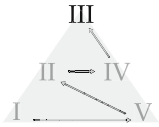
Chapter 10
Stage Three: Hybrid Strategies

10.1 Chapter Overview



We have finally reached the top of the pyramid. Here, at Stage III, we will have full interaction between verifications and falsifications in both the ingredient sense and the assertoric content. I call a strategy that allows us to combine the two notions at the assertoric level a *hybrid strategy*.

I'll be employing the findings of the last chapters, especially the last two on the expanded level. In effect, much of this chapter presents ways in which expanded verificationism and expanded falsificationism can be managed to work alongside each other. In terms of logical systems, this means that I'll be relying on the Nelson models and the two ways in which consequence can be defined on them (verifiability preservation and unfalsifiability preservation).[1]

The three main types of hybrid strategies for the combination of verifications and falsifications in the assertoric content are, as I have already announced before: The *discourse separation strategy*, the *correctness as verifiability and incorrectness as falsifiability* (*CV&IF*) *strategy*, and the *burden of proof distribution strategy*.

Discourse Separation

The discourse separation strategy simply states that both verificationism and falsificationism might have their place in our theory of meaning, albeit in different areas of discourse. There is actually not much more I wish to add to what I have said in the course of this book about this strategy. As I said before, I'm not really sure that we will be able to decide of every statement which area of discourse it should belong to. If we are making discriminations between, among others, mathematical and taste

[1] I'll speak of N_3 and N_{3f}, not meaning to imply that N_{AND} and $N_{\mathrm{AND}f}$ are off the table. It is just that conditionals will not be an issue of importance in this chapter.

A. Kapsner, *Logics and Falsifications*,
Trends in Logic 40, DOI: 10.1007/978-3-319-05206-9_10,

discourse, will the statement "The number of tasty things in the world is a perfect number[2]" belong to the former or the latter?

But *if* we can actually pull off a discourse separation in a clean enough way, then the issue is relatively straightforward. The task will be to inspect each area of discourse and decide which norm of assertion, be it verificationistic, falsificationistic, or possibly one of the hybrids below, fits it best. Again, in practice, this might well turn out to be very hard, but the basic idea is simple.

Correctness as Verifiability and Incorrecteness as Falsifiability

This is the idea that an assertion is correct iff it is verifiable, and incorrect iff it is falsifiable. As you will remember, Dummett explicitly rejected this strategy,[3] so we will have to address his worries. In fact, I'll start this chapter with a restatement of his arguments. Recall that he was worried about (a) statements that were neither correct nor incorrect, and (b) about truth value gaps. Surely, the two worries are related, but the relation is complicated by the many ways in which truth, falsity, verifiability, falsifiability, correctness, and incorrectness might be correlated.

The point of discussing these matters again in this chapter is not just to bring them back to memory: Given that we have seen concrete semantical proposals for Stage II and Stage IV in the last chapters, we now have a much clearer focus on some of these issues, and the appraisal of Dummett's ideas will be much more feasible.

Conversely, this discussion will supply some more philosophical insights about the logics of the last two chapters.

Important Terminological Note:

Up to now, I've been accepting Dummett's claim that there are no gaps between correctness and incorrectness. That is, what I called verificationism is not only the idea that an assertion is correct iff verifiable, but that an assertion is correct iff verifiable *and incorrect otherwise*. Likewise, falsificationism holds that an assertion is incorrect iff falsifiable *and correct otherwise*. In other words, CV&IF is neither a form of verificationism nor a form of falsificationism, because the equivalence of an assertion being correct and its not being incorrect (and of its being incorrect and its not being correct) breaks down.

Burden of Proof Distribution

Finally, I take inspiration from legal discourse and explain how verificationistic and falsificationistic ideas can be combined in the *same* area of discourse. The basic idea will be that for every assertion, the speaker either bears the *burden of proof*, or the audience has to bear it. Depending on where this burden lies, the assertion will be correct iff verifiable or correct iff unfalsifiable.

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[2] A perfect number is a number that is equal to the sum of its proper divisors, such as 6.

[3] Cf. Sect. 5.4.

In court, it is the duty of the judge to keep track of the burden of proof. I'll try to show how it might be possible to allocate it in every day conversations.

10.2 Dummett on Hybrid Strategies

As we know from Part II, Dummett was suspicious of any attempt to construct a hybrid theory of meaning. He believed that this would inevitably lead to situations in which an assertion can come to be understood to be neither correct nor incorrect, in his view an unacceptable result.

10.2.1 Gappy Semantics

Before I turn to this worry, I should remind you of an apparently closely related one: As I mentioned in Sect. 4.6, he was wary of truth value gaps, understood as statements that are neither true nor false.

The reason this second worry should be dealt with before any attempt at a hybrid strategy is made is this: It seems to question choices I made already on the last level of the pyramid. In working with Nelson models, I accept a semantics that ostensively has gaps between its semantic values: At a typical world in a typical Nelson model, there will be statements that are neither verifiable nor falsifiable.

Luckily, it is comparatively easy to bring the gaps between verifiability and falsifiability in harmony with Dummett's view. In Sect. 4.6, we saw that Dummett saw no problem in distinguishing different *ways* in which a statement could be true or false. He allowed that these different kinds of truth and falsity, formally marked by different designated and undesignated values, would have different effects on the behavior of statements in more complex statements. That is, to distinguish between the different values is essential when it comes to the *ingredient sense* of the statement.

Dummett was talking of truth and falsity there, but we may presume that he similarly would not have had problems in discriminating different *ways* in which a statement could be correct or incorrect. And in fact, this is just what we have been doing. Up to now, the gaps in our semantics have been filed either under the label "incorrect" (in verificationistic theories) or the label "correct" (in falsificationistic theories).

10.2.2 Dummett Against In/Correctness Gaps

It would seem that our gappy semantics should not distress Dummett, then. However, there is no doubt that he clearly opposed gaps between correctness and incorrectness.

All the semantic values we choose to distinguish must either stand for a way of being correct or for a way of being incorrect.

We also saw that he thought that only one of the notions, either correctness or incorrectness, could be essential to our grasping of the *assertoric sense* of a statement.[4] The other notion would simply have to be the absence of the substantive one.

The idea that the substantive notion was actually not correctness, but *incorrectness*, was what led us to consider the falsificationistic theories of meaning in general. The argument for the primacy of incorrectness was based on Dummett's claim that finding an assertion to have been made correctly has no systematic effect, while finding it incorrect incurs a stable effect that is systematic enough to base a theory of understanding on: An incorrect assertion has to be retracted by the speaker (at least if challenged to do so by the audience).[5]

Given all this, the following list summarizes my reconstruction of Dummett's falsificationism:

Falsificationism

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Speaker need not retract statement	Correct
Gap	Speaker need not retract statement	Correct
Falsifiable	Speaker must retract statement	Incorrect

The "effect" in the first two rows is actually not an effect at all, but merely the absence of the one systematic effet Dummett allows for.

However, we already in Chap. 5 saw that sometimes less than falsifiability was needed to make a speaker retract an assertion. For example, for a mathematical assertion, it would be enough to point out that there is no (or only an invalid) proof at the speaker's disposal. Thus, the picture for the (more traditional) verificationistic theories is this:

Verificationism

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Speaker need not retract statement	Correct
Gap	Speaker must retract statement	Incorrect
Falsifiable	Speaker must retract statement	Incorrect

In either case, though, it will be enough to have a grasp of either verification conditions (verificationism) or falsification conditions (falsificationism) to grasp the full assertoric sense. Therefore, says Dummett, there is no room for hybrid strategies

[4] The assertoric sense is what decides the adequate use of the statement on its own, not as a constituent of a larger statement.

[5] Cf. Sect. 6.2.

in which assertoric sense is determined by both notions. As we know, the only way in which he considers this could happen is the CV&IF strategy: An assertion is correct iff verifiable, and incorrect iff falsifiable, so that the resulting picture would have to look something like this:

CV&IF (plain)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Speaker need not retract statement	Correct
Gap	?	Neither correct nor incorrect
Falsifiable	Speaker must retract statement	Incorrect

But either, Dummett seems to tell us, verificationism is right, in which case the gap has the systematic effect of forcing the speaker to retract the statement, or falsificationism is right, in which case the gap will reliably lack this effect. In either case, one of the first two tables above will better display what is going on than the third one. We need to investigate which one it will be, that is, decide whether we are verificationists or falsificationists. If we decide to be verificationists, then we will do away with falsifications in the assertoric sense, if we are falsificationists, verifications will be dismissed.

Under this reconstruction, what Dummett's rejection of correctness/incorrectness gaps comes down to is this: There is one single effect the ascertainment of a statement's semantic value may have or fail to have: The speaker can be made to take his assertion back. The distinction between statements that can have this effect and those that do not (which is the distinction between incorrect and correct statements) either coincides with the distinction between unverifiable and verifiable statements or with the distinction between falsifiable and unfalsifiable statements. In either case, there is only room for one central notion in the assertoric content.

This chapter is about how we can avoid this conclusion. One simple idea is to deny that we have to make the choice between verificationism and falsificationism once and for all, that is, for all areas of discourse, we might enter into. This is the underlying idea of the discourse separation strategy: One area will be evaluated verificationistically, another falsificationistically. In general, we will need verifications and falsifications in the assertoric sense of statements to be able to do that.

Such a discourse separation strategy would not be making the central claim of CV&IF, that an assertion is correct *iff* verifiable and incorrect *iff* falsifiable. The "only if" parts of these two biconditionals would not hold. Rather, we would have the following:

> An assertion is correct if it is verifiable, incorrect if it is falsifiable, and if it is neither verifiable nor falsifiable, then it will be correct in a falsificationistic discourse and incorrect in a verificationistic one.[6]

[6] This assumes, for simplicity, that the only options we are allowing for in a single area of discourse are verificationism and falsificationism, disregarding the options yet to come in this chapter.

This seems a sensible strategy; nonetheless, let us for now suppose that we do not employ it in order to see whether we can instead make sense of a global CV&IF strategy after all.

10.3 CV&IF: Additional Effects

We have for a long time been granting Dummett that only the retraction behavior is systematic enough to be the basis of our linguistic understanding. Even when we considered verificationistic theories, we noted that we could view them in this light, by holding that an assertion that is not verifiable needs to be retracted.

That it is unnecessary to draw finer distinctions than *verifiable/not verifiable* or *falsifiable/not falsifiable* at the level of assertoric content seems in large part to be caused by only allowing for this *one* systematic effect. If we could find a systematic effect to go with verifiability/correctness in addition to the one to go with falsifiability/incorrectness, then there would be a strong motivation for a hybrid strategy: It would be necessary to employ both verifications and falsifications in the assertoric sense. The gap in the semantics will mark the absence of both effects.[7]

As it happens, we had already seen Dummett himself suggest such an effect on page 106: If a statement turns out to be correct, then the audience has to openly endorse it as well (or at least, the speaker has an effective means of making them endorse her statement).

CV&IF (with added effect)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	No systematic effect	Neither correct nor incorrect
Falsifiable	Speaker has to retract statement	Incorrect

Let us try this out on an example: Suppose I say "It will rain tomorrow." If there is no way of determining today whether it will rain tomorrow, there is no need for you to take my word, but neither is there a reason for me to retract my statement. But once tomorrow comes, either I'll be able to make you endorse my statement,[8] or you will be able to make me retract it.

[7] Of course, we *might* also find that assertions that are neither correct nor incorrect have some systematic effect. However, the minimal requirement for the necessity of verifications and falsifications in the assertoric content is to have two: One for correct and one for incorrect assertions.

[8] Of course adjusting for indexicality.

10.4 Verificationism and Falsificationism Again (with Additional Effects)

The example and the account of it I just gave actually does not sound all bad. However, the idea that this could be a global account, not one for just *some* areas of discourse, is not very plausible.

This is because we have already seen some cases in which a statement can be incorrect without having to be falsifiable. Take, once again, the mathematician who claimed that Goldbach's conjecture is true, but had no proof (or a faulty proof) of it. The hearers may request that he take back that assertion without themselves being able to falsify it (i.e., without being able to provide a counter example).

On the other hand, it seems that if a statement is falsified, then the speaker has *not only* to withdraw it. When prompted, he even has to assent to the negation of the statement he uttered.[9] The mathematician in the example above is under no obligation to assent to the negation of Goldbach's conjecture.

One might think that this has nothing to do with the assertoric content of the statement, but rather with the ingredient sense: Where the statement is falsified, the negation is assertible. But here we are saying more: The speaker's obligation to endorse the negation of what he said is a consequence of the very same challenge on his assertion that makes him retract the statement.

It seems then that in this, the paradigmatic verificationistic case, there are two types of being incorrect. The first is to utter something unverifiable, which entails the obligation to retract. The second is to utter something falsifiable, which incurs the additional obligation to assert the negation of the statement.[10]

These three cases, correctness and the two types of incorrectness, map neatly onto the values we had seen in our semantics in the last two chapters. A proposition that receives value 1 is verifiable and thus correctly assertible; a truth value gap means that an assertion would be incorrect and should have to be retracted if this is pointed out. If the value is 0, the statement is falsified and the speaker should not only retract his assertion, he should assert the negation of his statement.

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[9] As we are building on logics that have toggle negations, we also have this plausible outcome: If the asserted statement was a negated one, $-A$, the speaker has not only to endorse its negation $--A$ but also the unnegated statement A if his assertion is falsified.

[10] At this point, we may again ask whether it really is the right notion of "verifiable" we are working with. We are, ever since Sect. 3.8.4, assuming that a statement is verifiable iff it is decidable (that is, we have a decision method for it) and, were we to carry out this method, we would find the statement verified.

If a statement is verifiable in this sense, and we have not yet carried out the decision method, should we want to say that the speaker can make the audience accept his statement? I think this is correct, for the way to do it simply is to carry out the decision method and displaying the result. The audience's endorsement is not a direct consequence of his making a correct statement, but he can effect it if he wants to.

Verificationism (with added effects)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	Speaker must retract, but need not assent to negation	Incorrect
Falsifiable	Speaker has to retract statement and concede negation	Incorrect

Again, this is of course presupposing the verificationistic dictum that an assertion is correct iff it is verifiable and incorrect otherwise.

But we can also supply a similar mapping for the falsificationistic theory: Again, a verifiable statement is such that the speaker can make the hearers assent to his assertion. A falsification, likewise, means that the speaker has to assent to the negation of his statement. So far, everything is just as in the verificationistic case. But the gap, of course, means that the asserted statement is, at least for now, correct. However, just as there was a difference between the two kinds of incorrectness in the verificationistic case, here we see a difference in the two ways a statement can be correct. If such a statement is correct only because it cannot be falsified, and not because it can be verified, then the speaker need not retract it. However, the further consequence we see in the case where the statement is verified, viz. that the audience has to endorse the statement in question, is absent here.

I might say that spinach is tasty and be correct in saying so, but you still would not have to agree that spinach is tasty. In fact, you might correctly assert that spinach is not tasty. So, if we entertain falsificationism as a possible norm of assertion, it seems that not in all cases, a correct assertion will have the positive consequence we are considering, viz. that the audience will have to endorse the asserted statement. It is only a consequence of those correct assertions that are correct because the statement is verified.[11]

Here, then, we have the following trichotomy in the case of a falsificationistic norm of assertion:

Falsificationism (with added effects)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	Speaker need not retract, but hearers do not have to endorse statement	Correct
Falsifiable	Speaker has to retract statement and concede negation	Incorrect

10.5 A Tripartite Setup

Now, let us suppose that we want to use a discourse separation strategy that explains some areas of discourse verificationistically (such as mathematical talk), some

[11] If what I have said earlier about taste statements and about expanded falsificationistic meaning theories is right, then "Bile is not tasty" would be such a verified statement.

falsificationistically (such as taste talk) and all the rest via CV&IF. In the last list for the CV&IF strategy on page 180, we had not yet filled in the stronger negative effect of a falsification:

CV&IF (w/ added strong negative effect)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	No systematic effect	Neither correct nor incorrect
Falsifiable	Speaker has to retract statement and concede negation	Incorrect

Now, one might think that this is actually just a terminological variation of the last list, the one for falsificationism. One of the cases we chose to call a *correct* statement in the falsificationistic theory is now called *neither correct nor incorrect*. Whereas I said there that the speaker need not retract his statement and the hearers do not have to accept the statement, I here write that the statement has no systematic effect, which seems to come to the same thing.

In fact, though, it *does not* come to the same thing. The crucial difference lies in the effect that has been our main focus all along: The obligation to retract.

It is a scopal difference between "systematically no effect" and "no systematic effect." While falsificationism tells us that an undecidable statement *lacks, quite systematically, the effect* that the speaker has to withdraw the assertion, in the CV&IF cases, we merely find that the obligation to retract is *not a systematic effect*. Those assertions that would come out neither correct nor incorrect *might* have no effect, but they *might* also have the effect that the speaker has to retract the statement. This will depend on the context of the assertion. Consider the following example:

While on holiday, we drive across the Golden Gate bridge. I say to you: "This bridge will not break down in a hundred years." I have no evidence for this that would add up to a verification, but you have no counter evidence either, and my assertion is allowed to stand.

Now consider Mr. Johnson, an engineer hired by the city of San Francisco to check the safety of the bridge. After some time and having received a large sum of money, Mr. Johnson declares: "This bridge will not break down in a hundred years." If it turns out that he has not enough evidence to back up this claim, that he maybe even did not make any measurements and calculations, his employers will certainly be able to make him take back his assertion.

I think that it would be very implausible to claim that what we are dealing with here are two distinct areas of discourse. The difference, rather, seems to lie in features of the context, in this case *who* made the assertion in *which* kind of circumstances.

So, a more explicit list for CV&IF to use alongside the verificationistic and the falsificationistic one would look like this:

CV&IF (elaborate version)

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	Hearers do not have to endorse statement Speaker does not have to endorse negation Speaker might have to retract statement (depending on context)	Neither correct nor incorrect
Falsifiable	Speaker has to concede the negation	Incorrect

I take the resulting tripartite picture to be mildly satisfying. However, it would be *much more* satisfying if we could get a grip on which features of context decide how gaps are to be evaluated and describe their effects in a systematic way.

10.6 Unifying the Account

Indeed, if we could do this, we could unify our account of verificationistic, falsificationistic, and other areas of discourse. Note that the Golden Gate examples could have been described in the following way: The first assertion is judged according to the verificationistic norm, the second one according to the falsificationistic one. The only difference to the earlier description is this: Above, we called both assertions *neither correct nor incorrect*, now the first one would come out *correct* and the second one *incorrect*. The predicted effects, however, are exactly the same: If the statement is undecidable, then in the first example, the hearer does not have to accept the statement, and the speaker does not have to retract it. In the second example, the speaker can be made to retract the assertion, but does not have to endorse the negation.

Seen from this alternative perspective, what we are hoping for is this: A method of establishing whether a given assertion should be judged according to the verificationistic or the falsificationistic standard, given the context and the type of utterance. Sometimes, it will be enough to know what the assertion is about (mathematics, taste talk), sometimes more information will be needed.

The result would be this:

Unified account

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	Hearers do not have to endorse statement	Correct or incorrect (depending on context)
	Speaker does not have to endorse negation	
	Speaker might have to retract statement, *depending on context in a systematic way*	
Falsifiable	Speaker has to concede the negation	Incorrect

I'll try to get a grip on this picture in the next section. The conceptual tool that I'll employ is the *burden of proof*. Whether an undecidable assertion has to be retracted depends on whether or not the speaker has to bear the burden of proof. As I mentioned quite a few times[12], the blueprint for the management of the distribution of the burden of proof is legal discourse.

10.7 Burden of Proof Distribution

Occasionally, there is talk of "the burden of proof" in all kinds of discussions and disputes, but nowhere is the concept more explicitly dealt with than in legal theory. To know where the burden of proof (BoP) lies is essential to adjudicate between two opposing parties. In countries where a lay jury will give the final verdict, the explanation of the concept of the BoP is an important part of the instructions the jurors receive before the trial.

In criminal cases, the situation is especially clear. From the outset, the defendant enjoys the *presumption of innocence*: the prosecution has to prove his guilt; if they fail to do so, the defendant will go free. Both his testimony and his plea (we assume he pleads "Not guilty") will stand as long as what he says is not disproven.

The presumption of innocence represents an assessment of the risks of an erroneous verdict. A society that would rather let a guilty man go free than to convict an innocent one will have the presumption of innocence built into its legislature in some form.

As L. Laudan writes, it follows almost automatically from the presumption of innocence that the prosecution has to bear the BoP:

> If the state bears the full burden of proof, then, of course, one might say, the defendant is presumed innocent. Contrariwise, if the defendant is genuinely presumed innocent, then it naturally follows that the state must defeat that presumption by proving his guilt (Laudan 2006, p. 90).

However, the BoP does not necessarily have to stay on the prosecution. The course of a trial might shift the BoP away from them and onto the defense. For example, if

[12] E.g., in Sect. 6.6.

the defendant pleads *not guilty on grounds of insanity*, then, depending on country and state, he might have to bear the burden of proof for this claim.[13] It is the task of the judge to keep track of, decide on, and inform the jury about the BoP.

I submit that, in view of what we have seen in the earlier parts of this work, it is quite natural to say this about the statements defense and prosecution make: If a speaker has to bear the BoP, then his assertions will be judged according to the verificationistic standard; but if the burden is on the other party, then the assertions will be judged according to the falsificationistic standard.

10.7.1 Taking the BoP Outside of Legal Discourse

This might make for a promising start on a model of legal discourse. We might employ the discourse separation strategy at this point and claim a small victory. But of course the real aim is to step beyond the boundary of legal discourse and claim that similar mechanisms are at work outside court as well.

The adaptation is not perfectly straightforward, however. As we have seen, there are clear rules for the distribution of the burden of proof at court. There are default distributions and rules for when a shift occurs. Most importantly, there is always an arbiter present who will enforce these rules or make decisions about the BoP in cases where the rules give out. This arbiter is the judge.

Now, problematically, such an arbiter is missing in most situations outside of court. This is actually one of the reasons to take an issue to a civil court. For example, at the heart of many libel cases is the question whether a speaker had to bear the BoP when making certain assertions.[14]

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[13] In many states of the USA, this shift of the BoP was legislated after a famous case in 1982. John Hinckley, a young man who was desperate to make a favorable impression on actress Jody Foster, tried to do so by shooting president Reagan and members of his security staff. His plea of not guilty on grounds of insanity was successful, not because he could prove his insanity, but because the prosecution could not prove his *sanity*. After this unpopular outcome, many states changed their laws so that a man in similar circumstances would be convicted.

[14] Currently, there is a controversy about the British libel laws that focuses exactly on the issue of the distribution of the burden of proof. The case that put this law into the limelight is between well-known science author S. Singh and the British Chiropractic Association. When Singh questioned in an article the legitimacy of the claims made by members of the association that chiropracticians could heal all sorts of heavy illnesses that had ostensively nothing to do with the parts of the body they treated, they sued him for libel.

Publicity-wise, this must have been the worst decision the BCA ever made, but in purely legal terms, they did have a point. The British libel law, unlike libel laws in other countries, could well be interpreted to say that the BoP was on Singh. This meant that he either had to retract what he said in an newspaper article about the issue, or to *prove that chiropractics could not heal those illnesses*.

In fact, this was the verdict in the first trial on the matter. Singh did not back down, took the case to a court of appeals and won in the end. The case attracted so much attention that it might well lead to a revision of the controversial law.

See: http://www.guardian.co.uk/science/2010/apr/15/simon-singh-libel-case-dropped, last retrieved on May 21st 2013. Also on May 21st 2013, Singh's homepage http://www.simonsingh.net/

However, normally conversations do not go to court, and the question which party has to bear the BoP needs to be resolved without professional aid.

What can we say about BoP distributions in normal conversations? To suppose that the burden of proof is flexible in the sense that it may at some time lie with the speaker and at others with the audience seems to entail that this feature is inherent in the structure and the context of the discourse.

There might be several possibilities this could play out theoretically. I'll sketch what I take to be the most promising idea: The burden of proof is part of what D. Lewis called the *conversational score*.[15]

10.7.2 The BoP in the Conversational Score

There are many things that need to obtain in order for a typical assertion to be unobjectionable. For example, an assertion of

> He is rather tall.

will not be felicitous if there is no male in the preceding conversation or in the vicinity of the speakers who is salient enough for the hearers to work out that "he" must refer to that person. Other things that might influence the adequacy of an assertion include salient points of reference, standards of precision for vague terms and existential and other presuppositions.

Lewis now suggests that all these items are recorded in an abstract entity he calls the *conversational score*, and that the participants have to mentally "keep score" in order to be able to follow and participate in the conversation. For example, they will have to remember which salient male persons came up during the conversation, so they will be able to figure out whom "he" might refer to.

Now, I claim that just as what objects are salient in the conversation, which standards of precision apply etc., the *distribution of the burden of proof* is entered and kept track of in the conversational score.

Like any aspect of the conversational score, where the BoP lies can change during the conversation. Much of the time, such changes in the conversational score are appreciated by the speakers quite unconsciously. It is the hope of the theoretician to find clear and, at least in principle, systematizable cues to these changes.

An important phenomenon that Lewis discussed when he introduced the idea of a conversational score is *accommodation*: If an assertion is made that would be objectionable given the present conversational score, then there are two possibilities: Either the incorrectness is addressed and challenged by another participant. Failing that, the score is tacitly corrected to make the assertion felicitous.

An example makes this clear: Suppose someone said to me

(Footnote 14 continued)
collects many links to news coverage, while the BCA's homepage understandably makes no mention of the case.

[15] Lewis (1979).

> By the way, have you finally stopped losing against that half-wit Jerry in your chess club?

In order for this to be an unobjectionable statement, the conversational score would have to (a) support a presupposition, namely that I was in the past usually losing to Jerry, and (b) fix the standards of applicability of the rather vague "half-wit" in such a way that Jerry falls under it.

Let us take it that neither (a) nor (b) was the case before the assertion was made. Now, unless I protest ("What do you mean, I never lost against Jerry!" or "Well, I would not call him a half-wit, after all he almost won the club championship three years ago!"), the conversational score will change so that (a) and (b) are now fulfilled. The conversation will now carry the presupposition that I used to lose to Jerry, and the standards of application of the term "half-wit" are now such that it applies to Jerry. This is the phenomenon of accommodation.

Presumably, the same phenomenon can be observed when it comes to the BoP. If I make an assertion that is clearly only correct if the burden of proof is on the audience, and the audience fails to protest, then this will mean that my assertion will stand (as long as it is not falsified). Bullying others into quietly accepting the BoP can be a formidable debating technique.

Of course, accommodation is not mandatory. There might arise a dispute about where the burden of proof lies, and it is not clear that this question can always be decided. Some of the time, it may be possible to find a neutral party that plays the role of an arbiter, just like the judge in court room debates. At other times, this might not be a viable option.

Some basic insights on how people perceive BoP distribution based on the structure of conversations have already been gathered by experimental psychologists (Bailenson and Rips (1996); Bailenson (2001)). As one would expect, many factors play into this, such as the controversiality of the claims, the conviction with which they are expressed and the mere order in which arguments are presented. But these results are not yet detailed enough to give a precise indication of how the BoP will distribute in any given conversation. In fact, fascinating as this research is, it is unclear that this is an attainable goal at all.

What, then, if both parties just will not budge and refuse to accept that the burden of proof lies with them and not the opponent? It seems that in such cases, communication might well break down at some point. Everyone involved will realize that further discussion is useless.

Now, this seems to me to be something that is in fact happening. Some disputes just go nowhere, because they are not resolvable precisely because no one accepts the burden of proof. Some people, indeed, seem to never be prepared to accept this burden.[16] The most sensible thing to do might well be to stop talking and listening to them. In some special cases, they might say something that is legally bound to the burden of proof. For example, going around and proclaiming others to be child molesters on the sole basis that these people cannot prove that they have never approached a child in an indecent manner has adverse legal consequences. But in

[16] Certain political commentators come to mind.

general, there seems little else to do against such behavior than to decline to enter the conversation.

There is obviously much more to be said about the burden of proof, but I will leave further explorations for a later occasion. Let me end this section by making a last observation about BoP distribution.

One feature that will in many discussions be different from criminal court cases is this: In court, if one party is under the burden of proof, then (a) it has to make *provable* assertions and (b) it has to *disprove* the assertions of the other party to show them incorrect. That is, the party bearing the burden bears it, whether it is in the role as speaker or the role of the hearer.

This is not necessarily the case in other discourses: At a mathematician's congress, everyone bears the burden when *uttering* mathematical statements, but not when sitting in the audience. At the annual meeting of the Conspiracy Theorist Association next door, no one might bear the burden when making claims, and everyone would bear it when listening to their peers.

A conversational score will determine whether a speaker making an assertion has to bear the burden or not. If, and only if, she does not have to bear the burden, the hearers will have to bear it, but only in their role as hearers. If they proceed to make assertions of their own, the issue must be decided anew. Given that the BoP distribution might shift during a conversation, maybe the best way to model all this would be to say that the BoP attaches to single assertions rather than to speakers.

10.7.3 Summing Up the BoP Strategy

I think that the burden of proof distribution strategy is the most interesting and appealing of the hybrid strategies. However, it also leaves us with a very difficult task, namely to describe the mechanisms in which the BoP is distributed in much more detail than I have been able to do here.

To sum up what I do want to say about it here: There is a burden of proof that either lies on an assertion or does not lie on it. This might depend on the kind of statement (mathematical, relating to taste), or it might depend on the course of the conversation it is part of. In this case, it depends on a burden of proof parameter in the conversational score. Depending on whether it does or does not lie on the assertion, the assertion will have consequences according to the verificationistic or the falsificationistic table above, which can be combined into the following single table:

Let us see how this strategy measures up against Dummett's fears and assumptions about a hybrid strategy.

Unlike what he claimed in the earlier texts, there is more than one systematic effect the ascertainment of the semantic value of a statement can have or fail to have.

Nonetheless, the BoP distribution strategy keeps the dividing line between incorrectness and correctness where Dummett drew it, between those statements that have to be retracted and those that are allowed to stand. As a consequence of this, it does

Burden of proof distribution

Semantic value	Effect on linguistic interaction	Verdict
Verifiable	Hearers have to endorse statement	Correct
Gap	Hearers do not have to endorse statement	Correct or incorrect (depending on BoP)
	Speaker does not have to endorse negation	
	Speaker has to retract assertion iff bearing the BoP	
Falsifiable	Speaker has to concede the negation	Incorrect

not allow statements that are neither correct nor incorrect. Thus, we are complying with Dummett's wish here.

However, unlike what Dummett thought a hybrid strategy would have to be, the burden of proof distribution strategy is not a CV&IF strategy: The "only if" directions of the two biconditionals break down.

10.8 Hybrid Consequence

We can also use the BoP to draw logical consequences in a logical system I'll call HYBRID CONSEQUENCE. Suppose we want to know which statements can correctly be asserted given the current distribution of the BoP and the correct assertions that have been made in the course of the conversation. These earlier correct assertions will fall into two categories: Those made under the BoP, and those made not bearing the BoP. I'll write Γ for the set of statements correctly asserted under the BoP, and Δ for the set of statements correctly asserted without the BoP. We will also have two classes of consequences we will be interested in, depending on whether the next statement we wish to make will be made under the burden of proof or not. Thus, logical consequence will relate the ordered pair of sets of statements Γ and Δ to other pairs of sets of statements, Φ and Ψ. If the burden of proof will lie on the consequence, then Φ will contain a single statement and Ψ will be the empty set, and the other way around if the burden of proof will not lie on the consequence. By "the consequence," I simply mean the statement that is in the singleton Φ or Ψ. I will write $\Gamma \mid \Delta \vDash_{\text{hyb}} \Phi \mid \Psi$ to denote HYBRID CONSEQUENCE, and simply omit any of Γ, Δ, Φ and Ψ in case they are empty.

Using the same semantical setup as in Chap. 8, i.e., the Kripke semantics for N_3, we redefine logical consequence:

> $\Gamma \mid \Delta \vDash_{\text{hyb}} \Phi \mid \Psi$, iff in every model and every $w \in W$, if $w \Vdash_1 B$ for every $B \in \Gamma$ and if $w \nVdash_0 C$ for every $C \in \Delta$, then $w \Vdash_1 D$ for every $D \in \Phi$ and $w \nVdash_0 E$ for every $E \in \Psi$.

The idea is that Γ collects all that we know is verified, because correctly uttered under the BoP, and Δ all that we know is at least not falsified, because uttered correctly by speakers not bearing the BoP. Whether or not the BoP is on the conclusion will decide whether we are interested in conclusions before or behind the bar. So, for example, the consequence A of an inference $\Gamma \mid \Delta \vDash_{\text{hyb}} A \mid$ will be such that we

can utter it correctly if the BoP is on us, given that Γ and Δ collect verifiable and unfalsifiable statements, respectively.

Looking at this example, one may wonder whether the information recorded in Δ, which is essentially information about unfalsified statements, could be relevant at all if the conclusion has to be verified. Indeed, it does make a difference, as the following example will show. Let $A \vee B$ be the only element of Γ, and $-B$ the only element of Δ. Then, we will find that $\Gamma \mid \Delta \vDash_{\text{hyb}} A \mid$, while $\Gamma \mid \nvDash_{\text{hyb}} A \mid$. Intuitively speaking, the BoP-bearing speaker who correctly asserted $A \vee B$ had to have either a verification of A or a verification of B. The latter case is excluded by the fact that someone else, not bearing the BoP, was able to utter $-B$.

Now, if we know our assertion will not be made under the BoP, we will be interested in the inferences of the form $\Gamma \mid \Delta \vDash_{\text{hyb}} \mid A$. In this case, we should also check the conclusion for internal coherence using the Elaborate Modal Coherence tool I introduced in Sect. 9.3.1. However, note that the tool should *not* be employed to purge Δ of incoherent statements. Even though, e.g., an asserted contradiction is incoherent, it may give us valuable information about what has and what hasn't been falsified.

It is easy to see that $\Gamma \mid \Delta \vDash_{\text{hyb}} A \mid$ implies $\Gamma \mid \Delta \vDash_{\text{hyb}} \mid A$. It is equally obvious that $\Gamma \mid \vDash_{\text{hyb}} A \mid$ iff $\Gamma \vDash_{N3} A$ and $\mid \Delta \vDash_{\text{hyb}} \mid A$ iff $\Delta \vDash_{N3f} A$.

Inspecting the semantic clauses of the connectives shows that $\mid \Delta \vDash_{\text{hyb}} A \mid$ will hold only if A is a tautology of N_3. On the other hand, $\Gamma \vDash_{N3} A$ implies $\Gamma \mid \vDash_{\text{hyb}} \mid A$, but we also get some new inferences here, such as $A \supset B, \neg B \mid \vDash_{\text{hyb}} \mid \neg A$.

The following list collects some other inferences of interest:

$A \vee B \mid \neg A \vDash_{\text{hyb}} B \mid$	$A \vee B \mid \neg A \vDash_{\text{hyb}} \mid B$
$\neg A \mid A \vee B \nvDash_{\text{hyb}} B \mid$	$\neg A \mid A \vee B \vDash_{\text{hyb}} \mid B$
$A \mid A \supset B \nvDash_{\text{hyb}} B \mid$	$A \mid A \supset B \vDash_{\text{hyb}} \mid B$
$A \supset B \mid \nvDash_{\text{hyb}} \neg B \supset \neg A \mid$	$A \supset B \mid \vDash_{\text{hyb}} \mid \neg B \supset \neg A$
$\mid \neg(\neg B \supset \neg A) \nvDash_{\text{hyb}} \mid \neg(A \supset B)$	$\neg(\neg B \supset \neg A) \mid \vDash_{\text{hyb}} \mid \neg(A \supset B)$
$A \supset B \mid \neg B \nvDash_{\text{hyb}} \neg A \mid$	$A \supset B \mid \neg B \vDash_{\text{hyb}} \mid \neg A$
$\neg B \mid A \supset B \nvDash_{\text{hyb}} \neg A \mid$	$\neg B \mid A \supset B \vDash_{\text{hyb}} \mid \neg A$
$A \supset B \mid A \nvDash_{\text{hyb}} B \mid$	$A \supset B \mid A \nvDash_{\text{hyb}} \mid B$

Admittedly, the above has a somewhat complicated look to it. Does a relation between ordered pairs of sets of statements add up to a *logic*? More, could such a blatantly pragmatic mechanism as the distribution of the burden of proof have any claim to be at the *heart* of logic? Can the inferences this setup churns out really have anything to do with our understanding of the logical constants? Isn't logic supposed to provide a certain path form one truth to the next, rather than a complicated recipe for finding things one can get away with? By the way, what happened to truth anyway in this account?

These are good questions; however, it seems that a charge of giving an account of logic that is "too pragmatic" is not trivially easy to bring home against a philosopher whose avowed credo is "meaning is use." To use a statement competently is to be

able to decide when to make it. And if this systematically involves knowing where the burden of proof lies, then the way this burden acts on the logical constants is something that has to be understood as well, with all the complexity that entails for logical consequence.

Moreover, once we move into an area of discourse where the burden of proof is fixedly on the speakers or the hearers, the account of logical consequence above becomes much easier: It will just coincide with N_3 or N_{3f}, respectively.

But what about the last of the questions above? What about truth in all this?

10.9 Whatever Happened to Truth?

Indeed, we have lost the notions of truth and falsity from view a little. We have seen that often, Dummett thought that truth and correctness coincide. However, to tie truth to correctness and falsity to incorrectness in the present account would mean to make these notions dependent, not only on the state of investigation, but also on the burden of proof.

Now, a notion of truth that fluctuates with the burden of proof truly deserves the label "anti-realistic." In fact, it comes quite close to claim that truth is for a large part a social construction: We would be "making" many of our truths and falsehoods by conducting our conversations in a certain way.

I think that at this point, many will feel that there is too much strain on our intuitive concept of truth to warrant the label. If we *must* cram truth and falsity into our picture, then I think we should simply tie truth to verifiability and falsity to falsifiability.[17]

Hybrid truth

Semantic value	Truth/falsity	Verdict
Verifiable	True	Correct
Gap	Neither true nor false	Correct or incorrect (depending on BoP)
Falsifiable	False	Incorrect

Dummett would, as we know, dislike the fact that there is a space for statements that are neither true nor false. But given that we have discerned quite different effects for verifiable, falsifiable and gappy assertions in this chapter, his argument seems not too persuasive. There seems to be no good reason any more to maintain that the effect of all types of designated (undesignated) values is the same as long as the statement is not constituent of a larger statement.

Nonetheless, there is still quite enough to upset intuitions about truth and falsity in this picture: Both notions, as we had seen already in Sect. 3.8, will be tensed: The more we find out about the world, the more will become true or false. Furthermore,

[17] And if we feel that we just have to keep truth and correctness (and falsity and incorrectness) correlated, then we should move back to the CV&IF strategy.

the disquotational scheme will fail: We want to make room for correct assertion of an undecidable A, even if "A is verifiable," and hence "A is true" would be unassertible even if the BoP was not on the speaker.

For what it is worth, personally, I would advise the constructivist to stay away from the notion of truth as far as possible. Any constructive attempt to give an account of truth that tries to be answerable to intuitions we may have about this concept, or to respect the pretheoretical use we make of it, is just quite unlikely to succeed.

This was also an early impulse of Dummett's: Truth is an inherently realistic notion, and a constructivist should not employ truth conditions in order to account for the meaning of statements. Correctness conditions give us all we need to explain meaning and logical consequence. For me, this is still the most promising line for the constructivist to take, even if it is far from unproblematic.

If, on top of an account of meaning and logical consequence, truth and falsity must be accounted for, then I would suggest to use an eclectic strategy, such as the ones sketched in Sect. 2.11. As I wrote there, the metaphysical harvest we might reap from such an eclectic account will presumably be meager, but metaphysical conclusions were never my main aim.

What instead I take the main results and contributions of this book to be will be summarized in the last part.

10.10 Chapter Summary

In this chapter, I have shown how verifications and falsifications can play an exactly equal part on all levels of meaning. I showed that there are more systematic effects the ascertainment of semantic values might have than Dummett allowed for, and that it is necessary to grasp both verification and falsification conditions to appreciate all these effects.

The three different ideas on how to combine verifications and falsifications into a hybrid strategy were the discourse separation strategy, the CV&IF strategy (the one Dummett considered) and the burden of proof distribution strategy. I claimed that the last strategy is the most appealing one, even if I could not supply a complete account of the shifts of the burden of proof we find in everyday discourse.

I also showed that the burden of proof can be worked into the account of logical consequence. However, only in those cases where the burden of proof is fixed do we get something that conforms to our traditional expectations of what a logical system might look like formally. I ended the chapter by suggesting the most plausible way the notions of truth and falsity could be located in the account, but I advised the constructivist to try to make do without these concepts.