

Corroborative Evidence^{*}

DAVID GODDEN

*Department of Philosophy and Religious Studies
Old Dominion University
Norfolk, Virginia
USA 23529
dgodden@odu.edu*

Godden, D. (2010). Corroborative evidence. In C. Reed and C.W. Tindale (Eds), *Dialectics, dialogue and argumentation: An examination of Douglas Walton's theories of reasoning and argument* (pp. 201-212). London: College Publications.

ABSTRACT: Corroborative evidence can have a dual function in argument whereby not only does it have a primary function of providing direct evidence supporting the main conclusion, but it also has a secondary, bolstering function which increases the probative value of some other piece of evidence in the argument. It has been argued (Redmayne, 2000) that this double function gives rise to the fallacy of double counting whereby the probative weight of evidence is overvalued by counting it twice. Walton has proposed several models of corroborative evidence, each of which seems to accept the fallaciousness of double-counting thereby seeming to deny the dual function of corroborative evidence. Against this view, I argue that the bolstering effect is legitimate, and can be explained by recourse to inference to the best explanation.

KEYWORDS: corroboration; corroborative evidence; Douglas Walton; fallacy of double counting;

INTRODUCTION

Deductively valid arguments are monotonic. That is, supplementing the initial premise set with additional premises cannot weaken the inferential strength of the argument. Indeed, the opposite is also true. Just as the premise-conclusion link in a monotonic argument cannot be weakened with additional information, it cannot be strengthened either.¹

Non-monotonic arguments lack both of these properties. First, the inferential link in non-deductive arguments is defeasible: the truth of their premises does not guarantee the truth of their conclusions. Thus, non-deductive arguments are subject to defeaters of at least two sorts: (i) undercutting defeaters (Pinto's underminers: "additional facts that undermine the inference") and (ii) rebutting defeaters (Pinto's overrides: "additional

^{*} Earlier versions of this paper were presented to the Old Dominion University Philosophy and Religious Studies Departmental Colloquium Series, February 16, 2010, and to the 13th Biennial Conference on Argumentation, Wake Forest University, Winston-Salem, North Carolina, March 19-21, 2010.

¹ This is not to say that additional reasons (even additional deductively valid arguments) supporting the conclusion cannot be provided, only that they are unnecessary in that they neither contribute to the inferential strength of the initial argument, nor do they supplement it with any additional probative weight. Yet such redundant (Schum, 1994, pp. 126 ff.) evidence might be added as a kind of failsafe in the event that some otherwise sufficient reason is defeated or is not accepted by an audience.

Of course, the overall merit of a deductively valid argument can be strengthened by showing that it is sound, and the soundness of valid arguments can be affected by supplementation with additional premises when those added premises go to establishing the truth of the initial premises.

evidence that overrides the inference in question, by supporting the negation of its conclusion”) (Pollock, 1986, pp. 38-39; Pinto, 2001, pp. 102-103). Of this second type, Schum (1994, pp. 121 ff.) notes two different types: (a) contradictory evidence: where two pieces of evidence directly and positively support mutually exclusive events (or contradictory conclusions) and (b) conflicting evidence: where two pieces of evidence directly support different, mutually consistent sub-conclusions which in turn provide contradictory evidence for some main conclusion. Not only are non-deductive arguments subject to weakening and defeat, but they can be strengthened when supplemented with additional reasons where “a reason is the smallest self-standing unit of support for a position” (Blair, 2000).

This paper concerns the strengthening function of corroborative evidence. Walton (2008, 2009) and Walton and Reed (2008) recognized that corroboration poses a unique problem for the theory of evidence. So far as I can tell they are the first to attempt to address this problem, posing alternatives for the accurate modeling and proper evaluation of the evidential structure and operation of corroboration. Typically corroboration has been seen as having the same logical structure as convergence (Cohen, 1977). While this posed some difficulties for probabilistic accounts, it failed to recognize a unique – and uniquely problematic – feature of corroborative evidence. Walton and Reed observe that this feature has to do with the double function corroborative evidence sometimes has, whereby in addition to acting as a reason for some conclusion it also somehow increases the probative weight of some other piece of evidence. This second, ‘bolstering’ function of corroborative evidence distinguishes it from merely convergent evidence.² Yet, it also raises the problem of the fallacy of double counting (Redmayne, 2000). Walton and Reed address this problem and propose a number of alternative solutions for it.

This paper offers a critical examination of those solutions, and proposes an alternative account on which the double function is recognized and explained as non-fallacious.

CORROBORATION

Argument Strength and Strengthening

Informal logic provides three criteria for evaluating the strength of arguments: premise acceptability, premise relevance and inferential sufficiency or goodness (Johnson & Blair, 1994; Govier, 2005, pp. 63-76). Shum (1994, pp. 66 ff.) seems also to have adopted this three-part standard for the evaluation of evidence in law, using the criteria relevance, credibility (acceptability) and force (sufficiency). Following Johnson and Blair I will call this the R.S.A. standard of argument cogency.

Generally speaking, strengthening occurs when the overall probative force of a mass of evidence upon some conclusion is increased by additional evidence. Non-monotonic arguments can be strengthened in several ways.

² For the remainder of this paper, I will use “corroboration” for the specifically narrow phenomenon that occurs when this ‘boosting’ effect is present. Corroborating evidence is the evidence that lends credibility or probative weight to corroborated evidence. Sometimes pieces of evidence can be mutually corroborating.

CORROBORATIVE EVIDENCE

1. *Premise support*: the acceptability of a premise used in the inference can be strengthened or established through the provision of additional reasons which bear upon the truth of that initial premise.³
2. *Convergence of primary reasons*: additional, independent reasons directly relevant to the main conclusion can be added to the argument.⁴

While still the subject of theoretical debate (Goddu, 2007, 2009) strengthening by premise support and convergence is largely well-understood in informal logic, argumentation and epistemology. A third, perhaps dialectical way in which arguments can be strengthened is:

3. *Preemptive rebuttal of defeaters*: additional reasons showing that a potential defeater does not apply or that some critical question can be answered satisfactorily can help to demonstrate that a defeasible warrant or generalization properly applies in some particular instance and can thereby strengthen the inferential connection in an argument.

While there is no standard way of modeling this third form of argument strengthening, Godden and Walton (2007) have demonstrated that critical questions function as commonplaces which test at least one of the R.S.A criteria.

Now, if corroborative evidence is to pose some unique or special problem to the analysis and assessment of arguments it must operate in some way different from these.

Weak Notions of Corroboration

There is a sense in which any piece of negatively relevant evidence, in counting against some conclusion, thereby fails to corroborate any positively relevant evidence (whether known or yet to be discovered) for that conclusion. Thus, there is a sense in which all positively relevant evidence for some conclusion corroborates all other evidence for that conclusion. Indeed, perhaps the weakest notion of corroboration is simply “is not inconsistent with” where any fact which does not count against the truth of some claim thereby corroborates the truth of that claim. Consistency-based notions of corroboration do not even involve argument strengthening. While positive relevance does involve argument strengthening, equating corroboration either with consistency or with positive relevance produces an extremely weak and not especially useful notion of corroboration.

Corroboration: Initial Accounts

Initial accounts of corroboration seem only to capture this loose notion of strengthening as just defined. For example, Cohen (1977) seems to equate corroboration with convergence, writing:

³ This property is shared with deductive arguments, see fn. 1.

⁴ This will strengthen the initial argument only to the extent that the additional reasons are not redundant (Schum, 1994, pp. 126 ff.).

CORROBORATIVE EVIDENCE

It is easy to describe in general terms the logical structure that is common to [testimonial] corroboration and [the] convergence [of circumstantial evidence]. If a conclusion, S, has its probability raised by each of two premises, R_1 and R_2 , when these are considered separately, and R_2 is unconnected with R_1 unless through the truth of S, then the conjunction of R_1 and R_2 makes S more probable than does R_1 alone. (Cohen, 1977, pp. 94-95)

Similarly, in explaining the legal idea of corroboration, Schum (1994, pp. 124 ff.) distinguishes two forms which correspond respectively to the convergent and premise support forms of strengthening just described.

It is quite true that these are entirely legitimate uses of the notion of corroboration, and accounts of the logical function of corroborative evidence in many ordinary cases. Yet, if corroboration only amounts to either convergence or premise support, then I submit that corroborative evidence poses no special problems for the theory of argument and can be dealt with by the analytical and evaluative tools already on hand. In this paper, I attempt to flesh out and specify a stronger, more restrictive sense of corroboration, which poses unique problems for the theory of evidence. This notion will turn on the bolstering effect associated with the fallacy of double counting.

CONVERGENCE AND CORROBORATION

While it is clear that the ordinary and legal sense of corroboration includes convergent arguments, the mere convergence of reasons does not necessarily yield the bolstering effect that is uniquely corroborative.

Consider the following case (adapted from Cohen, 1997, p. 94) in which evidence is convergent – that is, as the mass of evidence accumulates it continually increases the likelihood of the conclusion's truth – but is nevertheless not really corroborative in any strong sense. Recall that there are three essential components to any criminal case: motive, means and opportunity. Clearly, while showing that a suspect had either motive or opportunity goes some way towards demonstrating his guilt, showing that a suspect had both motive and opportunity raises the probability of his guilt substantially more than showing either on its own – provided that the two are independent of each other except through the supposed fact that he committed the crime.

In such a case, each piece of evidence counts as an additional reason for the conclusion and thereby contributes to the overall argument. Yet no piece of evidence increases the probative strength of any of the others. That the suspect had motive as well as opportunity does not make the fact that he had motive count any *more* towards his guilt than it did on its own. The strength of the overall argument is increased with the addition of reasons, but adding reasons does not result in strengthening the probative force of any particular piece of evidence. Arguments having this evidentiary structure are usefully called convergent, but not corroborative.

Convergent, Non-Corroborative Arguments: each new reason strengthens the overall argument without increasing the strength of any single reason.

CORROBORATIVE EVIDENCE

Contrast the above case with the following: several independent witnesses testify to some fact. In this case, not only does each new piece of testimonial evidence count as a primary reason for the conclusion, but it also somehow bolsters the probative value of some other piece of testimony. That several independent witnesses agree in their testimony is a reason to count each individual witness as more reliable than we would otherwise, in addition to providing additional reasons to accept the truth of the facts to which they testify. Arguments having this evidentiary structure are usefully called convergent and corroborative.

Convergent, Corroborative Arguments: at least one reason (the corroborating reason), in addition to strengthening overall argument by providing an independent reason for the main conclusion, also increases the strength of at least one other reason in the argument.⁵

It is this apparent bolstering function of corroborative evidence that poses the real problem for the theory of argument and evidence. I now turn to a consideration of Walton's theory of corroboration specifically as it attempts to model and explain this bolstering effect of corroborative evidence.

WALTON'S MODEL OF CORROBORATION

Walton's (2008) treatment of corroborative evidence is developed in Walton and Reed (2008). While recognizing the convergent component of corroborative evidence (Walton & Reed, pp. 538 ff.; cf. Walton, 2008, pp. 84 ff.), two hypotheses for modeling the bolstering function of corroborative evidence are proposed. Initially, Walton and Reed (pp. 539-540) supposed that corroborating evidence might be modeled as a kind of premise support for the corroborated evidence, such that "the corroborating argument supports one of the premises of the original argument" (Walton & Reed, p. 552; cf. p. 543; cf. Walton, 2008, pp. 84 ff). A variation of this first method was also considered whereby "the corroborating argument proactively rebuts a possible attack on the original argument by answering a critical question" (Walton & Reed, p. 552). Second (Walton & Reed, pp. 544 ff.; cf. Walton, 2008, pp. 300 ff.) was the hypothesis that corroborative evidence could be modeled as a special argumentation scheme which might be called the *corroboration scheme*. Walton (2008, p. 302) is indecisive about which approach is best, and Walton and Reed (2008, p. 552) seem to favor the premise support approach.

Walton (2009) postulates that there are two basic types of corroborative evidence: (a) *convergent corroborative evidence*, where the corroborating evidence gives direct and independent support to the main conclusion, and (b) *supportive corroborative evidence*, where the corroborating evidence supports the inferential link between the corroborated evidence and the primary conclusion.⁶ An important development here is that

⁵ Schum (1994, pp. 125 ff.) recognizes this 'enhancing' or 'synergistic' effect of corroborative evidence, using the name "convergent evidence" for cases where "two or more items of convergent evidence may mean more to us, when considered jointly, than they do if we consider them separately ... [because] for example, that event F, if it occurred, would *enhance* the inferential force of event G on hypotheses {H,H^c}" (p. 126).

⁶ This roughly accords with Redmayne (2000, p. 150) who distinguishes the following three "ways in which one piece of evidence may support another":

corroborative evidence no longer works as a kind of premise support but instead as a kind of auxiliary strengthening of an inferential link. The strengthening function of corroboration is explained in type-(a) cases by the additional primary evidence, and in type-(b) cases by the preemptive or anticipatory rebuttal of a potential defeater.

Problems with Walton's Approach

Despite its pioneering advances in the treatment of corroboration, Walton's various approaches are not without their problems. Consider first the proposal that corroborative evidence should be modeled as its own argumentation scheme: the scheme itself is structured such that all the corroborating claims are linked together to support the conclusion that there is corroborative evidence for some claim. The corroboration scheme then acts in a convergent manner together with each individual piece of corroborated evidence in directly supporting the main conclusion (Walton & Reed, 2008, pp. 544-545; Walton, 2008, p. 303). In this way, the corroboration scheme attempts to capture the strengthening function of corroborative evidence by representing the specifically corroborative value of corroborating evidence.

This approach suffers a number of defects. First, it is not an explanatory model of corroborative evidence. It does not explain why or how corroborative evidence has the bolstering function it does and thereby it does not help the arguer or analyst to identify, understand or evaluate instances of corroboration. Further, as Walton and Reed (p. 552) recognize, convergence with corroborated reasons does not seem to accurately represent the logical operation of the bolstering function provided by corroborating evidence. The specifically corroborative value of corroborative evidence is not a separate and independent line of support for the main conclusion, but is instead an increasing of the degree of support given by each corroborated reason. Nor does the corroboration scheme capture the idea of their second hypothesis – that the inferential strengthening of corroboration occurs through a preemptive foreclosure on some potential defeater of the initial presumptive argument. Finally, given the existing tools for operationalizing the transmission of probability or plausibility through a convergent argument, it is not clear that the boosting effect of corroboration will be properly calculated using the schematic method.

Modeling corroborative evidence as premise support seems to fare no better. Consider a paradigm case of corroboration where the bolstering effect is present: multiple independent witnesses testifying to the same fact. Walton has proposed two premise-types in the corroborated argument that are candidates for the support offered by corroborating reasons: (i) the premise to the effect that Witness 1 has testified that P (Walton & Reed, p. 540), and (ii) where each testimonial reason is modeled using a

-
- (i) *same fact corroboration*: “two pieces of evidence may be corroborative of the same fact, such as when two witnesses both report seeing the same event”;
 - (ii) *convergence*: “two pieces of evidence ... point in the same broad direction”; and
 - (iii) *credibility corroboration*: “one piece of evidence may support the credibility of another, such as when one witness testifies that another witness has a reputation for being truthful.”

To avoid of the fallacy of double counting (discussed below) Redmayne discounts any boost effect of corroborative evidence in the first two ways and rejects any primary effect (i.e., direct evidence to the main conclusion) in the third way. Thus, while there are different ways that corroborative evidence can function in an argument, Redmayne maintains that any single piece of corroborative evidence has only one function.

position to know scheme, a premise to the effect that Witness 1 is telling the truth in testifying that P (Walton 2008, p. 298). (Type-(ii) premises would frequently be implicit but unstated in an initial argument.)

The first proposal clearly fails since the testimony of some additional witness to the effect that P does not provide any evidence for the claim that some initial witness also testified that P. Indeed Walton (2008, pp. 85-86) seems to claim that circumstantial evidence showing that a bullet found in the body of a victim matches a suspect's gun could give premise support to a witness's testimony that he saw the suspect shoot the victim. Yet, the additional testimonial or circumstantial is plainly irrelevant to type-(i) premises. Instead, such additional evidence goes towards showing that P, not that someone reported that P or claimed to have witnessed it.

The second proposal seems to address this problem. Further, it captures the idea that the credibility of a witness – that is the reliability or veracity of a source – is positively affected by corroborating evidence. Thus, there is a sense in which the reliability of testimony or other evidence is strengthened through corroboration. Yet, this proposal still fails to provide any substantive answers concerning the how and why of corroboration. Walton's proposal that a typically enthymematic type-(ii) premise is supported by corroborating evidence fails to explain why such strengthening occurs. What is the evidential rationale for the boost-effect? Also, the operation (or mechanism) by which this strengthening occurs is similarly unexplained. It remains unclear whether the type of strengthening provided by the boost-effect of corroborative evidence is properly modeled as a kind of premise support or, as Walton later suggested, the strengthening of an inferential link.

Virtues and Directions from Walton's Account

Walton's treatment of corroboration recognizes several of its distinguishing features, including: its difference from convergent evidence (Walton & Reed 2008, p. 533), the requirement that corroborative evidence come from independent sources (Walton & Reed, pp. 536, 547 ff.), and the boosting effect that corroborating evidence has on corroborated evidence (Walton & Reed, p. 543).

Further, Walton's hypothesis that this strengthening occurs because of a pre-emptive answering of a critical question applying to the initial, defeasible inference offers an initial explanation of why such a boosting effect occurs. Thus, Walton's account offers the following general picture of how corroboration works: "It fills gaps by anticipating objections, thus making the original argument more plausible than it was before" (Walton & Reed, p. 539). This, I suggest, is a promising hypothesis to which I return at the conclusion of the paper.

DOUBLE COUNTING AND THE CORROBORATION EFFECT

Some have challenged the legitimacy of the bolstering effect of corroborative evidence on the grounds that it gives rise to the fallacy of double counting.

In its simplest versions, the fallacy of double counting involves over-representing the likelihood of some outcome or event. Walton and Reed (2008, p. 532) explain it with the following example: suppose you roll two fair dice, what is the probability that at least

one 5 will turn up? One might think that the probability is $1/3$ ($1/6 + 1/6$). But this answer is mistaken because it double counts the possibility that each die will land showing 5. Thus, in fact, the correct answer is that the probability is only $11/36$.

As it pertains to corroborative evidence, the fallacy of double-counting involves over-valuing some piece of evidence by counting it twice. Thus, it specifically arises from the purported boosting effect of corroborating evidence.

Redmayne's Argument Against Double-Counting Corroborative Evidence

According to Redmayne (2000) the fallacy of double counting occurs whenever some auxiliary, bolstering function is attributed to corroborative evidence in addition to its primary function in the argument.⁷ His solution to the problem is to subtract the value of the 'double-counted' evidence from the total probative weight of the argument.

Redmayne's (p. 151) argument against double-counting seems to work as follows:

- P1. Corroborative evidence has a double function in an argument.
- P2. In accounting for this double-function the probative value of corroborative evidence is double-counted.
- P3. This double-counting is fallacious and overvalues the probative weight of the evidence.
- C. Therefore, the value of double-counted evidence must be subtracted from the overall probative weight of the argument.

Given the case I have attempted to make for the unique bolstering function of corroborative evidence, Premise 3 is the contentious premise in Redmayne's argument. While he seems to take it as manifestly acceptable, he supports it with the following argument:

If you doubt the double-counting problem, consider the following reduction (inflation?) *ad absurdum*. C reports a recovered memory of abuse by D. Witness W also reports recovering a memory that she saw D abuse C. If you think that W's report increases the probative value of C's report without at the same time reducing the probative value to be drawn from W's report, you can obtain infinite probative value from the two reports. First, use W's report to increase the probative value of C's report. Then, use C's report (which now has enhanced probative value) to increase the probative value of W's report (which will now be boosted beyond its original probative value). Next, use W's report to further enhance C's report. And so on, until your degree of belief in the proposition "D abused C" is as high as you like. (Redmayne, 2000, p. 151 fn. 14)

⁷ In contrast to Redmayne's account, Schum (1994, pp. 128 ff.) offers a different, and more agreeable, account of the fallacious double counting of evidence whereby it occurs as a kind of evidential redundancy. Here super-sufficient evidence is offered for a claim and is fallaciously counted as making that claim more certain than is actually supported by the evidence. For example (Schum, p. 129), suppose that there is an abundance of circumstantial evidence that an accused was present at a crime scene. This may result in a 'cumulative redundancy' which may tend to lead an audience to overvalue the presence of the accused at a crime scene as evidence that she committed the crime. Schum's account of double-counting as evidential redundancy, then, does not necessarily discount the dual-function of corroborative evidence.

Thus, Redmayne sees any double counting as producing an iterative regress whereby the probability of any corroborated claim, no matter how initially unlikely, becomes certain.

A Rebuttal of Redmayne's Argument

There are at least two problems with this argument. First, it assumes an iterative application of corroborative evidence. Redmayne's argument works not by making the plausible supposition that there is a single occurrence of the boosting effect. (Surely it is at least plausible that the mutual agreement of the testimony of several independent witnesses boosts the credibility of each individual witness and thereby the probative value of their individual testimonies.) Instead, it works by supposing that this newly-bolstered piece of old evidence can be used again to re-bolster other pieces of corroborated evidence. Redmayne's argument claims that the new credibility-value of each witness's piece of testimony should, in view of its retained agreement with the testimony of the other witnesses, *again* boost the credibility of each individual witness. This is, it assumes that having judged that one witness's testimony is more reliable than we initially took it to be because it accords with the testimony of other witnesses, we should now say that the testimony of those other witnesses is even more reliable because it accords with a more credible (set of) witness(es). Yet surely this is implausible, and is to double count fallaciously. Indeed, it seems to be a case of circular reasoning. In the first instance, the boosting effect is justified because new information (the corroborating evidence) has been discovered, and this new information prompts a revision of the probative value attached to information already possessed. The reason that I found A's testimony to be more credible than I did initially is that I learned about B's testimony and that A's testimony accorded with B's. Redmayne's assumption of iterative application cannot be similarly justified. Following the first occurrence of the boost effect, no new information is discovered or enters into the argument. Instead, the iterative assumption allows an informational echo (rather than a new informational voice) to continue to affect the weighting of evidence. Ultimately, this iterative echo effect allows a piece of evidence to bootstrap its own probative value in a way that is fallaciously circular. Thus, Redmayne's iterative assumption does not merely allow a single piece of evidence to perform several plausibly legitimate functions in an argument; instead it conspicuously allows a single piece of (revalued) evidence to perform *the same* function in an argument several times. So the first problem with Redmayne's argument is that it unacceptably assumes an iterative application of corroborative evidence.

As much as the iterative assumption should be denied, it is not clear that Redmayne's conclusion follows even if it is allowed. Redmayne concludes that iterative double counting will always produce the certainty of the claims involved given enough iterations. A second problem with the argument is that it assumes that the *full* probative weight of bolstered evidence to be re-counted at each iteration, instead of only the specifically bolstered value (i.e., incrementally increased) of that evidence. Yet if it is only the bolstered value of the evidence that is counted, this will become incrementally

smaller at each iteration. While the resulting probability will admittedly be overvalued, this value will, nevertheless reach a limit at something less than certainty depending on what the initial probative value of the evidence was. Thus there is no reason to think that even the iterative application of the boost effect of corroborative evidence necessarily results in the certainty of the initially uncertain claims involved.

Redmayne's Solution and its Failure

Having concluded that allowing the bolstering function of corroborative evidence is a fallacious instance of double-counting, Redmayne (p. 151; quotation amended for generality) proposes the following as a general solution: given any two pieces of evidence, R1 and R2 where one tends to corroborate the other, "if we have taken some probative value from [R1] to add to [R2], we must remember to subtract that same amount when we consider [R2]." Thus, Redmayne's solution to the problem of double-counting is to subtract the value of any double-counted evidence in the final tallying of the probative weight of a mass of evidence. In doing so, it rejects the idea that corroborative evidence performs a double function in argument, and actively negates any value this double function might add to the probative merits of an argument.

On the final analysis, then, when corroborative evidence is properly modeled on Redmayne's account it has the structure either of premise support or of convergence. Redmayne (p. 151) writes:

The logic of corroboration, then, is this. With the exception of credibility corroboration [which acts as a kind of premise support], the corroborating evidence supports the corroborated evidence by increasing the probability of the hypothesis [i.e., conclusion] that both are being used to prove. The corroborating evidence does not increase the probative value of the corroborated evidence. Metaphorically, it adds another strand to the rope; it does not increase the strength of the existing strand[s].

The failure of Redmayne's proposed solution is that it actively negates any bolstering effect that corroboration might produce. That is, it says that we should *not* count a witness's testimony as more credible than we would otherwise because it accords with the testimony of other independent witnesses, while at the same time acknowledging the convergence of reasons offered by multiple independent pieces of testimonial evidence speaking to the same fact. But surely this is wrong. That several independent witnesses agree makes each witness's testimony more credible, as well as lending cumulative support to the final conclusion. The solution is not to ignore, discount or subtract the bolstering effect of corroboration, but instead to find a model that successfully explains it and incorporates it into a working model of argument analysis and evaluation.

A final problem with Walton's account of corroboration, I argue, is that it accepts Redmayne's flawed arguments against the dual function of corroborative evidence, and accepts that double-counting corroborative evidence is always fallacious. For example, Walton (2008, p. 299) writes that "Each of these two methods of diagramming the argument [i.e., as premise support and as a convergence of primary reasons] in this case

[of convergent testimonies] makes the argument inherently reasonable by itself. The problem of double counting comes when the two ways of analyzing the evidence are combined” – i.e., when the dual function of corroborative evidence is modelled.

In the final section of this paper, I offer an explanatory model of corroborative evidence which accounts for its dual function. In doing this, I hope to make a positive case for the thesis that, in addition to its primary effect, the bolstering effect of corroborative evidence is legitimate rather than fallacious.

EXPLAINING CORROBORATION: INFERENCE TO THE BEST EXPLANATION

As it turns out, the structure of the problem presented by corroborative evidence is remarkably similar to a more familiar in epistemology – the problem of coherence as a source of justification. I suggest that the solution to this latter problem may serve as a model for a solution to the former.

Against foundationalism, which claims that some, basic beliefs are inherently justified and that these basic beliefs provide the ultimate justificatory foundations for all other beliefs in the system, coherentism claims that at least sometimes justification arises from the coherence of a set of beliefs with one another (Bonjour, 1985). A significant problem for coherentist epistemologists is explaining how coherence can be a source of justification thereby demonstrating its legitimacy. The problem is an especially acute one, since it is well-known that agreement does not entail truth. As Elgin (2005, p. 159) aptly puts it, “coherence can readily be achieved through epistemically illicit means.” So, how can coherence be indicative of truth?

Coherence occurs in many epistemically relevant contexts, such as when information from our various sensory mechanisms coheres to present a unified multi-sensory picture of the world, or when our memories cohere with circumstantial artifacts (e.g., photographs). C.I. Lewis (1946) considers an example of coherence which closely resembles a stereotypical situation of corroborative evidence. In this case a group of independent but individually unreliable witnesses all give substantially similar accounts of some event, e.g., a theft. Here, each piece of testimony coheres with the others. “Given the unreliability of the witnesses,” Elgin (2005, p. 157) writes, “we might expect them to be wrong about the thief. But we would not expect them to all be wrong in the same way. The fact that they agree needs an explanation.” Now, there are a variety of possible explanations for such agreement. It might be the case that the witnesses are in cahoots and have jointly concocted a fabricated story. Yet knowing that the witnesses are independent eliminates this as a possible explanation. It might be the case that each of the witnesses is somehow mistaken or lying. But this seems unlikely given the similarity of their accounts; it is implausible that they would all be mistaken or lying in the same way. Indeed, there are many possible explanations of the similarity of the testimonies of the witnesses. One of these is that their testimonies are indeed true – that the reason the witnesses have testified as they have is that they did indeed witness what they claim to have, and that things occurred as they witnessed them to have.

Elgin (2005) argues that in this last eventuality, the agreement of the different testimonies is evidence of their individual truth. Thus, she (p. 160) proposes the thesis

that “coherence conduces to epistemic acceptability only when the best explanation of the coherence of a constellation of claims is that they are (at least roughly) true.”⁸

Given the analogousness of corroboration and coherence as problems in the theory of evidence, I propose that inference to the best explanation (IBE) can also provide a solution to the problem of corroborative evidence. Corroborative evidence has a dual function: primarily it provides direct support for some conclusion. In doing so, it makes the conditional probability of the conclusion (given the corroborative evidence) higher than its antecedent probability. This, in turn, gives rise to the auxiliary function of corroborative evidence whereby it increases the probative value of some other piece of corroborated evidence. This bolstering effect is explained by the conditional probability of the corroborated evidence being higher given the truth of the conclusion than the conditional probability of the evidence given the negation of the conclusion. The truth of the conclusion is not evidence for the truth of the corroborated premise, rather it is the best explanation of it. So long as the best explanation of the corroborated evidence is the truth of the conclusion, the bolstering effect of corroborative evidence is entirely legitimate. Since corroborating evidence provides an independent reason to accept that the conclusion is true, the inference to the best explanation provides an additional reason to accept that the corroborated premise is true. Importantly, then, while corroborative evidence can strengthen an argument by lending credibility to a corroborated premise, it does not do so by offering premise support – at least not directly. Rather it is through an entirely separate inference that the corroborated argument is strengthened.

The IBE account of corroborative evidence has a number of explanatory virtues. First, it avoids the problem of double counting while allowing for and explaining the dual effect of corroborative evidence. The same evidence is not counted twice on the IBE theory. Rather, an explanation is provided as to how the additional reason for the main conclusion also indirectly strengthens the corroborated reason. Second it explains why the independence of corroborating evidence is such a crucial feature of it. If it is not known that corroborative evidence is independent, then a viable explanation of the convergence of several pieces of putatively corroborative evidence is their causal interdependence. Unless this explanation can be eliminated, the evidential value of corroborative evidence is nullified because the IBE condition fails to be satisfied. Third, it explains why some evidence, while convergent, is non-corroborative – namely when the truth of the conclusion is not the best explanation of the putatively corroborated evidence. For example, the putative fact that A killed B (as evidenced by A’s opportunity to kill B) is *not* the best explanation of A’s having the motive or means to kill B.

CONCLUSION

I have argued that corroborative evidence has the following dual function: while offering direct support to some conclusion C, corroborative evidence has an auxiliary function of bolstering the probative weight of some additional piece of corroborated evidence. This

⁸ As van Cleve (2005) observes, there remains the issue of whether each independent source must have some positive initial credibility which can be amplified by coherence, or whether coherence alone can produce positive credibility where initially there was none. A moderate foundationalism holds that coherence has an ampliative but not a productive function. While van Cleve summarizes arguments on each side of this issue, I do not here attempt to resolve it.

bolstering effect is explained by using inference to the best explanation. So long as the truth of the conclusion provides the best explanation of the corroborated evidence, and the truth of the conclusion is supported by the corroborating evidence, there is additional reason to find that the corroborated evidence is also true. This account, I argue, recognizes and explains the dual function of corroborative evidence without giving rise to the fallacy of double counting. Furthermore it suggests a way that corroborative evidence can be modeled and evaluated in theories of argument. I conclude by relating the account proposed herein to Walton's account.

Regrettably, Walton and Reed (2008) seem to reject the IBE explanation of corroborative evidence. Considering the example of a jury deliberating upon the mass of evidence in a case, they write:

The jury shouldn't be making up their minds by arguing as follows: what the witness said has now turned out to be true, or at least highly plausible as shown by this new [corroborating] evidence, therefore his [original, corroborated] argument from witness testimony must be correct, or should be taken as stronger than it was before. What seems to be wrong with this argument is that it judges whether an argument is correct based on the conclusion alone rather than on the inferential link between the premises and the conclusion. It reasons backwards that since the conclusion has turned out to be true, the argument must be a good one, either because of the inferential link between the premises and the conclusion, or because one of the premises has been shown to be true. (p. 551)

Walton and Reed's point here is well-taken. Reasoning from the acceptability of a conclusion to the acceptability of a set of reasons for that conclusion is to entirely neglect the evidentiary structure of argument. Yet, Walton and Reed do not consider the evidential structure at work in inference to the best explanation. The reasoning does not proceed from the truth of a conclusion to the acceptability of some premise, but rather from the elimination of all other possible explanations of the truth of the premises except the truth of the conclusion.

In having this structure, the IBE explanation of corroborative evidence bears a close resemblance to Walton and Reed's own thesis that corroborative evidence works by providing pre-emptive rebuttals to potential defeaters of a plausible argument. Walton and Reed suggest that the potential defeaters have the form of critical questions which are pre-emptively answered. Yet because critical questions provide only a commonplace rather than comprehensive inventory of potential defeaters (Godden & Walton, 2007, p. 269), a more general account of pre-emptive rebuttal is desirable. On the IBE account, potential defeaters take the form of alternative explanations of the truth of some premise which do not involve the truth of the conclusion (i.e., counter-examples). Corroborative evidence, in providing independent evidence supporting the truth of the conclusion, helps to show that no counter-examples apply in this instance. By showing that no counter-examples apply, corroborative evidence strengthens the link between the corroborated premise and the conclusion.

So, there is an important congruence between Walton's account and the IBE account proposed here, which helps to isolate a distinctive feature of corroborative evidence, and to explain its unique bolstering function. Indeed, the IBE account accords

CORROBORATIVE EVIDENCE

well with Wigmore's (1913, p. 751) description of the function of corroborative evidence in law as "closing up other possible explanations." Perhaps then a final virtue of the inference to the best explanation account of corroborative evidence is its coherence with other, existing accounts which thereby lend it a degree of corroboration.

REFERENCES

- Blair, J.A. (2000). A theory of normative reasoning schemes. In H.V. Hansen, C.W. Tindale, & E. Sveda (Eds.), *Proceedings of the third OSSA conference: Argumentation at the century's turn*, CD-ROM. St. Catharines, ON: Ontario Society for the Study of Argumentation.
- Boujour, L. (1985). *The structure of empirical knowledge*. Cambridge, MA: Harvard University Press.
- Cleeve, J. van (2005). Why coherence is not enough: A defense of moderate foundationalism. In M. Steup & E. Sosa (Eds.), *Contemporary debates in epistemology* (pp. 168-180). Oxford: Blackwell.
- Cohen, L.J. (1977). *The probable and the provable*. Oxford: Oxford UP.
- Elgin, C.Z. (2005). Non-foundationalist epistemology: Holism, coherence and tenability. In M. Steup & E. Sosa (Eds.), *Contemporary debates in epistemology* (pp. 156-167). Oxford: Blackwell.
- Godden, D.M. & D. Walton. (2007). Advances in the theory of argumentation schemes and critical questions. *Informal Logic*, 27, 267-292.
- Goddu, G. (2007). Walton on argument structure. *Informal Logic*, 27, 5-25.
- Goddu, G. (2009). Against making the linked-convergent distinction. In F.H. van Eemeren & B. Garssen (Eds.), *Pondering on problems of argumentation* (pp. 181-189). Dordrecht: Springer.
- Govier, T. (2005). *A practical study of argument*, 6th ed. Toronto: Thompson-Wadsworth.
- Johnson, R.H. & J.A. Blair. (1994). *Logical self-defense*, 3rd ed. Toronto: McGraw-Hill.
- Lewis, C.I. (1946). *An analysis of knowledge and valuation*. LaSalle, IL: Open Court.
- Pinto, R.C. (2001). Argument schemes and the evaluation of presumptive reasoning. In H.V. Hansen (Ed.), *Argument, inference and dialectic* (pp. 98-104). Dordrecht: Kluwer.
- Pollock, J.L. (1986). *Contemporary theories of knowledge*. Savage, MD: Rowan & Littlefield.
- Redmayne, M. (2000). A corroboration approach to recovered memories of sexual abuse: A note of caution. *Law Quarterly Review*, 116, 147-155.
- Schum, D. (1994). *The Evidential Foundations of Probabilistic Reasoning*. Evanston, IL: Northwestern University Press.
- Walton, D. (2008). *Witness Testimony Evidence: Argumentation, Artificial Intelligence, and Law*. Cambridge: Cambridge University Press.
- Walton, D. (2009). Argument visualization tools for corroborative evidence. *Proceedings of the 2nd International Conference on Evidence Law and Forensic Science, Institute of Evidence Law and Forensic Science, Beijing, 2009*, 32-49.
- Walton, D. & C. Reed. (2008). Evaluating corroborative evidence. *Argumentation*, 22, 531-553.
- Wigmore, J.H. (1913). *The principles of judicial proof as given by logic, psychology and general experience and illustrated in judicial trials*. Boston: Little, Brown & Company.