

Walton on Argument Structure

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Abstract: In previous work I argued against (i) the likelihood of finding a theoretically sound foundation for the linked/convergent distinction and (ii) the utility of the distinction even if a sound theoretical basis could be found. Here I subject Douglas Walton's comprehensive discussion of the linked/convergent distinction found in *Argument Structure: A Pragmatic Theory* to careful scrutiny and argue that at best Walton's theory remains incomplete and that attempts to fill out the details will run afoul of at least one of the problems adduced above—i.e., result in either a theoretically unsound distinction or a theoretically sound, but unnecessary distinction.

Résumé: resume text

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Introduction

Walton's *Argument Structure: A Pragmatic Theory*¹ is necessary reading for anyone interested in understanding the complexities and difficulties of determining an argument's structure. Despite recognizing that various unresolved problems remain, Walton is optimistic about the possibility of resolving these problems and indeed suggests that a suitable means of determining an argument's linked/convergent structure is necessary for adequate argument evaluation. I am much less optimistic, and have in previous work argued against (i) the likelihood of finding a theoretically sound foundation for the linked/convergent distinction and (ii) the utility of the distinction even if a sound theoretical basis could be found. (Goddu 2003; 2007) While that work, of necessity, touched on Walton's, I have yet to assess the degree to which Walton's full theory of argument structure succumbs to these problems.

In section I, I shall, after a brief discussion of the use of the terms, 'linked', 'convergent', etc., present and begin the evaluation of Walton's presupposition

that determining argument structure is a matter of argument identification. I argue that a strong reading of the presupposition that would guarantee the utility of the linked/convergent distinction cannot be sustained. In section 2, I shall present Walton's theory of how to distinguish linked and convergent structures and argue that it is a significantly incomplete theory with substantial challenges to overcome. In section 3, I shall present an alternative interpretation of Walton's theory, but argue that while the alternative interpretation avoids many of the conflicts inherent in Walton's incomplete theory, it undercuts the necessity of making the distinction at all.

1. Preliminaries

The basics of argument structure are easy to grasp. According to most treatments of argument structure, arguments with multiple premises or conclusions are such that the "component propositions are joined together in four types of structures ...—linked, convergent, serial, and divergent"(84).² Walton describes the types, in a quite standard fashion, as follows: "A *linked argument* has more than one premise, where the premises function together to give support to the conclusion"(85). "A convergent argument has more than one premise, where each premise gives an independent reason for accepting the conclusion"(87). "A *serial argument* is composed of two or more stages (sub-arguments) where the conclusion of the first argument also functions as a premise in the second argument"(89). "A *divergent argument* is one in which two separate conclusions are each supported by the same reason"(91).

Walton (among many) talks in terms of linked, convergent, serial, and divergent *arguments*. Given that the structures are distinct, the impression therefore arises that there are, at least, four distinct types of arguments. A better way of talking, however, is in terms of arguments containing linked, convergent, serial, and divergent *structures*. For example, an argument with three premises such that two of the premises work together to support the conclusion and the third is itself an independent reason for the conclusion will contain a linked structure *and* a convergent structure. The argument itself will be neither linked nor convergent, or, if one insists on applying the adjectives to 'argument', it will be both. This non-applicability in the first case and non-exclusiveness in the second is not a problem unless one insists on trying to distinguish all multi-premise *arguments* as linked or convergent. But, given that three premise arguments with two premises working together and the third as an independent reason are, in some sense of 'working together' and 'independent', possible, we need to either recommend against using the terms 'linked', 'convergent', etc. to modify 'argument' or we need more types of arguments. I opt for the former.³

I suspect the tendency to talk in terms of linked or convergent arguments arises from focusing on arguments with two premises and a single conclusion.

But, of course, there are many other possibilities for the number of premises (and, more controversially, the number of conclusions), in which case we can fully expect that a single complicated argument's overall structure could have components that are linked, divergent, serial, etc. Indeed, most treatments of argument structure, including Walton's, presuppose that complicated arguments' structures are just combinations and permutations of the four basic types (along with the single premise/single conclusion case). Given this presupposition, identifying component structures as linked, convergent, etc. rather than the arguments themselves, allows us to maintain both terminological and conceptual elegance.

Given the basic types of argument structures, two sorts of structural features of arguments are allegedly being revealed—(1) when premises are 'working together' or are 'independent' and (2) when propositions are doing double duty. To the best of my knowledge no one has ever doubted the existence or utility of the second structural feature. I shall not be an exception. Determining a sound theoretical basis for the first structural feature, however, has proven extremely vexing. Indeed, the core problem of argument structure is to provide a sound theoretical means of distinguishing cases of linked structure from convergent structure.

At its core, the linked/convergent problem is a partitioning problem—for any given set of premises for a given conclusion, partition the set into subsets such that each subset is an independent reason for the conclusion. If a subset contains more than one premise, then those premises are linked and at least part of the argument's structure is linked. If there are two or more subsets, then there is more than one independent reason for the conclusion and at least part of the argument's structure is convergent. For example, if we agree that an argument with three premises, {p1, p2, p3} should be partitioned as follows {{p1, p2}, {p3}}, then because p1 and p2 are in the same subset, those premises are linked and part of the argument's structure is linked. But because there are two subsets, there are two independent reasons for the conclusion and part of the structure is convergent.⁴

So far, this very articulation of the problem assumes that argument structure is a feature of a given argument that is separable from the identity of that argument. In other words, we can determine what the premises and conclusion are and *then* determine the relational structure of those premises and conclusion. Occasionally Walton writes in a way consistent with this separation assumption. For example, "The focus of this book is directed to the practical task of devising techniques to enable us to identify arguments and analyse their structure" (26). Unfortunately, much more frequently, Walton appears to write in a way that belies the separation assumption. For example, speaking of some of his work prior to *Argument Structure*, he writes, "I did not attempt to tackle the prior problem of identifying arguments through argument diagramming, the technique used in textbooks to model the identification of an argument" (xii). Throughout the book, Walton ties argument structure and argument diagramming to determining argument identity. For example,

he writes, “This book is devoted to argument structure, to systematizing and improving the techniques widely used in informal logic to identify premises and conclusions in an extended sequence of argumentation in a text of discourse” (78) and “The primary function of the argument diagram is to answer the question ‘What is the argument?’, to identify the argument, prior to undertaking the tasks of analyzing and evaluating it”(79).⁵

So is the problem of argument structure separable from the problem of argument identification or not? Before we can fairly answer this question, some further clarity on the issue of argument identity is required. On a quite standard view, to identify an argument is to identify the premises and the conclusion or conclusions. In the case of multiple conclusions, identifying the argument also involves determining which premises go with which conclusions. Walton often talks in terms of the standard view. For example, he begins chapter one with “In this book we will be concerned with problems in attempting to determine whether a given text of discourse contains an argument, and if so, what the components of the argument are—that is, its premises and conclusion” (3). In chapter three, he writes, “To do the job of argument evaluation required for informal logic, we really must presuppose that we already have a method of argument identification that will tell us what the premises and conclusions are in a given case” (81). On the other hand, Walton also writes as follows: “The core of an argument is always a set of inferences or propositions, but the argument is determined by how those inferences are used in a context of dialogue” (40-41). Accordingly, identifying an argument would involve not only identifying premises and conclusions, but identifying how those premise/conclusion complexes are used in the context.

Let the narrow sense of argument identification be identifying the argument core, i.e. the premises and conclusions (and which premises go with which conclusions). Let the broad sense of argument identification be identifying the argument core and how it is used in the context. So is the problem of argument structure integrally tied to the problem of argument identification in either the narrow or the broad sense? I shall begin with the narrow sense.

Given a particular passage, one possible method for producing a diagram of the line of argument contained in the passage would be to, (1), identify and write out all the conclusions. Then, (2), for each conclusion, identify and write out the premises for that conclusion. (3), assign each distinct proposition a number. (4), draw the diagram for each premise/conclusion complex, i.e., determine the linked/convergent structure of each premise/conclusion complex arrived at by the end of step two. Finally, (5), connect the diagrams in cases of overlap, i.e., in cases in which a given proposition is part of two (or more) of the diagrams produced in the previous step. Argument identification, in the narrow sense, was completed in the first two steps while argument structure was determined in steps four and five. Hence, determining an argument’s identity in the narrow sense does not require the determination of the argument’s structure.

Suppose one concedes that determining the identity of the ‘sub-arguments’ of a given passage containing a line of argument is not integrally tied to argument structure, but then argues that the identity of the complex argument, i.e., the whole line, is integrally tied. On the one hand, once every premise/conclusion complex is properly identified and each proposition numbered, there will be exactly one way of correctly connecting the resulting diagrams. The connections can only occur where there are single propositions in different diagrams. Hence, once all the diagrams of all the sub-arguments are determined, the connections are now fixed—to get a different connection would require a change in at least one of the sub-arguments. Given the method of producing diagrams we are discussing, determining serial and divergent structures is merely a matter of connecting diagrams. Hence, since argument connections are fixed by the identity of the sub-arguments and the identity of the sub-arguments is independent of serial and divergent structure, determining a line’s serial and divergent structure is not necessary for identifying that line of argument.⁶

On the other hand, while correctly determining the premises for each conclusion in a given passage will fix the connections between each sub-argument in the line, it will not fix the linked/convergent structure of each sub-argument and so one might argue that, at the very least, the identity of a given line of argument cannot be determined without determining the linked/convergent structure of the sub-arguments. Consider, for example, the following two sub-arguments: (1) George is very tired, (2) the water on the roads has frozen, so (3) George should not drive home tonight, and (4) the temperature has dropped below freezing, so (2) the water on the road has frozen. The connection between the two arguments is fixed at proposition 2 which is doing double duty, but whether the line of argument is

(a) 4 gets us 2, which together with 1 forms a single reason for 3

or

(b) 4 gets us 2, which is an independent reason for 3 and 1 is also an independent reason for 3

is yet to be determined.

Assuming there is a coherent linked/convergent distinction to be made, then clearly we cannot determine whether a given passage contains argument line (a) or argument line (b) without determining the linked/convergent structure of, at least some of, the sub-arguments. But granting this fact does not automatically win the day for advocates of the linked/convergent distinction. After all, if there is no linked/convergent distinction, then argument lines (a) and (b) are not alternative lines of argument, at least given the sub-arguments 1, 2/ 3 and 4/ 2.⁷ At the same time, even if there is a coherent distinction, if we can successfully analyze and evaluate the argument line as merely:

(c) 4 gets us 2, and 2 and 1 get us 3,

then there will be no need to decide between line (a) or line (b) as the ‘correct’, more detailed, expression of line (c). In other words, if there is no utility in producing

lines (a) or (b) instead of merely (c), then the linked/convergent distinction is not necessary for identifying argument lines, at least to the level of specificity required for adequate analysis and evaluation.

Whether the linked/convergent distinction is necessary for argument line identification, therefore, appears to hang on the very possibility and utility of the distinction in the first place. But perhaps one will argue that the identity of all the sub-arguments in a given passage cannot be determined without appeal to the linked/convergent distinction. To see this, consider the following example.

- A (1) Bob was seen at the scene of the crime, holding a smoking gun.
 (2) Bob confessed to the crime. Therefore, (3) Bob committed the crime.⁸

There is one premise/conclusion complex here, but, one might argue, the problem of ‘structure’ is really the problem of whether this passage expresses or contains one or two arguments. Does the passage contain the single argument: 1 and 2, so 3, or does it contain two arguments, *viz.*, 1 so 3 and 2 so 3? Hence, one may have accomplished steps one and two above and determined all the relevant premise/conclusion complexes, but still not determined all the relevant sub-arguments involved, for some of the premise/conclusion complexes might contain more than one argument.

On this interpretation of the problem, all convergent structures in an argument line are instances of multiple arguments sharing a common conclusion.⁹ Hence, once all the arguments contained in a given passage have been identified, the identity of the argument line is now fixed, since the argument line is merely a matter of how the arguments connect as the result of double-duty propositions. Hence, in the case used above, argument line (a) will result just so long as the arguments expressed in the target text are 1, 2 / 3 and 4/ 2 and argument line (b) will result just so long as the arguments expressed in the target text are 1/ 3, 2/ 3 and 4/ 2. But determining which arguments are expressed will require appeal to the linked/convergent distinction and so the distinction is necessary for argument identification.

On this view, every argument is composed of exactly one reason (perhaps comprised of several premises) and one conclusion. Call this the One Reason/One Conclusion, OROC, view of arguments.¹⁰ While there is nothing inherently wrong with OROC, the view is not forced upon us either. Hence, one can accept that *if* one accepts OROC, then one is committed to, assuming the coherence of the linked/convergent distinction, the necessity of the linked/convergent distinction for determining which arguments are present in, at least some, lines of reasoning. But one can simultaneously deny OROC. Walton certainly does not appear to advocate OROC. For example, his very definition of what he calls a convergent argument presupposes that a single argument might involve multiple independent reasons. Also, as we have seen, he describes the problem of argument identification as the problem of determining “what the premises and *conclusions* are in a given case” (81, emphasis added).¹¹ Hence, Walton cannot argue that the very identity of

the sub-arguments in a given text depends upon the linked/convergent distinction without extensively modifying the way he talks about arguments and convergent arguments throughout his book.

To summarize: The identification of an argument, in the narrow sense, depends upon the linked/convergent distinction only if one holds to a One Reason/One Conclusion view of arguments. But this view is a terminological choice that is not forced upon us and *prima facie* does not appear to have any independent theoretical benefits over the more standard view of arguments presupposed by Walton (and many others). The identification of a line of argument, in the narrow sense, depends upon the linked/convergent distinction only if we presuppose the possibility and/or utility of the distinction in the first place. But since the possibility/utility of the distinction is the very issue at hand, it is not a legitimate presupposition for arguing for the claim that argument identity requires the linked/convergent distinction. Hence, there is no adequate reason for holding that argument structure, or more specifically the linked/convergent distinction, is required for determining argument identity as Walton presupposes.

But what of argument identification in the broader sense of argument, i.e., as premises and conclusions used in a particular way in a given context? The answer here depends on what the particular ways of use are and the relationship of these ways to the linked/convergent distinction. Hence, accessing the answer prior to understanding Walton's linked/convergent distinction is impossible and will have to wait until after the presentation of Walton's theory in the next section. Before leaving the issue of the relationship of argument identification and argument structure, however, I shall examine whether what Walton identifies as the three main problems of argument structure give any support to his presupposition that argument structure just is a matter of argument identification.

Walton identifies the three main problems of argument structure as "the problem of linked versus convergent arguments, the problem of distinguishing between arguments and explanations, and the problem of non-explicit premises and conclusions in arguments" (78-79). The first is certainly a problem of structure (indeed in my view it is *the* problem of structure). But as we saw above, whether the linked/convergent distinction is a problem of argument identity remains an open question. Distinguishing arguments from explanations is clearly a problem of argument identification, but not at all clearly a problem of argument structure.¹² Walton advocates a fairly standard view that if the function of the propositions in question is to make an unsettled proposition settled we have an argument and if the function is to 'throw light' on a settled proposition we have an explanation. (See, for example, pages 19, 30, 65, and 74-77.) In other words, how the propositions are being used in the context will determine whether the propositions constitute an argument or an explanation. But nowhere does Walton appeal to structure to make this distinction—instead, what Walton writes strongly suggests that how the propositions are used may be independent of their relational structure. He writes:

... explanations may often share the same kind of underlying sequential structure with argumentsAnd if the argument diagram models the sequence of reasoning, it may well represent the structure of reasons given equally well in both an argument and an explanation. (67)

But if explanations and arguments can share structure, but differ in use, then determining how a group of propositions is used, at least with respect to identifying explanations and arguments, need not require appeal to underlying structure. Hence, the problem of argument/explanation identification is not a problem of structure.

The problem of identifying non-explicit premises and conclusions, the enthymeme problem, is clearly a problem of identity. But again, it is not at all clear that the enthymeme problem is also a problem of structure (even given Walton's claim that solving the enthymeme problem is one of the motivations for requiring the linked/convergent distinction in the first place) (151). I have argued elsewhere that Walton fails to provide sufficient information to determine how appeal to the linked/convergent distinction is supposed to solve the enthymeme problem (Goddu 2007). An argument of similar effect will be offered below after a presentation of Walton's theory of argument structure. I turn to the presentation of that theory now.

2. Walton's Theory

So how ought we distinguish linked and convergent structures? The standard approach is to appeal to some sort of fairly straightforward test. Walton spends much of chapters four and five of *Argument Structure* presenting, classifying, and discussing these various tests. Based on his survey of the literature, Walton classifies the various tests into the following five categories: Falsity/No Support, Falsity/Insufficient Proof, Suspension/No Support, Suspension/Insufficient Proof, and Degree of Support. According to, for example, Suspension/Insufficient Proof tests, a (two-premise) argument has a linked structure if and only if the conclusion is not given enough support if one of the premises is suspended from consideration in the argument. According to Degree of Support tests, (two-premise) arguments have a linked structure if and only if the degree of support the premises provide the conclusion together is much greater than the support each premise provides individually.

During his discussion of these various types of tests, Walton correctly points out that the tests give results that conflict with either each other or our intuitions in a wide variety of cases. While some, such as myself, take this as suggestive that there is no genuine linked/convergent distinction to be made,¹³ Walton instead suggests that "the clue to the effective use of these tests is to realize that they are best seen as ancillary diagnostic indicators only, as opposed to sufficient determinants, to be used only in conjunction with other factors in judging whether an argument in a given case is linked or convergent" (167). So what, according to Walton, are these other factors? Which test, if any, ought we use in conjunction

with these factors? “Our answer will be that there are four kinds of evidence which need to be put together: (1) structural evidence of the type of argument; (2) textual evidence—the indicator-words (3) contextual evidence of the purpose of the discourse; and (4) the Degree Supp. Test” (152).

According to Walton, structural evidence is “the type of reasoning used, and if it has a recognizable inference warrant or argumentation scheme. ... For example, if the argument is deductive, and if two premises fit together in a *modus ponens* form to generate the conclusion, this is good evidence that it is linked” (178). Textual evidence includes indicator words, such as “Here is one reason ..., and if you do not like that one here is another ...” that show “how the arguer evidently means his argument to be taken” (178-79). Contextual evidence for Walton includes the type of dialogue, what stage in the dialogue the argument is supposed to be in, where the argument came from, the ultimate purpose of the argument, and the burden of proof in the given case (179).

Walton calls his theory a pragmatic theory of argument structure and argues that his theory is more flexible and more sensitive to contextual factors than the standard tests provided in the literature. Perhaps, but Walton’s theory, as it currently stands, is at best a proto-theory, at least with regards to the linked/convergent distinction. It is a proto-theory because, as it stands, crucial details are lacking. Firstly, how exactly does the contextual evidence contribute to the determination of the argument’s structure? How is, for example, where the argument came from, i.e. a book, an article, an offhand remark, etc., relevant to the determination of its structure? How is knowing what the “ultimate purpose of the argument was supposed to be” (179) relevant to the determination of the argument’s structure? Indeed, without the details of how context influences argument structure, we remain unable to determine whether argument structure is necessary for determining how a group of propositions is used in a context, i.e., whether argument structure is essential to argument identity in the broad sense articulated in the previous section.

Secondly, and more importantly, how do these pieces of evidence work together in the determination of the argument’s linked/convergent structure? What happens in the case of conflicts of evidence? Can one kind of evidence override the others? For example, Walton writes: “The main clue to judging whether an argument is linked or convergent is the argument’s structure” (160).¹⁴ So perhaps argument form overrides the others. But in the very next sentence he says, “But another main clue is the use of indicator-words” (160). So perhaps form does not override indicator words. To make matters worse, he immediately goes on to write:

However, these two determinants may possibly even conflict with each other ... because the argument structure is an indicator of need—of what is rationally needed to complete an argument of a certain type of structure—whereas the indicator-words are indicators of use—they give evidence as to what the arguer herself thinks about the nature of the sequence of reasoning she has put forth. (160)

So how are conflicts of evidence to be resolved in the process of determining an argument's linked/convergent structure?

Walton gives, at best, a cursory answer to this important question.¹⁵ After the presentation of a case that seems to “put forward an argument in which the evidence is inherently contradictory” (209), Walton writes: “The solution to the problem that we propose here is to view the question as being about the commitment of the speaker who put forward the argument” (210). He continues: “Commitment is determined partly by objective matters of the internal structure of an argument—for example, whether it is a deductive argument of a particular form, like *modus ponens*. But it is also a function of how that argument was used, or put forward, by its proponent in a context of conversation” (210). Unfortunately, Walton provides no further details of how the notion of commitment is supposed to resolve conflicts of evidence. Turning to Walton's and Krabbe's account of commitment does not help either since, firstly, the account does not address the linked/convergent distinction and secondly, the account allows for conflicting commitments. (See Walton and Krabbe 1995). Without more details there is no guarantee that Walton's appeal to commitment has not just removed the conflict from the level of evidence to the level of commitments. For example, if presenting an argument in the form of *modus ponens* incurs a commitment to defending both premises, and an explicit statement “Here is one reason” and “Here is a separate reason” generates a commitment to defend merely one premise, then Walton's case of explicit conflict will not be resolved by appeal to the arguer's commitments, since the conflict will just reappear at the level of commitment. Hence, Walton's appeal to commitment needs further explication in order to support his claim that the problem of conflicting evidence can be resolved.

Until answers to these questions are forthcoming, his current theory is a proto-theory. In addition, there is a problem of relating other aspects of Walton's discussion to Walton's stated theory. While discussing the concepts behind trying to make the distinction, he writes: “And, in general, this is exactly what the linked-convergent distinction should come down to, in a particular case. If Bob would have to attack both premises to make Helen's argument lose its power to make a point in the discussion, then the argument is convergent. If questioning or refuting the one premise is enough, then the argument is linked” (169). Here, Walton seems to be putting forth yet another ‘test’ for the linked/convergent distinction. Later in the chapter, however, Walton writes:

... the key, then, to understanding the *purpose* of determining whether an argument is linked or convergent resides in looking at the argument from a critic's point of view. The critic needs to know whether it is necessary to refute both these premises, or if it is enough to find fault with just one, in order for the whole argument to fall down. (175, emphasis added)

Is ‘what premises need to be refuted’ a test for the distinction or a reason for making the distinction? Perhaps it is both:

This general philosophy behind the linked-convergent distinction could be called ‘the respondent doubt conception’: In order to refute (or successfully cast doubt upon) the argument, does the respondent have to refute (cast doubt upon) both premises, or will attacking one only suffice? This question is what we should generally have in mind as what we are testing for in applying any test of the linked-convergent distinction to a given case. (176)¹⁶

Is ‘what premises need to be refuted’ another test, a reason for making the distinction, or somehow both? If it is another test, what is its relation to Walton’s theory?

Refuting a proto-theory is extremely difficult, since problems adduced to the proto-theory might be easily resolved once the missing details are filled in. Regardless, before I turn to a more complete, Walton-inspired, theory below, I have several brief comments about Walton’s given theory. Firstly, in previous work, I have shown that the Degree of Support Test is not an acceptable indicator of the distinction since it gets even canonical cases wrong.¹⁷ Hence, Walton should drop the Degree of Support Test from his theory. Secondly, regardless of whether we treat ‘what premises need to be refuted’ as a reason or a test, I have shown elsewhere that the form of an argument does not co-vary with ‘what premises need to be refuted’ (Goddu 2007). Hence, the filling out of Walton’s proto-theory will require more conflict resolution than Walton has explicitly acknowledged.

3. A Different (Slightly More Complete) Walton Inspired Theory

Recall Walton’s comment that “in general, this is exactly what the linked-convergent distinction should come down to, in a particular case. If Bob would have to attack both premises to make Helen’s argument lose its power to make a point in the discussion, then the argument is convergent. If questioning or refuting one premise is enough, then the argument is linked” (169). This particular articulation sounds like a test for determining whether a particular case is linked or convergent. Suppose we treat it that way and see how much sense we can make of Walton’s discussion of the linked/convergent distinction in this light.

Suppose one adopts the following as the First Step in formulating the linked/convergent distinction:

For arguments with exactly two premises and one conclusion, the premises are linked if successfully challenging one of the premises is sufficient to make the argument lose its power to make a point in the context and the premises are not linked if successfully challenging both premises is required to make the argument lose its power.

Clearly there are numerous issues that still need to be resolved to fill out the details of First Step. For example, what exactly is meant by “an argument losing its power to make a point”?¹⁸ Given that Walton acknowledges a conceptual affinity between the Suspension/Insufficient Support test and the ‘what premises need to be challenged’ conception of the linked/convergent distinction,¹⁹ suppose we

interpret this ‘losing of power’ as ‘not providing sufficient support for the conclusion’. On this interpretation, the issue is whether sufficient support for the conclusion can be removed via successfully challenging just one premise or if challenging both is required.

Unfortunately, this interpretation makes First Step a variant of the Suspension/Insufficient Support Test, which, Walton argues, has serious flaws. He writes:

... the problem with it, as a useful test, is that the concepts of necessary and sufficient condition employed by it are too vague, inapplicable to real arguments, and potentially ambiguous to be of much help in many cases. It works least well in cases where the premises are insufficient to prove the conclusion, but still give some presumptive weight (although perhaps not very much) to support the conclusion. And it works not at all in cases of ‘bad arguments’ where the premises, or some subset of them, have no weight as evidence. (179-180)

Ironically, the first charge, i.e., vagueness, inapplicability in all real arguments, etc., is a charge that Walton admits has some weight against his own theory. Walton defends against these charges²⁰ and I suspect that the current “what premises need to be challenged” theory can be defended at least as well. At the very least, note that on the assumption that the premises being sufficient support for the conclusion is a requirement of good arguments, then regardless of how vague our accounts of sufficient support are now or how complex and context sensitive an appropriate account of sufficiency will be, an account of sufficiency is necessary for the evaluation of arguments.

The second charge, however, appears more problematic—how are we to apply the test to arguments in which the premises together already fail to sufficiently support the conclusion? In such cases, neither premise needs to be challenged, and so such arguments appear to have neither a linked nor a convergent structure. Merely excluding such cases from consideration is problematic, Walton suggests, because “the assumption that the premises are sufficient for the conclusion in the arguments generally encountered in everyday speech does not seem to be a very plausible one, even for practical purposes” (171).

Perhaps, however, this flaw can be obviated by modifying First Step slightly. Instead of asking what premises need to be challenged to make the support for the conclusion insufficient, ask what premises *would* need to be challenged, *were* the premises sufficient for supporting the conclusion. In other words, regardless of whether the premises are sufficient or not, assume they are and ask what premises need to be challenged to make the support for the conclusion insufficient. Given this suggestion, First Step applies to all (two premise) arguments without exception. However, a serious epistemic problem results.

Consider the following argument:

- B (1) Crocodiles make safe, friendly pets for children. (2) Surfing is popular in Winnipeg in January. (3) Therefore, Aristotle was born in Rome.²¹

Suppose we assume, *contra fact*, that the premises are sufficient to establish the conclusion. Now we ask if merely one or both premises need to be refuted to make the support insufficient. But is it possible to answer this question? Merely assuming the premises are sufficient does not mean we know what the situation would have to be like to make them sufficient. And if we do not know what the situation would have to be like in order for the premises to be sufficient, we cannot judge what will happen to this sufficiency if each premise is removed. Hence, we have achieved universal applicability at the cost of not being, even in principle, in a position to know what the correct answer is in many cases.

Perhaps some other notion of ‘make the argument lose its power’ can be put forth that avoids these problems, but what this notion might plausibly be I have no clue. A better solution, I will suggest below, is to concede the problem, but then rethink the role of the linked/convergent distinction so that the problem becomes irrelevant.

A second issue that needs addressing is generalizing the test to arguments with more than two premises. One plausible Generalization might be as follows:

For arguments with n premises, if successfully challenging one premise is sufficient for the argument to lose its power, then all n premises are linked. If challenging one premise is insufficient, then begin testing each group of $n-1$ premises. If challenging one premise is sufficient for a given group, then those $n-1$ premises are linked and the remaining premise is its own reason. If no $n-1$ group is linked, then begin testing each $n-2$ group. If challenging one premise is sufficient, then that $n-2$ group is linked. Now test the remaining two premises for linkage just as we would an argument with 2 premises. If no $n-2$ group is linked, then.... Etc.

Clearly such a method, for arguments with large numbers of premises and a complicated linked/convergent structure, would be quite tedious. Indeed, so tedious we might wonder whether it is worth the effort. I shall return to this issue below.

Even if one is willing to put up with the cumbersomeness of Generalization, problems remain. For example, consider:

- C
1. P
 2. Q
 3. If P or Q, then R
 4. R.

Firstly, suppose that challenging just premise 3 makes the argument lose its power. But then according to the test, all three premises are linked. Hence, we may need to revise ‘if refuting one premise is sufficient’ to ‘if refuting each premise is sufficient’. Secondly, granting the modification just suggested, refuting just P would not make the argument lose its power, so all three premises are not linked according to the test. Now consider all the groups of two premises, {P, Q}, {P, If P or Q, then R}, {Q, If P or Q, then R}. Regardless of what we say about the {P, Q} case, it appears that *both* of the remaining two subsets are such that refuting each

member is sufficient and so we should say that ‘If P or Q, then R’ is linked to both P and to Q even though all three are not linked. Hence, Generalization would need to be tweaked, since as it is currently stated it assumes that no premise is in more than one linked group.²²

Consider also the following argument:

- D
1. Raven 1 is observed to be black.
 2. Raven 2 is observed to be black.
 - ...
 - 10, 000. Raven 10, 000 is observed to be black
 - 10, 001 The next raven to be observed will be black.

Suppose for the sake of argument that challenging one premise is not enough, but challenging two is. Hence, *all* the $n-2$ groups will satisfy the test and come out as linked such that there would be massive premise overlap in the linked groups. Also, for any linked group, the two remaining premises not in the group, being together insufficient would appear to be neither linked nor convergent. Hence, we might succeed in using the test to determine part of a complex argument’s structure, but then run into Walton’s ‘insufficiency’ problem when trying to account for the remaining structure.

Assume for the moment that First Step can (a) avoid Walton’s objections to the Suspension/Insufficient Proof test and (b) be successfully generalized. What would be the consequences of holding such a view? Firstly, the view would fit fairly well with much of what Walton says about determining whether an argument has a linked/convergent structure. Indeed, if we take Walton strictly at his word about the argument’s form being *evidence* for whether the argument has a linked/convergent structure, then we can see that this will indeed be so. For example, generally, but not always, arguments that satisfy the form of *modus ponens* will have a linked structure.²³ Also, given a variety of contextually determined standards for how many cases of an induction by enumeration are sufficient to establish the conclusion, the linked/convergent structure will vary depending on the standard for sufficiency. Hence, form is a clue for structure, but not a determinant of structure. Similarly, indicator-word evidence, so long as the use of indicator words is based on the arguer correctly believing that the required sufficiency relations hold, will be good evidence for the actual structure of the argument. Finally, burden of proof evidence will be relevant to the actual determination of what grouping of premises are sufficient or not, so any contextual evidence that is relevant to the determination of burdens of proof and standards of sufficient support that must be met will be relevant to the determination of the structure of the argument. Indeed, the contextual evidence, at least insofar as it is accurate evidence for the sufficiency standards in play, becomes the most directly relevant to the determination of structure.

Clearly on this view, whether an argument contains a linked/convergent structures becomes a highly contextualized matter—which groups of premises

will be sufficient to support the conclusion will vary from context to context. (See also Goddu, 2007.) Hence, adopting this view of the linked/convergent distinction is consistent with Walton's claim that: "An argument is linked if the two premises function together, so that one is structurally interlocked with the other to support the conclusion. To the extent that there is evidence of this functional interlocking in a given case, we can say that the argument, *as used in that case*, is linked rather than convergent" (177, emphasis added). In addition, assuming for the moment that there will be various standards of sufficiency and various methods for determining whether a set of premises is sufficient or not, we can also account for Walton's claim that "we should expect that our methods of testing for the linked-convergent distinction to vary in different contexts of dialogue" (167).

At the same time, the 'what premises need to be challenged' approach to the linked/convergent distinction does not fit well with Walton's claims that (a) "the primary function of the argument diagram is to answer the question 'What is the argument?,' to identify the argument, prior to undertaking the tasks of analysing and evaluating it" (79) and (b) "it is clear that informal logic could not get along, or perform its job of evaluating arguments adequately, without this method, or some comparable method of argument-structure identification" (81). To see the problems with these claims, consider the following (schematic) process of moving from text to evaluation:

Step 1: Go through whatever process is necessary to adjudicate that the text in question, in fact, expresses an argument.

Step 2: Given that the text is acceptably judged to express an argument, identify all the conclusions.

Step 3: For each conclusion identify the explicit premises for that conclusion.

Step 4: Produce an initial diagram accounting solely for 'double-duty' propositions.²⁴

Step 5: Starting at the bottom of the diagram, i.e. the ultimate conclusion or point of the text, check each premise/single conclusion complex, extracted from the text for 'sufficiency' by whatever standard is in play.

Step 6: If at any point an answer of insufficient is returned, run the enthymeme 'subroutine' to fill in possible implicit premises. If an answer of insufficient is still returned, stop and judge the argument unsuccessful; otherwise move on to step 7.

Step 7: Again starting from the bottom, test each premise for adequacy by whatever standards of premise adequacy are in play. If at any point a negative answer is returned, return to step 5 and check for sufficiency with any problematic premise removed. If the sufficiency test is negative, either run step 6 again or judge the argument as unsuccessful. If the required sufficiency tests are positive move on to step 8.

Step 8: Do any relevant fallacy checks that are not captured by the previous steps. For example, this may include the conclusion not being what is needed to make the desired point in the context or some sort of begging of the question, e.g., a premise will only meet the acceptability standard if one already accepts the conclusion. If no potential fallacies are found, move to step 10; otherwise move to step 9.

Step 9: For any potential fallacy, determine whether it is problematic by removing the parts of the argument involved in the potential fallacy and then running step 5 again. If the removal of those parts makes some sub-argument below the removed pieces insufficient, then the potential fallacy is problematic and the argument judged unsuccessful. If the removal does not affect sufficiency move to Step 10.

Step 10: Either judge the argument successful or if this cannot be done, for whatever reason—a conclusion is known to be false or a conclusion is in some other way unacceptable, then some further information must be sought to cast doubt on or identify an inadequacy in either (a) support sufficiency, (b) premise adequacy, or (c) freedom from fallacy.

Despite the schematic nature of the process outlined above, at no point in the process is it a requirement that a sub-argument's linked/convergent structure be determined in order to proceed to a subsequent step. Given Walton's concession that arguments and explanations may quite plausibly share their structure, Walton certainly has not established that appeal to the linked/convergent distinction is required in Step 1. No one, including Walton, argues that the distinction is required for implicit (or explicit) conclusion identification, so the distinction is not necessary for Step 2. Step 3 is just identifying explicit premise/conclusion complexes and no one, not even advocates of the One Reason/One Conclusion view of arguments, claims that identifying such complexes requires the distinction. Step 4 is just connecting the previously identified premise/conclusion complexes via the double-duty propositions, which is not the concern of the linked/convergent distinction. Step 5 is checking whether the entire premise set, for each conclusion, provides sufficient support or not—it is not concerned with whether any subgroups would also be sufficient.

Step 6 will vary according to whatever one's preferred enthymeme subroutine is, assuming one even thinks we need such a subroutine.²⁵ Walton's subroutine is essentially a two step routine—first identify potential candidates based on whether their addition would make the support for the conclusion sufficient and then check these candidates against the arguer's set of commitments. "If a needed premise can be justified as one of the arguer's commitments, then it is inserted into the diagram as a non-explicit premise" (217). Walton does tie the first step to identifying potential candidates on the basis of "the inference forms or argumentation schemes that are appropriate for this type of argument" (217). But given that, on the current proposal, argument forms and schemes are merely defeasible evidence for the

underlying structure, relying on form to fill in missing premises does not entail that we are relying on structure to solve the enthymeme problem. Hence, even according to Walton's sketch of the enthymeme subroutine, appeal to the linked/convergent distinction is not necessary.

No one has ever claimed that determining premise adequacy requires appeal to the distinction, so Step 7 does not require making the distinction. According to Walton, however, the fallacy check stage, Step 8, will require appeal to the distinction, though the only concrete example he provides is *petitio principii*, or (a version of) begging the question.²⁶ But given the current 10 steps, this is a mistake. Identifying a potential begging of the question is possible at Step 8 by recognizing a loop structure in the diagram produced at Step 4. The production of the loop diagram does not depend on the linked/convergent distinction, so neither does recognizing a potential case of begging the question. In Step 9 we confirm whether the loop is problematic or not by checking to see what happens if the loop is eliminated. As a result of this check, some of the argument's linked/convergent structure may be revealed. But the key here is that the determination of structure here is a *consequence* of the check performed in Step 9, not a precondition of it. We are literally checking to see whether the group of premises that remain after the loop is eliminated is sufficient. If it is, then the loop is unproblematic, and if it isn't, then the loop is problematic (though an alternative commitment from the arguer may fill in the gap). If the remaining group is sufficient, then we may suspect that part of the argument's structure is convergent (though given argument D above, even this is not guaranteed.) If the remaining group is insufficient, then we may suspect that the group is linked, though again there is no guarantee of this if we adopt the version of First Step (or Generalization) which requires the elimination of each premise in the group to cause insufficiency. Hence, while the completion of Step 9 might allow us to deduce some of the linked/convergent structures, appealing to the distinction is not required to actually perform the tasks required in Step 9. Finally, Step 10 does not *require* appeal to the distinction, though it may turn out that if one chooses to pursue the option of challenging the adequacy of a premise, a map of the sufficiency relations might be useful in picking a key premise. But on the other hand, if the production of this 'sufficiency map' is itself a daunting task, other tools for assisting in picking out a premise to challenge may be more useful.

As long as the 10-Step process outlined above is not significantly flawed, then (a) it is possible to evaluate arguments without appeal to the linked/convergent distinction and (b) linked/convergent structure is not an essential component of argument identification. In fact, the only place the linked/convergent distinction appears is as a possible tool for pursuing one possible strategy contained in Step 10, i.e. well into the argument evaluation stage of the process.

Suppose one concedes that appeal to the linked/convergent distinction is not necessary. One might still argue that the distinction is useful enough to choose

having full determination of the sufficiency substructure occur earlier in the process. How much earlier? Without an alternative solution to the ‘insufficiency problem’, not before Step 6. By the end of Step 6, all arguments with irreparable insufficient support have been judged unacceptable. Hence, placing the determination of an argument’s sufficiency substructure after Step 6 provides a principled basis for not determining the structure of arguments in which the premises clearly do not support the conclusion.²⁷

Is performing the sufficiency substructure step immediately after Step 6 useful enough? This is an open and challenging question. Presumably the benefit accrued by having the sufficiency substructure mapped after Step 6 is that the ill-effect or non-effect of eliminating inadequate premises (Step 7) and fallacious components (Step 9) is obvious from the map. As long as at least one path to the ultimate conclusion remains the eliminations have no effect. But are these benefits sufficient to outweigh the amount of work determination of full substructure is likely to require given a fully adequate generalization of the ‘what premises need to be challenged’ test? Without an adequate generalized linked/convergent test in hand, answering this question is currently impossible. Regardless, given that a method for adequately evaluating arguments is possible that does not appeal to the linked/convergent distinction, the burden of proof is on the advocates of the distinction to show that (a) an adequate method of determining an argument’s linked/convergent structure is possible and (b) even if possible, the benefits of using the method do not outweigh the costs.

Conclusion

Walton’s claims that the linked/convergent distinction is a matter of argument identification and is necessary for adequate argument evaluation have yet to be vindicated. Given that his explicitly stated theory is not yet complete, perhaps the filling out of his proto-theory will vindicate these claims. Filling out the theory, however, remains a daunting task that includes, at the very least, (a) finding a replacement for the Degree of Support Test (or just rejecting it outright) (b) specifying how contextual features are relevant to the determination of an argument’s linked/convergent structure, (c) clarifying the status of the ‘what premises need to be challenged’ conception of the distinction (d) reconciling the conflicts that can arise during attempts to determine said structure, including conflicts between (i) relying on argument form and indicator words, (ii) argument form and the ‘what premises need to be challenged’ conception, and (iii) indicator words and the ‘what premises need to be challenged’ conception.

One way to avoid this daunting task is to elevate the status of the ‘what premises need to be challenged’ conception to the primary test for the linked/convergent distinction and downgrade the other aspects of the theory to defeasible indicators of structure. Unfortunately, new tasks quickly arise including (i) solving the

insufficiency problem and (ii) adequately generalizing the test. At the same time, while the daunting task of filling out the proto-theory is avoided, the original presuppositions about the linked/convergent distinction are shown to be false and the utility of making the distinction called into question. Hence, despite Walton's extensive survey of the problem of argument structure, he has yet to establish both the possibility and utility of a theoretically adequate account of the linked/convergent distinction, let alone the necessity of having such an account.²⁸

Notes

¹All page references in the text are to Walton 1996.

²Other names exist for some of these structures. Most notably, the pragma-dialectic school uses the terms 'coordinate', 'multiple' and 'subordinate', apparently for 'linked', 'convergent', and 'serial' respectively. See, for example, Snoeck Henkeman 2001, p. 101. For an argument that the pragma-dialectic categories are not just linguistic variants, see Freeman 2001.

³Examples of the second strategy can be found in Vorobej 1995 (see also his 2006) and in Hoaglund 2003.

⁴The current articulation allows for the possibility that the linking relation is asymmetric, i.e. that the following might be an allowable partition of a two premise argument: $\{\{p1\}, \{p1, p2\}\}$. In other words, while $p2$ is linked to $p1$, $p1$ is also, by itself, an independent reason for the conclusion. As far as I know, the possibility that the linking relation could be asymmetric is unexplored in the literature. (Though Vorobej's 'supplement' relation can be interpreted as a kind of linking relation and is asymmetrical—see Vorobej 1995).

⁵Hoaglund 2003 also breaks up the stages in terms of "identifying, analyzing, and evaluating an argument" but goes on to assert that "argument diagramming and types fall clearly into the analysis area of our work with argument in natural language" (491).

⁶Part of an argument line's convergent structure might also be determined at the 'double-duty' stage. For example, if a passage contains the same conclusion explicitly provided multiple times, we might end up with several distinct sub-arguments each with the same conclusion. Hence, even if we skipped the step of determining the linked/convergent structure of each sub-argument, we could still end up with an argument line containing a convergent structure. For the record, I have no problem with this sort of 'benign' convergent structure.

⁷Strictly speaking, even without the linked/convergent distinction we could generate argument lines (a) and (b), though not from the same text. Line (a), (without the reference to 1 and 2 forming a single reason) would come from a text that generated sub-arguments 1, 2/3 and 4/2. Line (b) would come from a text that generated sub-arguments: 1/3, 2/3, and 4/2. See note 5 for a reason we might end up with three sub-arguments rather than two, even without the linked/convergent distinction.

⁸This is Walton's Case 4.19, p. 133.

⁹Several advocates of the linked/convergent distinction talk this way. For example, Robert Yanal, writes: "Dependent reasons form one argument; independent reasons form multiple arguments" (Yanal 1991, 139). See also Snoeck Henkemans (2001, 112).

¹⁰Aside: Given OROC, there is a coherent way to talk about linked arguments, i.e., arguments with reasons composed of more than one premise, but absolutely no sense to be made of convergent, divergent, or serial arguments. Argument *pairs*, however, could coherently be called convergent, divergent, serial, etc., just so long as the correct overlap relations held.

¹¹There is a way to modify the OROC to make it consistent with the claim that an argument could have multiple conclusions. Define *simple* arguments as composed of one reason/one conclusion

and let complex arguments be combinations of simple arguments. Granted. But the fact remains that defining simple arguments this way is a terminological choice that is not forced upon us. Hence, the view that determining linked/convergent structure is necessary for determining argument identity is not forced upon us either.

¹²The following is uncontroversial. If the goal is to restrict the method of diagramming, i.e., structure determination and presentation, to only arguments, then the argument/explanation problem needs to be solved as a precondition of solving the structure problem. But this way of making the argument/explanation problem a ‘problem of structure’ still makes the determination of identity prior to the determination of structure.

¹³See also, Conway 1991. Conway’s skepticism is based primarily on what he argues are the inadequacies of textbook proposals from the 1980s. But more sophisticated proposals, including Walton’s, have appeared since which require the attention of any linked/convergent skeptic. For more on the relationship of Conway’s and my work, see Goddu 2003.

¹⁴Presumably by ‘structure’ here he means argument ‘form’ or ‘scheme’ since we are trying to determine the argument’s structure. See also p. 218, where he writes: “Another tool to be applied are argument structures, such as argumentation schemes and deductive argument forms. These *determine* ... instances of linked arguments versus convergent ones.” [Emphasis added.]

¹⁵Similar claims can be found in Vorobej 1998.

¹⁶In Goddu 2007, I interpreted this passage as a reason for making the distinction. This is the standard interpretation. See also Snoeck Henkemans (2001, 123) and Vorobej (1998, 422). Note that Freeman 2001 also offers the “what premises need to be refuted” reason as the primary reason for making the distinction.

¹⁷Goddu, 2003. Note that several examples discussed there show that the Degree of Support Test evidence can conflict with (a) the form of the argument and (b) the ‘what premises need to be refuted’ conception of/reason for the distinction.

¹⁸Other phrases Walton uses include “refute (or successfully cast doubt upon) the argument” (176) and make “the whole argument to fall down.” (175).

¹⁹See pages 168-171, 174-176, but especially p. 181 where he writes: “We find the Susp./Insuf. Prf. test as providing a right-minded contextual framework, and a sensible pragmatic viewpoint on what is meant by the linked-convergent distinction generally.”

²⁰See pages 201-216 for his discussion of these sorts of charges.

²¹This is Walton’s case 4.27, p. 140.

²²If P and Q are not linked, then this example also shows that, given the ‘what premises need to be challenged’ test, the linkage relation is not transitive—i.e., p1 is linked to p3 and p3 is linked to p2, but p1 is not linked to p2.

²³Why not always? P, and if P, then P, so P has the form, but fails to be linked according to the modified version of First Step. P, and if P, then T or not T, so T or not T also appears to fail First Step.

²⁴For ease of presentation, I assume that the text in question contains no ‘benign’ cases of convergence, i.e., cases where, say, because the same conclusion is explicitly stated twice, we end up with multiple arguments for the same conclusion. I have no objection to diagrams produced as a result of this benign kind of convergence, but adding the clauses needed to account for such cases detracts from seeing the point at hand—*viz.*, that we do not need to partition the premise set that is offered for each specific instance of a given conclusion.

²⁵David Hitchcock, for example, might argue that what most people think of as Step 6 should really be part of Step 5, since the issue is not what premises we need to add to make the support for the conclusion sufficient, but rather whether there is a suitable warrant to get from the explicit premises to the given conclusion. See, for example, Hitchcock 1998.

²⁶See especially p. 36.

²⁷If full structure determination is left until after Step 6, Walton still cannot maintain (i) that

linked/convergent structure is a matter of argument identity, since argument evaluation clearly begins as early as Step 5 and (ii) that appeal to the linked/convergent distinction is necessary for resolving enthymemes.

²⁸Thanks are due to two anonymous referees and the guest editor of this special edition for helpful comments.

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