T., & Raphelson, S. (2019, March 7). Democrat Kirsten Gillibrand: 'I truly believe I can bring this country together'. *Here & Now.* http://tinyurl.com/y2znf38c

Attribution as EVALUATION: *Because they…*

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Attribution as EVALUATION: *We are pleased…*

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Attribution as CAUSE: *Respected college football…*

Calkins, G. (2015, November 3). Tigers have become part of the national conversation. *The Commercial Appeal.* http://tinyurl.com/y24287ga

Faux CONCESSION *I think that it is time…*

Hardy, G. H. (1925). What is geometry? *The Mathematical Gazette, 12*(175), 309-316.

Faux CONCESSION: *I think you'd better stay here…*

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