



# Testimonial knowledge and content preservation

Joey Pollock<sup>1</sup>

Accepted: 12 August 2023 / Published online: 7 September 2023  
© The Author(s) 2023

## Abstract

Most work in the epistemology of testimony is built upon a simple model of communication according to which, when the speaker asserts that  $p$ , the hearer must recover this very content,  $p$ . In this paper, I argue that this ‘Content Preservation Model’ of communication cannot bear the weight placed on it by contemporary work on testimony. It is popularly thought that testimonial exchanges are often successful such that we gain a great deal of knowledge through testimony. In addition, the testimonial knowledge so gained is thought to be informative: it closes off epistemic possibilities for the agent. However, in the literature on truth-conditional content, there is no theory of content that can underpin both of these commitments simultaneously if the Content Preservation Model is true. There is a minimal notion of content, which is commonly preserved in communication, but which is typically uninformative; there is a maximal notion of content, which is often informative, but which is not often preserved in communication; and, although there are moderate positions between these two extremes, these views cannot strike the right balance between informativeness and shareability. Thus, an epistemology of testimony that endorses the Content Preservation Model faces a dilemma: on the first horn, testimonial exchanges are rarely successful; on the second horn, testimonial content is rarely informative. I suggest that this dilemma motivates further exploration of alternative communicative foundations for the epistemology of testimony.

**Keywords** Epistemology of testimony · Communication · Semantic minimalism · Relevance theory · What is said

---

✉ Joey Pollock  
joeykpollock@googlemail.com; joanna.pollock@ifikk.uio.no

<sup>1</sup> Department of Philosophy, Classics, History of Art and Ideas, IFIKK, University of Oslo, Blindern, Postboks 1020, 0315 Oslo, Norway

## 1 Introduction

The dominant view of the communicative foundations of testimony is that successful testimonial exchanges preserve content: at least for the central cases, when the speaker testifies that  $p$ , the hearer comes to know this very content,  $p$ . (Burge, 1993; Coady, 1992; Gerken, 2020; Goldberg, 2007; Lackey, 1999; Moran, 2018). In this paper, I argue that this simple ‘Content Preservation Model’ of testimonial communication faces a dilemma: on the first horn, testimonial exchanges are rarely successful; on the second horn, testimonial content is rarely informative. This dilemma is generated by the fact that, in the literature on truth-conditional content, there are no theories according to which content is *both* informative and easily preserved in a speech exchange. There is a minimal notion of content, which is commonly preserved in communication, but which is typically shallow and uninformative (Borg, 2004; Cappelen & Lepore, 2005); there is a maximal notion of content, which is often rich and informative, but which is not often preserved in communication (Carston, 2002; Sperber & Wilson, 1986); and, although there are positions between these two extremes, these moderate views cannot strike the required balance between informativeness and shareability. My central aim is to show that, for these reasons, the model of communication that underpins most work on testimony is unstable. I will not argue that alternatives to content preservation avoid the dilemma. Rather, I will suggest that the dilemma motivates a more thorough exploration of alternative communicative foundations for the epistemology of testimony.

## 2 Content preservation in theories of testimony

Contemporary epistemology presents a rather sanguine picture of the role of testimonial exchanges in our epistemic ecology. Much of the knowledge we possess is thought to be testimonial. As Lackey writes,

We rely on the reports of those around us for everything from the ingredients in our food and medicine to the identity of our family members, from the history of our civilization to the limits and contents of our planet. If we refrained from accepting what others told us, our lives, both practically and intellectually, would be unrecognizable. (2008: 1)

In the literature, it is emphasised that testimonial knowledge is not just any knowledge that is acquired as a result of a communicative exchange. Rather, it is knowledge that is gained ‘through’ testimony: it renders the hearer epistemically vulnerable in relation to the speaker, requiring reliance on her, or trust in her word (Audi, 1997; Goldberg, 2007). This reliance of the hearer on the speaker is thought to be appropriate because the speaker takes on a special kind of responsibility for what she asserts when she proffers testimony – she presents herself as standing in an epistemically privileged position with respect to the testimonial

content (Goldberg, 2007), or provides her assurance for it (Faulkner, 2007; Moran, 2018; Zagzebski, 2012).

By placing our trust in others in this way, it is thought that we can gain a great deal of knowledge that might otherwise be very difficult to acquire. Testimony is thus thought to be a vital source of knowledge; and testimonial exchanges are taken to succeed relatively often. As part of this picture, authors have claimed we can acquire testimonial knowledge even when we know very little about one another's interpretive dispositions or contextual assumptions; Goldberg (2007: 56) calls these 'radical communication' cases. Indeed, the standard examples of testimonial exchanges in the literature are, not extended fragments of discourse, but what Herbert Clark (1996: 82) calls 'one-shot' communicative events – those in which the speaker's assertion is interpreted by the hearer without further dialogue. Goldberg treats radical communication cases as test cases for theories of testimony: a successful theory should be able to maintain that testimonial knowledge can be acquired even when there is little contextual information for interlocutors to rely on, both in choosing their words and in arriving at interpretations. This idea that we can acquire testimonial knowledge despite having little information about our interlocutor has been one of the driving motivations for anti-reductionist views of testimonial warrant, and has led to the dominance of anti-reductionism over reductionism in the literature.<sup>1</sup>

This picture of the role of testimony in acquiring knowledge is characteristically underwritten by assumptions about the role of *content* in testimonial exchanges. Authors assume that, in a successful testimonial exchange, the speaker asserts one particular testimonial content, *p*, and this testimonial content is 'preserved' across the exchange. I will call this the Content Preservation Model of testimony:

Content Preservation Model: In a successful testimonial exchange, the speaker testifies to one particular content, *p*, and the hearer must form a testimonial belief with this very content, *p*.<sup>2</sup>

The Content Preservation Model is not a complete theory of testimony. Rather, it is a view about the communicative foundations of testimonial exchanges. When a speaker expresses knowledge (or produces a warranted statement), the Content Preservation Model maintains that any *testimonial* knowledge acquired by the hearer must have the same content as this speaker's testimony. There are no doubt refinements that might be made to this presentation of the model. However, many authors appear to endorse some version of it. For example, Lackey writes, "In explaining how we acquire knowledge via the testimony of others, we are interested in offering an account of how hearers can come to know that *p* through a speaker's statement

<sup>1</sup> For a response to this challenge to reductionism, see Kenyon (2013).

<sup>2</sup> I assume that the content of the speaker's testimony is the same as the content of the propositional attitude that she expresses with it. I intend this to accommodate views of testimony that do not require that testifiers believe the testimonial content (Lackey, 2008). If the contents of assertion come apart from the contents of the attitudes expressed, the content that must be preserved is whichever content the epistemic properties of the testimony attach to (i.e., the content that is known, the statement that is warranted, etc.).

that  $p$ ” (1999: 488). Similarly, Fricker writes, “[T]here must be a proposition which the teller intends by her action to present as true, and this must be identical with the one grasped by her audience as so presented, and accepted by her” (2006: 229).<sup>3</sup> Whereas many authors simply assume a version of the Content Preservation Model, Goldberg (2007) presents a substantial argument for it; he then goes on to employ the model in an argument for semantic externalism. Goldberg’s argument is that content preservation is necessary for characterising epistemic reliance, where this reliance is taken to be an essential feature of knowledge through testimony. A related argument has been made by Gerken (2020). Gerken, like Goldberg, argues from content preservation to semantic externalism. However, rather than arguing for content preservation, Gerken appeals to a version of the Content Preservation Model as the first premise in a transcendental argument. He treats this model as playing the role of self-evident premise, pointing out that the claim that a hearer gets knowledge that  $p$  from a speaker’s testimony that  $p$  is “commonsensical and epistemological orthodoxy.” (2020: 4).

I think Gerken is right that this claim is epistemological orthodoxy. Moreover, commitment to content preservation does not appear to be an incidental feature of the testimony literature: several theories of testimony seem to have content preservation baked into their core. The clearest example is Goldberg’s (2007) view, mentioned above. There are further examples, however: it is not clear we can understand the view that epistemic properties are ‘transmitted’ via testimony (except in a restricted range of cases<sup>4</sup>) if the content that the hearer recovers is different from the content expressed by the speaker.<sup>5</sup> Similarly, ‘assurance’ views, which claim that testimony involves invitation to trust, seem to require that the hearer grasps the content that the speaker provides her assurance for.<sup>6</sup> It is perhaps not hard to see why epistemologists are drawn towards content preservation: when a speaker asserts that  $p$ , it is with respect to this particular content that she presents herself as standing in an epistemically privileged position, or assumes responsibility, or provides her assurance. In accepting this content, the hearer becomes a new link in a chain of reliance leading back to an original testifier who possesses non-testimonial warrant for their belief (or statement) with this content (Audi, 2002; Fricker, 2006). An agent’s position in this chain supports various epistemic practices surrounding testimony, such as blaming previous links for the falsity of one’s own testimonial belief, or ‘passing the buck’ further up the chain when asked to provide justification for it (Goldberg, 2006, 2007; McMyler, 2007). The coherence of this picture relies on content preservation throughout the testimonial chain: shifts in content risk severing the connection to non-testimonial sources of warrant, leaving the chain epistemically

<sup>3</sup> Although see Fricker (2012, fn.8) for an approach which relaxes these standards somewhat.

<sup>4</sup> Perhaps epistemic properties are transmitted when the content the hearer grasps is entailed by the content that the speaker expressed. Similar considerations may apply to assurance views.

<sup>5</sup> For transmission views, see Burge (1993), Williamson (2000). For arguments against transmission, see Lackey (2008).

<sup>6</sup> For assurance views, see Moran (2018), Faulkner (2007), Zagzebski (2012).

groundless. Although some authors believe that testimony can generate knowledge (Lackey, 2008), it is thought that chains cannot achieve this by *transmuting* content.

The epistemology of testimony, then, appears to be built upon the Content Preservation Model or, at least, a model that requires preservation of truth conditions.<sup>7</sup> With the exception of Goldberg, however, there are few who have presented an argument for it. There are also few who question it, although there are important exceptions, such as Peet (2016, 2019), which I will return to below. In this paper, I argue that, as commonsensical as it may seem, the Content Preservation Model faces a dilemma: either testimonial contents are not typically preserved in an exchange, and so testimonial knowledge is rare, or testimonial contents are often preserved in communication, but these contents are uninformative. In the next section, I begin my argument for this dilemma.

### 3 A dilemma for the content preservation model

There is a broad range of views of truth-conditional content. My approach in this paper is not to challenge the Content Preservation Model by defending one of these approaches over others. Rather, I argue that the dilemma arises no matter which approach one endorses. To demonstrate this, I first introduce two ends of a spectrum of varieties of truth-conditional content and argue that each leads to a different horn of the dilemma. I then argue that appealing to moderate positions cannot help to escape it.

#### 3.1 Minimal and maximal content

Varieties of truth-conditional content can be organised according to the extent to which they permit influence from context. At one end of this spectrum is minimal content (Borg, 2004; Cappelen & Lepore, 2005). Defenders of minimal content claim that well-formed declarative sentences express fully propositional, truth-evaluable contents that can be more or less read off from a sentence's surface form and lexical constituents.<sup>8</sup> Some minimalists acknowledge a contribution from context, but this contribution is limited to handling ambiguity and a small range of indexicals. Here is an example:

- (1) Jill is ready

---

<sup>7</sup> If contents are more fine-grained than truth-conditions, it may be preservation of truth-conditions which underpins these approaches (see Pollock, 2021b; Peet, 2016). I ignore this complication in what follows: the reasons for thinking that testimony does not preserve content are also reasons for thinking that truth-conditions are not preserved.

<sup>8</sup> Minimalists allow that what is syntactically encoded by a sentence sometimes includes more (articulated) constituents than are apparent in its surface form (Borg, 2004: 212).

Borg (2007) suggests that the minimal content of (1) can be paraphrased as ‘Jill is ready for something’, or ‘There is some  $x$  such that Jill is ready for  $x$ .’ Not all minimalists are happy to give such paraphrases: Cappelen and Lepore (2005) instead maintain that (1) is true just in case *Jill is ready*. They resist requests for more information about what it means for someone to be ready *simpliciter*, claiming that this is a task, not for semanticists (nor lay speakers) but for metaphysicians (2005: 155ff). On their approach, the minimal content of (1) is whatever content is common to every utterance of (1), regardless of differences across contexts of utterance (2005: 143).

These authors offer different versions of minimalism. However, they agree that the minimal content of a sentence is not typically what a speaker primarily intends to communicate when she produces an utterance of that sentence. When we assert (1), for example, we are not usually trying to communicate a proposition that is true just so long as Jill is ready for *something* (nor, that Jill is ready *simpliciter*), although this minimal content may be entailed by what we say. Borg (2004) claims that minimal contents are not typically good candidates for ‘what is said’ with an utterance (although, in later work, she complicates this picture – an issue I return to below); similarly, Cappelen and Lepore stress that minimal content should not be identified with what is said or asserted (2005: 150).<sup>9</sup> The role of minimal content in communication is not to serve as communicated content – it serves at a prior stage in processing. On Borg’s approach, minimal contents are shallow outputs of a language module that is encapsulated from the contextual information required to work out a speaker’s intended meaning. Borg writes,

what a semantic theory gets us is [...] a shallow, minimal level of representation, with richer, pragmatically effected interpretations emerging at some point beyond the confines of the language faculty. (2004: 99)

Similarly, in Cappelen and Lepore’s (2005: 185) framework, minimal content is a (mostly) context-free starting point from which a hearer can go on to work out the speaker’s intended message(s) by extensive appeal to context. Minimalists thus accept that what a speaker intends to communicate with her utterance often goes beyond minimal content, and that recovery of this richer content by the hearer involves, not just simple decoding, but also pragmatic processing. As such, minimalists allow that there are additional, non-minimal, varieties of content; what is distinctive of the position is the claim that fully propositional minimal contents *exist*.

At the other end of the spectrum is ‘maximal’ content. Maximal content is the focus of radical contextualist and pragmaticist views (Carston, 2002; Recanati, 2004; Sperber & Wilson, 1986). These views claim that it is typically only utterances of sentences in context that have fully propositional, truth-evaluable contents. I will take Relevance Theory as an example. On this view, the truth-conditional content of an utterance (its ‘explicature’) is a pragmatic development of the logical form

<sup>9</sup> Cappelen and Lepore (2005) endorse speech act pluralism: utterances express indefinitely many propositions, including the minimal content of the utterance. However, like Borg, they maintain that the latter is rarely what a speaker is trying to communicate.

of the sentence tokened in the utterance. Explicature is designed to capture the message that the speaker primarily, or explicitly, intends to communicate – for example, not merely that Jill is ready for *something* (or ready *simpliciter*), but that she is ready to start invigilating the philosophy exam, or ready to parachute out of the aeroplane, ready to exhale, ready to adopt a puppy, etc. On this view, the sentence in (1) is truth-conditionally incomplete – a mere propositional ‘skeleton’ rather than a fully propositional content. The surface form of the utterance, thus, does not wear its intended message on its sleeve: the explicature of an utterance often departs significantly from the conventional meaning of the sentence type, and recovery of explicature involves substantial reliance on pragmatic processing. At the extreme of this end of the spectrum are authors, such as Carston (2002), who suggest that it may not be possible for speakers to be fully explicit when encoding their thoughts in language: our attempts to specify the richer contents that speakers wish to communicate, like the interpretations of (1) given above, are always mere approximations.

Although there are disagreements between minimalists and maximalists, the two approaches are not necessarily in tension with one another. Rather, minimal and maximal content play different yet complementary roles in theorising about communication. Carston (2009: fn.6) and Borg (2004: 261) suggest that, in important respects, their views are closely aligned: both posit a minimal level of meaning (either a fully propositional minimal content or a propositional skeleton) that is the domain of linguistic semantics, and a second level of pragmatically enriched meaning, which serves as communicated content (i.e., as what is said, asserted, implicated, etc.). What is important for my purposes is that minimal and maximal content have certain mutually exclusive properties. As Carston (2009: 40) notes, since Grice, many authors have come to believe that, for most utterances, there is no single notion of content that possesses both of the following:

- (a) The property of being closely related to the conventional meaning of the sentence type.
- (b) The property of being something that the speaker intends to communicate with her utterance.

Minimal content is closely tied to the compositionally-derived meaning of the sentence – it possesses property (a). However, it does not typically possess property (b) – it is rarely speaker-meant. In contrast, maximal content possesses property (b) – its role is to capture what the speaker primarily or directly intends to communicate – however, it does not possess property (a), often departing significantly from the conventional meaning of the sentence. Carston writes:

[...] for many utterances, it’s just not possible to have it both ways. In other words, it is not generally the case that a single level of meaning can do double duty as both the semantics of natural language sentences and the explicitly communicated content. (ibid.)

As I will argue, to avoid the dilemma, the Content Preservation Model would need a notion of content that can have it both ways.

## 3.2 Truth-conditional content and testimony

As we have seen, minimal and maximal content play different yet complementary roles in communication. Which of these two kinds of content could serve as *testimonial* content – that is, as the content of testimonial assertion and belief? In this section, I argue that, on the assumption of the Content Preservation Model, each choice will land us on a different horn of the dilemma: if we claim that testimonial contents are maximal, we get a view on which successful testimonial exchanges are rare. However, if we claim that testimonial contents are minimal, we get a view on which testimonial knowledge is shallow and uninformative. I will start with maximal content.

### 3.2.1 Maximalism and testimonial content

Maximal content is, I think, a plausible candidate for the kind of content asserted in testimony: the notion is precisely designed to capture what the speaker primarily intends to communicate. However, it is thought that, in communication, the maximal content recovered by the hearer will often be, at best, merely similar to that expressed by the speaker. Many maximalists happily embrace this feature of the view. Carston (2002: 47), for example, writes, describing the Relevance Theoretic approach (see also, Bezuidenhout, 1997: 212; Sperber and Wilson, 1995: 192–3):

Verbal communication [...] is not a means of thought duplication; the thought(s) that the speaker seeks to communicate are seldom, if ever, perfectly replicated in the mind of the audience; communication is deemed successful (that is, good enough) when the interpretation derived by the addressee sufficiently resembles the thoughts the speaker intended to communicate.

The reason that maximal content is difficult to preserve in communication stems from the fact that it is significantly underdetermined by linguistic meaning. As noted earlier, maximalists suggest that maximal content would be difficult, and perhaps even impossible, to fully encode in a sentence even if the speaker tried to be as explicit as possible (Carston, 2002: 26; Bezuidenhout, 2002). This needn't entail that maximal content is impossible to preserve, but it does mean that the hearer's interpretation must rely heavily on her own background contextual assumptions. Because these background assumptions are often rich and complex, they are unlikely to be perfectly shared with the speaker; and, to the extent that they diverge, the two interlocutors will interpret an utterance in different ways.

The difficulty of preserving maximal content is also stressed by opponents of maximalism. Cappelen and Lepore (2007) argue that content preservation is, not just difficult, but impossible on maximalist views, and that even the Relevance Theorists' claim that the hearer will recover a content that is similar (in any non-trivial sense) is dubious.<sup>10</sup> In their (2005), they emphasise the broad range of background

<sup>10</sup> The problem is not alleviated by appeal to semantic externalism/anti-individualism (Burge, 1979). These views might make it easier for speakers to recover the concepts present in the surface form of an utterance, but they are no help in recovering the maximal content communicated on a particular occasion (cf. Abreu Zavaleta, 2021a).



assumptions that Bezuidenhout (2002: 117) claims can be relevant to utterance interpretation. These include, e.g., beliefs about the prior discourse context, beliefs about one's interlocutor, such as her motivations and proclivities, or the communities she belongs to, beliefs about the perceptual environment, knowledge relating to stereotypes, scripts, or frames triggered by expressions in the utterance, and knowledge of general or local conversational principles. They argue that, given the volume and complexity of contextual factors involved, preservation of maximal content would be miraculous (Cappelen & Lepore, 2005: 124).

A related issue has been leveraged as a problem for testimony by Peet (2016). His focus is an epistemic problem caused by (the potential for) failure of content preservation. Roughly, the problem is that, for various reasons (epistemic limitations, time constraints, carelessness, low stakes, etc.), when speakers make assertions, they often leave open many plausible interpretations of their utterance, not all of which they know to be true or even believe. Peet asks us to imagine a case in which (2) is uttered by an agent, Matt, responding to his friend Sally's utterance of 'I'm hungry. Is there anything to eat?' (2016: 401).

(2) There isn't any food

In this context, Matt is not trying to communicate that there isn't any food in the universe; he is trying to communicate that there isn't any food in some restricted domain. However, there are many similar ways in which the domain might be restricted (*ibid.*):

- (a) There isn't any food belonging to Matt.
- (b) There isn't any food belonging to Matt or Tom (Matt's housemate).
- (c) There isn't any food that Matt is willing to share.
- (d) There isn't any food which Sally likes, and which meets the above criteria.
- (e) etc.

Peet argues that, even if the hearer recovers a true proposition from the exchange, she will not have done so reliably (2016: 404): she could easily have recovered a similar proposition that was false. Thus, her testimonial belief will not qualify as knowledge.<sup>11</sup> He calls this the 'recovery problem'.

My argument draws on similar considerations to those employed by Peet. In particular, although Peet assumes a relatively maximal approach to content in his argument, he argues that appealing to minimalism will not avoid the epistemic problems he identifies. However, he and I use these considerations for different purposes. Peet's aim is to pose an epistemic problem for testimonial reliability in a restricted range of cases. He suggests that recovery problem cases are common (2016: 405–6); but it is consistent with Peet's conclusion that there are many successful content-preserving testimonial exchanges. My interest in this paper is not in epistemic problems

<sup>11</sup> For a response to this epistemic issue, see Davies (2019).

caused by failure of content preservation. Rather, I use similar considerations to support a more general claim about the communicative foundations of testimony: due to the nature of maximal content (as avowed by both its defenders and its critics), we should expect maximal content preservation to fail for testimonial utterances quite generally (although perhaps with some exceptions).<sup>12</sup> Although recovery of maximal content may not be impossible, failure of maximal content preservation seems especially likely in just the sorts of cases that are treated as test cases for theories of testimony – that is, in radical communication cases, where interlocutors have relatively little information about one another’s contextual assumptions. Thus, on the assumption of the Content Preservation Model, if we categorise testimonial content as maximal content, the result is that few testimonial exchanges succeed: most exchanges fail to preserve testimonial content. On this first horn of the dilemma, we must adopt a wide-ranging scepticism or pessimism about knowledge through testimony. I turn next to minimal content.

### 3.2.2 Minimalism and testimonial content

Minimal content is supposed to be easily shared in communication because it is closely related to the conventional meaning of the sentence uttered (Cappelen & Lepore, 2005, 2007). Given this, the minimalist might look like a natural ally for a defender of the Content Preservation Model. However, claiming that testimonial contents are minimal contents incurs a different set of costs.

The problem is that, as we have seen, minimal contents are not typically the contents that a speaker asserts or intends to communicate with her utterance: they are designed to play a different role in communication. Importantly, it is for good reason that minimal contents are not treated as asserted content by minimalists. As Peet points out in presenting the recovery problem, minimal contents do not convey enough information to be plausible candidates for what speakers assert when they offer testimony (2016: 412). Relatedly, appealing to an argument from Saul (2012), Peet (*ibid.*) claims that minimal contents do not consistently track our judgments concerning whether a speaker has lied and, thus, they will not track judgments of testimonial (or assertoric) wrongdoing.

More recent work on minimalism appears to offer resources to defend against these worries. Borg (2019) argues that minimalists (herself included) have been too quick to concede that minimal contents are rarely asserted. She argues for a composite notion of what is said according to which different notions of what is said track different varieties of content, ranging from minimal to maximal. On Borg’s view, one notion of what is said – that which concerns *strict* linguistic liability – does indeed track minimal content: when we judge a speaker to have lied, in the strictest

<sup>12</sup> Bezuidenhout (2002) briefly suggests that content preservation may be possible in some cases, but she is considering examples in which interlocutors have access to large amounts of contextual information. This is not the sort of scenario that faces us in Goldberg’s radical communication cases.

sense, it is often minimal content that our judgments are tracking.<sup>13</sup> If Borg is right, then minimal contents *are* sometimes asserted by the speaker and may sometimes serve as testimonial contents (2019: 533). Moreover, tying the content of testimony to judgments of liability seems like a promising approach given that work on testimony deals in epistemic concepts such as assurance, reliance, trust, blame, buck-passing, and the like.

To what extent could Borg's approach render the classification of testimonial content as minimal content plausible? I think, even accepting this development of Borg's view, this approach is problematic: minimal contents are often inappropriate candidates for testimonial contents *even when they track strict linguistic liability*. To see this, consider an assertion of (3):

(3) There is milk in the fridge

(3) is about as paradigmatic an example of testimony as one could find in the literature. The minimal content of (3), however, is characteristically shallow: it is true when there is a tiny amount of dried milk residue stuck to the fridge ceiling, or when there is milk trapped inside the insulation of the fridge door, or when the milk is mixed together with ketchup – in all of these circumstances, it is strictly true that there is milk in the fridge. With Borg, we can accept that, when a speaker asserts (3), she assumes strict liability only for this minimal content; however, it is nonetheless often some richer content that the hearer comes to believe: when it is mutually manifest that the hearer is seeking milk for her coffee, her interpretation of the utterance will typically rule out the ketchup-milk worlds, for example. And, importantly, it is often some richer content that the speaker intends to communicate *even when* she may deny strict liability for this richer content. Thus, the speaker often takes on more than just this strict liability when offering testimony. This is something that Borg recognises. She allows that it is often richer contents that are asserted in communicative exchanges and identifies a second notion – conversational liability – that concerns our liability for these richer contents (2019: 521). I think that conversational liability is often a better fit for the kind of liability incurred by testimonial assertions, even if there are also cases in which the content of the speaker's testimony tracks strict liability.

The problems just discussed stem from the distinctive shallowness of minimal content. Note that, the claim that minimal contents are often shallow is different from the claim, accepted by some epistemologists, that testimony is 'thin' (see Adler, 1996; Goldberg, 2007). To say that testimony is thin is to say that agents need not understand its content. In contrast, the 'shallowness' of minimal contents consists in their being unqualified, or un-enriched. As a consequence, when true, they are often largely uninformative: as Borg describes them, many minimal contents are obviously or 'trivially' true (2019: 525). The idea that testimonial knowledge is informative rather than shallow is rarely made in quite these terms in the literature.

<sup>13</sup> Cappelen and Lepore's (2005) minimalism could not be employed in this way as they claim that speakers' judgments are not a good guide to semantic content.

However, some theories of the nature of testifying claim that a speaker must intend to convey relevant information to their audience (Elgin, 2002; Graham, 1997). Moreover, the idea is implicit in claims that are characteristically made regarding the value of testimony as a source of knowledge, as illustrated in the earlier quotation from Lackey. To claim that testimony is informative is not to say that it cannot be uninteresting, mundane, or lack practical value. Rather, the idea is that testimonial knowledge tends to license new inferences and rule out epistemic possibilities for the agent. Claiming that testimonial content is minimal requires denying that testimony is typically informative in this way. This is the second horn of the dilemma for the Content Preservation Model.

Could minimal contents not serve as testimonial contents despite this characteristic lack of depth? I think the answer is no: there are further issues with this ‘shallow testimony’ approach, which place it at odds with dominant views about the nature of testimonial knowledge. The first problem is that because, as noted above, many minimal contents are obviously true, it will often be mutually manifest that the hearer already believes the testimony prior to an exchange. For example, you already know (at least dispositionally) that Jill is ready for *something*; similarly, if you are someone who has owned milk then, unless your fridge is recently cleaned, it’s likely that you already know there are traces of milk residue in there somewhere. In such cases, we learn nothing new through testimony. Thus, on this approach, the value of testimonial knowledge is diminished. Moreover, many of the epistemic concepts that have figured centrally in theories of testimony seem inappropriate. For example, an invitation for you to trust me when I assert that Jill is ready (for something) seems wholly unnecessary – you do not epistemically benefit from my assurance with respect to a proposition that is so obviously true.

An additional problem is that minimal contents, of the sort Borg defends, are often *false* even when they play a role in communicating some true, enriched content (Borg, 2004, 2019; Carston, 2009). This is also a feature of minimalism that its defenders embrace. Consider the following<sup>14</sup>:

(4) Every beer is in the bucket

The minimal content of (4) can be paraphrased as *every beer in the universe is in the bucket*. This content is obviously false, even though assertions of (4) are routinely used to communicate richer, true contents in which the domain is restricted. The minimal content of (4), then, could not be a candidate for testimonial knowledge (in most contexts) for the simple reason that knowledge entails *true* belief. This partially undermines the idea that testimonial exchanges often succeed – for the sorts of exchanges under consideration do not result in testimonial knowledge on this ‘shallow testimony’ view. Additionally, because the minimal contents of sentences like (4) tend towards obvious falsity, it is also implausible to claim that (for most contexts) it is *these* contents that speakers take responsibility for when offering

<sup>14</sup> This example is from Buchanan (2010), but I use it here for a different purpose.

testimony. Rather, it is some richer content that speakers are trying to communicate, and it would be uncharitable to insist that they assume responsibility for these obvious falsehoods. It seems then that the ‘shallow testimony’ view must also give up the idea that speakers take responsibility (provide their assurance, etc.) for the content of their testimony in these cases.

To sum up, the ‘shallow testimony’ view, in claiming that testimonial contents are minimal contents, is encumbered with certain features of the latter, which conflict with prevailing views of the nature of testimonial knowledge and assertion. As Borg (2019: 525) describes her view, minimalism “generates semantic contents which are either trivially true or trivially false.” This may not be a problem for minimalism itself, but it *is* a problem for the view that testimonial contents are minimal: on this view, testimonial contents are often either trivially true, and thus already known by the hearer, or trivially false and thus cannot be known. Moreover, because they are often false, the link between testimonial content, assertion, and responsibility is partially severed. This is the price of maintaining the Content Preservation Model by appeal to minimal content.

Let’s recap the argument so far. In an echo of Carston’s characterisation of the post-Gricean landscape, to avoid the dilemma, the Content Preservation Model needs a notion of content that possesses both of the following:

- (a) The property of being often preserved in a communicative exchange.
- (b) The property of being informative.

But, of the options considered, there is no such notion. For most utterances, minimal content has property (a), but lacks property (b): it is relatively easy to recover from an exchange, but is not typically informative. Thus, classification of testimonial content as minimal content allows us to maintain that testimonial exchanges often succeed, but thereby commits us to a view of testimonial knowledge as typically uninformative. Maximal content has property (b), but lacks property (a): it is often informative in comparison with minimal content, but is rarely preserved in communication. Thus, claiming that testimonial contents are maximal (on the assumption of the Content Preservation Model) commits us to a view on which testimonial exchanges are rarely successful.

In the preceding, I have considered just those varieties of content that lie at the far ends of a spectrum from minimal to maximal. It is natural to wonder whether intermediate views might strike a balance between shareability and informativeness. In the next section, I argue that, although there are moderate positions in the literature, they cannot rescue the Content Preservation Model.

## 4 Moderate approaches

There are differences among moderate positions in the literature; however, they are each incapable of avoiding the dilemma for the same sorts of reasons. Thus, in what follows, I describe the problem as it confronts one prominent moderate proposal.

I then explain why we should expect the problem to generalise to other views. The example I focus on is Schoubye and Stokke's (2016) moderate pragmaticist account.<sup>15</sup>

#### 4.1 Truth-conditional content and the Question under Discussion

Schoubye and Stokke's account is, in part, a response to Cappelen and Lepore (2005), who argue that attempts to develop moderate contextualist/pragmaticist views cannot avoid sliding into radical versions of these positions. Schoubye and Stokke offer a principled way to avoid this descent into maximalism. As such, the kind of content posited by their account looks like a good candidate to prop up the Content Preservation Model. Note that Schoubye and Stokke do not develop their account for this purpose. Thus, I do not argue that their view is false – merely that it cannot be repurposed to escape the dilemma.

Schoubye and Stokke's account draws on an existing framework for understanding the semantics of questions from Roberts (2012). In this framework, conversational structures are built around the notion of a 'Question under Discussion' (QUD), where answers to QUDs in a discourse update the common ground. There's much more to be said about Schoubye and Stokke's account, and the semantics of questions they appeal to, than I will cover here; however, to see the problem for the Content Preservation Model, a sketch of their view will suffice. The basic idea is that what is said (by an utterance in context) is an answer to the QUD in that context, where this question is determined by the discourse the sentence is a part of. They present the account as follows:

What is said by a sentence  $S$  relative to a context  $c$  and a question  $q_c$  (where  $q_c$  is the QUD in  $c$ ) is the weakest relevant proposition  $\phi$  such that  $\phi$  either entails or is entailed by the minimal content of  $S$  in  $c$ . (783)

A 'relevant' proposition is a partial or complete answer to the QUD. In addition, the moderate content of the utterance must satisfy two further constraints: firstly, it must entail, or be entailed by, the minimal content of the sentence, thus securing a semantic relationship between what is said and the compositionally-derived meaning of the sentence uttered; secondly, it must be the weakest content satisfying these conditions. On this account, what is said can coincide with minimal content, but the two can also come apart such that what is said is something richer.

I will illustrate the account with one of their examples (2016: 776ff). Suppose we are interested in what is said with of an utterance of (5):

(5) Steel is strong enough

<sup>15</sup> For another moderate position, see Stanley (2002).

What is said by (5) will depend on the QUD it is an answer to. We need more information about the discourse context to determine what this QUD is. In this example, (5) is uttered as a response to the following contribution from another agent:

(6) The space shuttle must be able to carry 35 tons of cargo, endure extreme temperatures, and be capable of withstanding severe cyclonic dust storms. So, what material for the shuttle is sufficiently strong? (776).

(6), against the backdrop of the existing common ground, introduces the QUD, and this partially determines the moderate content of the agent's reply in (5). In this case, the QUD is explicitly introduced in (6), and can be represented as follows:

(7) What material for the shuttle is strong enough for carrying 35 tons of cargo, enduring extreme temperatures, and withstanding severe cyclonic dust storms? (777).

Given this QUD, the moderate content of (5) ('Steel is strong enough') is (the minimal content of) (8):

(8) Steel is strong enough for carrying 35 tons of cargo, enduring extreme temperatures, and withstanding severe cyclonic dust storms. (ibid.)

Schoubye and Stokke's account, thus, offers a way to assign truth-conditions to utterances that respects the thought that speakers can assert something richer than minimal content, while also determining a stopping point that prevents the descent into maximalism. The moderate truth-conditional content of (5), given in (8), settles some issues, but leaves others unspecified. And, importantly, the appeal to QUDs provides a principled way to determine which issues are settled, and which are not. This may appear exactly what the defender of the Content Preservation Model of testimony needs but, as I will argue, the appeal to moderate content cannot help.

## 4.2 Moderate positions and testimony

The problem is that even moderate truth-conditional contents are still often too shallow to serve as testimonial contents. To see this, let's revisit Schoubye and Stokke's example. My argument here will employ a similar strategy to Cappelen and Lepore's (2005) argument against moderate contextualism, noted above. However, I use these considerations to argue, not that moderate pragmaticism is false, but merely that it cannot enable the Content Preservation Model to escape the dilemma.

As already noted, there are issues that are left unspecified by the minimal content of (8). For example, for how long must the shuttle carry the cargo, and endure these temperatures? Which thickness or composition of steel has these properties? What counts as a 'severe' dust storm? This is by design (2016: 787): the notion of a QUD is supposed to determine which issues are settled in what is said, and

which left open. The problem for the Content Preservation Model is that, regardless of whether these issues are settled in moderate content, they *are* often settled in testimonial belief and assertion. When consuming the testimony proffered in (5), for example, it's unlikely that the hearer would form a testimonial belief that is true even when the steel can only withstand extreme temperatures for 10 s, say, or when it must be 3 kms thick in order to do so. Rather, her interpretation of the utterance will rule out many further epistemic possibilities than are settled in (8): because the conversation concerns a space shuttle, the steel will need to maintain its integrity for a great many years, and there is a limit to how thick it can be. Although these details are not pinned down in what is said on this account, they *are* things that hearers typically have implicit beliefs about in many discourse contexts, and these beliefs will direct their interpretation of the utterance and, thus, the richness and specificity of the testimonial beliefs that they form. Similarly, the speaker likely wishes to offer testimony that settles such matters as well. Otherwise, her contribution is not very informative – it would eliminate few epistemic possibilities for her audience.

An objector may point out that the sorts of issues identified above – the thickness and composition of the steel, the duration for which it must withstand heat, etc. – are indeed settled in the moderate content of the utterance. That is, in the context under consideration, these issues would be addressed by the QUD. For this reason, they would also be settled in what is said. Schoubye and Stokke gave us a simplified example to demonstrate the structure of their account. Once we fill out the details, the objector may say, we will see that these issues would be specified in the truth-conditional content of the utterance in the relevant contexts. Thus, moderate content is a good candidate for testimonial content after all.

This may be true. However, it is of no use in escaping the dilemma. The problem is that the more details we must pin down in what is said, the less likely it is that the hearer will be able to recover this content rather than something similar. In identifying these additional effects of context on the testimonial content, we're travelling ever further from the information available in the surface form of the sentence and the information explicitly added to the common ground in prior discourse. The hearer must then rely more heavily on her own network of background beliefs to interpret the utterance. Humans are good at this up to a point: we can (subpersonally) draw on a lifetime's worth of knowledge in order to construct impressively rich interpretations using remarkably brief utterances as stimuli; however, the upshot of the volume and complexity of our background beliefs, as emphasised in Sect. 3, is that our intended message will rarely be perfectly recovered by our audience, whose own background beliefs and interpretative resources will always differ, if sometimes only slightly, from our own. Given this, moderate accounts offer just the same dilemma that the Content Preservation Model is trying to escape: if moderate contents are easily recoverable from an exchange, they will seldom be rich and informative enough to serve as plausible objects of testimony; but, to the extent that they are rich enough, it will be difficult for the hearer to recover precisely what was asserted, even if she can recover something similar. It is for this reason that this problem will generalise to other moderate approaches. Importantly, this issue is not a contingent feature of the literature: it is not that we simply haven't discovered the right theory of content yet. Rather, these two properties – shareability and informativeness – pull



us in different directions. Thus, (for most utterances) there is content that is easily shareable, and there is content that is informative, but there is typically no single content that possesses both of these properties simultaneously.

It is worth noting that sacrificing informativeness is not the only way to improve shareability. A speaker could attempt to be as explicit as possible in the surface form of her utterance, selecting a more complex sentence, and thereby reducing the gap between minimal content and explicature. As explained in Sect. 3, many maximalists suggest that it is impossible to *fully* encode one's thoughts in language, thus there may be a limit to the degree of shareability that could be won through increased precision (Moreover, extremely precise speech can be difficult to correctly interpret in its own way). However, the more important point is that we do not do this. Rather, it is a feature of the way humans use language that we usually choose to be far less explicit than we could be: we typically select sentences whose linguistic meaning significantly underdetermines what we mean to convey, except perhaps in very specialised contexts, such as in law (cf. Borg, 2019: 522; Carston, 2002: 30). The explanation, according to maximalists, is that, even if possible, the effort that would be involved in attempting to be fully explicit in speech (and in interpreting these more complex utterances) is simply not necessary: the level of similarity achieved in communication is often 'good enough' for many communicative purposes (Carston, 2002: 46). Thus, the fact that our utterances do not have a kind of content that is simultaneously shareable and informative is to some extent driven by communicative efficiency.

One might wonder, if informative content is not typically preserved in communication, what explains the prevailing allegiance to the Content Preservation Model amongst epistemologists (and, perhaps, lay speakers)?<sup>16</sup> One explanation may be found in the literature on psychology of language, which suggests that agents routinely misjudge the extent to which their communicative attempts succeed. Regarding speakers, Keysar and Henly (2002) suggest that agents often overestimate how well they have been understood by an audience, and that this may constitute a systematic source of miscommunication, which goes unnoticed. Regarding hearers, Drożdżowicz (2022) argues that the quality of linguistic comprehension may be far worse than agents realise: hearers routinely form inaccurate and imprecise representations without recognising their mistakes (for example, failing to resolve ambiguities or assign referents). Her argument primarily concerns communication that aims at maintaining the flow of dialogue: the idea is that representations that roughly approximate the speaker's message may be 'good enough' for this purpose, and so the language comprehension system can rely on quick, yet error-prone, heuristic processing rather than expending further cognitive resources to produce a more accurate interpretation (ibid. 12–13; Ferreira & Patson, 2007). Drożdżowicz argues that it is a functional feature of the comprehension system that it operates with imprecise representations, and tolerates mistakes, without this being transparent to the agent: this allows interlocutors to maintain the flow of conversation with minimum effort and interruption. The system is also capable of deeper processing,

<sup>16</sup> Thank you to an anonymous reviewer for this question.

which produces detailed interpretations, but this is more resource intensive (Karimi & Ferreira, 2016). Our attempts to recover informative testimonial content may require this extra effort. However, Drożdżowicz (2022: 14) suggests that her account of why we often fail to notice inaccuracies when maintaining conversation may be relevant to testimony too: the price of the efficiency gained through quick, ‘good enough’ processing is that we may, often without realising, fail to recover the precise message intended by the speaker (2022: 13).

In addition to this feature of the comprehension system, there are further reasons why we might not notice content mismatch in testimonial exchanges. Drożdżowicz points out that we are rarely forced to demonstrate how well we have understood an assertion and thus we don’t often receive explicit feedback on the quality of our interpretations – indeed, this would be considered rude (2022: 12; Karimi & Ferreira, 2016). An additional consideration comes from Peet (2016: 407), who points out that our interpretations, when incorrect, may often be close to the truth, making it less likely that we would notice the mismatch or deem it important enough to call attention to. Finally, I would add that a lot of the testimony we consume comes from sources (e.g., television, books, websites) which offer little opportunity for dialogue to facilitate uncovering and minimising misunderstanding. These considerations suggest that it is not necessarily surprising that failures of maximal content preservation are somewhat opaque to us. Drożdżowicz (2022: 16ff) notes that agents can attempt to improve comprehension through post-hoc deliberation or further dialogue if mistakes are uncovered, but this may not be necessary, depending on one’s communicative purposes. Indeed, just as it is unnecessary for speakers to attempt to construct sentences that fully encode their thoughts, I think it is hard to see how recovering the *exact* maximal content expressed by the speaker (as opposed to something similar) would be a good use of cognitive resources. As I will suggest in Sect. 6, testimonial reliability may simply not require this much accuracy and effort.

## 5 Alternative approaches

I have argued that there is no view of truth-conditional content that can support the Content Preservation Model of testimony. In this section, I consider whether this model may be salvaged by appeal to alternative views of communication.<sup>17</sup> The idea is that, although some of these views differ from the Content Preservation Model as stated, if they amount to no more than minor modifications, this may be seen as a victory for the status quo.

According to one alternative model, although the maximal content of the speaker’s assertion is not fully preserved in communication, some *parts* of it may be. Abreu Zavaleta (2021a) presents a view with this structure. He argues that information can be transmitted in a communicative exchange even when the speaker and hearer have different beliefs regarding the truth-conditional content of the assertion.

---

<sup>17</sup> Thank you to two anonymous reviewers for each of these objections, and also for suggesting some potential replies.

Drawing on work in truthmaker semantics (e.g., Fine, 2012), he suggests that we understand this transfer of information in terms of relevant entailment: where two contents with different truth-conditions share a relevant entailment, the content of this entailment is transferred to the hearer even when the content of the speaker's assertion is not perfectly preserved. Although Abreu Zavaleta does not present this as a view of testimonial content, it may seem natural to apply it in this way. On this proposal, testimonial contents are identified with relevant entailments: they are located in the overlap between the speaker's assertion and the hearer's interpretation.

There are two related issues facing this 'overlap' proposal. Firstly, the view must maintain that interlocutors systematically misidentify testimonial content. On this view, the testimonial content is, not the content of the speaker's assertion,  $p$ , nor the content of the hearer's interpretation,  $q$ , but the area of overlap comprised of relevant entailments common to  $p$  and  $q$ . The problem is that neither interlocutor is in a position to discern precisely which entailments these two contents have in common: if the hearer knew that  $r$  was the richest entailment common to  $p$  and  $q$ , she would believe  $r$  and not  $q$  (based on the testimony). It may be that the hearer can reliably identify some common entailments – for example, in coffee-making contexts, perhaps she can confidently rule out the ketchup-milk worlds from (3). However, although she may gain knowledge of these entailments via the exchange, she will also come to believe many entailments of  $q$  that are not shared with  $p$ . Moreover, as it is  $q$  that is her interpretation of the testimony, it is  $q$  that she will *treat* as the testimonial content, and  $q$  that she will use as the basis for assertion if she wants to pass on the testimony to further links in a testimonial chain. Note that, where the interlocutors have very different perspectives on the context of utterance, the area of overlap might be very minimal such that the content(s) of the hearer's testimonial knowledge is both uninformative and significantly different from the content that she takes herself to have come to know via the exchange.

This leads to the second issue. As noted, it is part of traditional approaches to testimony that testimonial content can be passed down through testimonial chains that connect later links to an initial testifier, who possesses non-testimonial warrant for this content. On the present proposal we lose this feature. The problem is that relevant entailments will vary between different links in the testimonial 'chain'. That is,  $p$  and  $q$  may share a relevant entailment,  $r$ , but when the agent who recovers  $q$  from the exchange (and thereby comes to know  $r$ ) attempts to pass on her knowledge (which she takes to have content  $q$ ), the next link may recover some new maximal content,  $t$ , and there is no guarantee that  $q$  and  $t$  will have  $r$  in common. Indeed, the only content guaranteed to be preserved across the whole chain is the minimal content of the assertion. Thus, although some content is preserved at each link, we lose any guarantee of 'chain-wise' preservation of informative content. Because of this we can no longer make sense of related phenomena such as buck-passing, whereby the agent, when challenged, defers justification for her belief to earlier links in the chain. These consequences are not necessarily a reason to reject Abreu Zavaleta's proposal, which is simply a model that represents divergence and overlap across interlocutors' varying interpretations; rather, it's reason to think that this view, if employed in the foundations of a theory of testimony, is not a minor amendment to the Content Preservation Model. It's a competing framework, with significantly

revisionary consequences for our understanding of testimony – indeed, Abreu Zavaleta (2021a: 158) presents his approach as revisionary, describing the phenomenon captured with his proposal as merely ‘communication-like’.

Another model of communication is proposed by Buchanan (2010), who aims to capture the idea that a speaker is often indifferent between many similar interpretations of her utterance. On Buchanan’s view, propositions are not the objects of speakers’ communicative intentions. Rather, what is speaker-meant is a restricted proposition-type: a propositional template, which can be filled out in different ways, resulting in a range of different complete propositions.<sup>18</sup> The range of ways in which a template can be completed is contextually constrained by the speaker’s intentions. According to Buchanan, there is no one proposition that a hearer must recover from the exchange in order for communication to succeed: so long as the hearer constructs a proposition from the template that falls within the range deemed admissible by the speaker, she counts as having understood the utterance (2010: 358).

Buchanan’s approach may seem like a promising way to maintain content preservation because it makes this condition easier to satisfy. However, I think the view nonetheless confronts the first horn of the original dilemma: content is not (typically) preserved on this proposal and thus testimonial success is rare. The reason is that, where the speaker and hearer have differing perspectives on the context of utterance, the hearer typically won’t recover a proposition within the range licensed by the speaker, even though she has a broader range of options to choose from. A related problem is raised by Peet (2016: 413) when considering a Buchanan-style response to the recovery problem. Peet argues that, due to their epistemic limitations, hearers in recovery problem cases would still be at risk of recovering propositions that fall outside of the restricted type intended by the speaker. I think we can appeal to the notion of informativeness again to make a more general point about content preservation: the reasons for thinking that maximal content is not typically preserved in communication on the simple Content Preservation Model are also reasons for thinking that hearers will typically *not* recover a proposition of the right type, on Buchanan’s model. We can return to example (3) (‘There is milk in the fridge’) to see this. To be informative, the various completions of the restricted proposition-type intended by the speaker must settle a range of issues not reflected in the surface form of (3) including the amount of milk, what counts as milk, the manner in which it is ‘in’ the fridge, the freshness of the milk, etc. Suppose the speaker thinks that the limit for milk-freshness operative in the context is ‘refrigerated for 10 days’, whereas the hearer thinks that stricter standards are in play – e.g., ‘refrigerated for no longer than 3 days.’ In this case, the contextually-restricted proposition-type that the speaker intends will be bounded by her perspective on the context of utterance; but the hearer’s interpretation will be guided by her own, differing perspective. Under these circumstances, no matter how indifferent the speaker may be regarding certain aspects of the admissible completions (‘the fridge in the kitchen’, ‘the communal fridge’, ‘the fridge with the dent’, etc.), the hearer will not recover a proposition of the right type. If the speaker utters (3) on the basis of her

<sup>18</sup> Peet’s example (2), from Sect. 3, offers an example of potential completions of ‘There isn’t any food’.

knowledge that there is 5-day-old milk in the fridge, the hearer is not even in a position to recover a content that is *true*. We can accept that speakers are indifferent with respect to a range of permissible interpretations of their assertions, then, but to allow this is not to claim that interlocutors thereby converge on the standards they deem relevant in the context of utterance. This problem is particularly pronounced if we consider that the sorts of cases a theory of testimony aims to capture centre radical communication cases: those in which the interlocutors have little information regarding one another's contextual assumptions.

The second issue is that, like the overlap view, Buchanan's proposal should be classed as a competitor to the Content Preservation Model rather than a minor amendment to it. And, just like the overlap view, the reason is that Buchanan's proposal must also give up chain-wise content preservation. I have argued that content preservation will often fail on Buchanan's view. However, in cases in which it succeeds, the interlocutors may still have different perspectives on the restricted proposition-type expressed.<sup>19</sup> This is because a single proposition may fall under many different restricted types. Because of this, even when the hearer does recover a proposition of the right type, in attempting to pass on her knowledge to a new audience, there is no guarantee that she will express the same restricted proposition-type as the original speaker. As each link in the chain may express differing types, this allows the range of admissible interpretations to shift with each exchange. The proposition-types view, then, in addition to failing to maintain widespread 'link-wise' content preservation, requires substantial revisions to our traditional conception of testimony.

I have argued that these first two responses should be seen as competitors to the Content Preservation Model. However, there is one further approach that promises to maintain it: perhaps hearers can recover maximal content 'parasitically'. On this proposal, recovery of maximal content bypasses the usual mechanisms for interpretation, which would normally proceed via pragmatic enrichment of a minimal representation, and is instead achieved by the hearer simply intending to token just whatever the speaker meant with her assertion. The content of her testimonial belief is thus parasitic on the content of the speaker's testimony such that it is automatically preserved, even in the face of contextual variation (Cappelen & Dever, 2016; Hawthorne & Magidor, 2009).

Contextual parasites would indeed secure maximal content preservation. However, the price of content preservation, on this view, is to render this content inaccessible to the agent. Although the agent can mentally token the right content, it is inferentially disconnected from her other beliefs: she does not know what follows from it, what constitutes evidence for it, or how to act on it.<sup>20</sup> This issue is in some respects analogous to the unformativeness worry that faces minimal content: although, unlike minimal content, the information in parasitic content is *there*, it cannot be extracted and, thus, like minimal content, it closes off few epistemic possibilities

<sup>19</sup> A related point is made by Abreu Zavaleta (2021b: 103ff).

<sup>20</sup> Moreover, she will often also form a non-parasitic interpretation, which she will use as the basis for reason and action instead.

for the agent, at least from her perspective. For parasitic content, this brings with it further epistemic problems. Pollock (2021a) argues that, if an agent does not have access to the inferential properties of a testimonial content, she will be insensitive to counterevidence for this content, and thus her testimonial belief will be unwarranted on the grounds that it can satisfy a no-defeaters condition only trivially. Relatedly, it is unclear that an agent could use a content acquired parasitically as the basis for testimonial assertion. To return to the thought from Graham (1997), testifying is supposed to involve the speaker offering information that she takes to be relevant to her audience. But, if testimonial content is opaque to the agent, she is not in a position to identify whether it is relevant information in new contexts, which may differ significantly from the original context in which the testimonial chain began. These considerations suggest that beliefs acquired parasitically, although they preserve maximal content, are not good candidates for testimonial belief and assertion.

## 6 Conclusion

I have argued that the Content Preservation Model faces a dilemma: either testimonial exchanges are rarely successful, or testimonial contents are typically uninformative. In the previous section, I argued that alternative approaches to communication cannot rescue this traditional approach to testimony; but does rejecting content preservation avoid the dilemma? This depends on the extent to which agents can form *reliable* testimonial beliefs in the absence of content preservation. It is beyond the scope of this paper to answer this question. My aim has been to problematise prevailing assumptions about the communicative foundations of testimony rather than to argue in favour of an alternative positive view. However, I will end with some reasons for optimism regarding this issue.

Although Goldberg (2007) has argued that testimony requires content preservation, more recent work suggests that his position is too strong. Both Peet (2019) and Pollock (2021b) present views on which reliable testimonial belief formation does not require shared content. Moreover, there is now a wide variety of potential alternatives to the Content Preservation Model in the philosophy of communication literature. We have already seen two examples of this, but there are more. Bezuidenhout (1997) suggests a graded approach to communicative success; Davies (2021) argues that hearers can recover parts of propositions; there are several views, like Buchanan's, which offer alternatives to the traditional propositional view of communication (Abreu Zavaleta, 2021b; Belleri, 2016; Bowker, 2019); and Abreu Zavaleta (2021a) presents a further 'communication-like' phenomenon that appeals to overlap in the actual truthmakers of different contents. The epistemic implications of embedding these models in a theory of testimony have, in most cases, not been investigated. I hope to have demonstrated that these approaches deserve serious consideration as alternatives to the Content Preservation Model. As we have seen, these models may require revisions to our conception of the role of testimony in our epistemic ecology; but this, in itself, does not entail that the reliability of testimony is significantly undermined. This remains an open question. Moreover, it is a pressing

one: if a suitable alternative to the Content Preservation Model is not forthcoming, *all* theories of testimony must choose between the two horns of the dilemma.

**Acknowledgements** I am grateful to Fintan Mallory, Steffen Koch, Delia Belleri, Sigurd Jorem, and Mirela Fuš for comments on earlier drafts of this paper. Many thanks also to audiences at the University of Oslo, University of Glasgow, and University of Hong Kong. This work was supported by Norges Forskningsråd (315066).

**Author contributions** There is one author for this paper and this author contributed 100% of the work.

**Funding** Open access funding provided by University of Oslo (incl Oslo University Hospital). The research for this article was supported by Norges Forskningsråd (315066).

**Data availability** Data sharing is not applicable to this article as no new data were generated or analysed as part of the work.

## Declarations

**Conflict of interest** The author declares that they have no competing financial or non-financial interests to disclose.

**Ethical approval** The work for this article did not require studies involving human or animal subjects or require evaluation by an ethics committee.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

## References

- Abreu Zavaleta, M. (2021a). Communication and variance. *Topoi*, 40, 147–169.
- Abreu Zavaleta, M. (2021b). Communication and indifference. *Mind & Language*, 36, 81–107.
- Audi R (2002) The sources of knowledge. In: Moser (ed) *The Oxford handbook of epistemology*. Oxford OUP
- Audi, R. (1997). The place of testimony in the fabric of knowledge and justification. *American Philosophical Quarterly*, 34, 405–422.
- Belleri, D. (2016). The underdeterminacy of sentences and the expressibility of our thoughts. *Dialectica*, 70, 29–48.
- Bezuidenhout, A. (1997). Pragmatics, semantic underdetermination and the referential/attributional distinction. *Mind*, 106, 375–409.
- Bezuidenhout, A. (2002). Truth-conditional pragmatics. *Philosophical Perspectives*, 16, 105–134.
- Borg E (2007) Minimalism verses contextualism in semantics. In: Preyer & Peter (eds) *Context-sensitivity and semantic minimalism*, Oxford, OUP
- Borg, E. (2004). *Minimal Semantics*. OUP.
- Borg, E. (2019). Explanatory roles for minimal content. *Noûs*, 53, 513–539.
- Bowker, M. (2019). Saying a bundle: Meaning, intention, and underdetermination. *Synthese*, 196, 4229–4252.
- Buchanan, R. (2010). A puzzle about meaning and communication. *Noûs*, 44, 340–371.



- Burge, T. (1979). Individualism and the mental. *Midwest Studies in Philosophy*, 4, 73–121.
- Burge, T. (1993). Content preservation. *The Philosophical Review*, 102, 457–488.
- Cappelen, H., & Dever, J. (2016). *Context and communication*. OUP.
- Cappelen, H., & Lepore, E. (2005). *Insensitive semantics*. Blackwell.
- Carston, R. (2002). *Thoughts and utterances*. Blackwell.
- Carston, R. (2009). The explicit/implicit distinction in pragmatics and the limits of explicit communication. *International Review of Pragmatics*, 1, 35–62.
- Clark, H. (1996). *Using language*. Cambridge University Press.
- Coady, C. A. J. (1992). *Testimony: A philosophical study*. OUP.
- Davies, A. (2019). Testimonial knowledge and context-sensitivity: A new diagnosis of the threat. *Acta Analytica*, 34, 53–69.
- Davies, A. (2021). Communicating in contextual ignorance. *Synthese*, 199, 12385–12405.
- Drożdżowicz, A. (2022). Making it precise—Imprecision and underdetermination in linguistic communication. *Synthese*, 200, 219.
- Elgin, C. (2002). Take it from me: The epistemological status of testimony. *Philosophy and Phenomenological Research*, 65, 291–308.
- Faulkner, P. (2007). On telling and trusting. *Mind*, 116, 875–902.
- Ferreira, F., & Patson, N. D. (2007). The ‘good enough’ approach to language comprehension. *Language and Linguistics Compass*, 1, 71–83.
- Fine, K. (2012). Counterfactuals without possible worlds. *Journal of Philosophy*, 109, 221–246.
- Fricker, E. (2006). Testimony and epistemic autonomy. In J. Lackey & E. Sosa (Eds.), *The epistemology of testimony*. Oxford: OUP.
- Fricker, E. (2012). Stating and insinuating. *Proceedings of the Aristotelian Society, Supplementary*, 86, 61–94.
- Gerken, M. (2020). A transcendental argument from testimonial knowledge to content externalism. *Noûs*. <https://doi.org/10.1111/nous.12356>
- Goldberg, S. (2006). Reductionism and the distinctiveness of testimonial knowledge. In J. Lackey & E. Sosa (Eds.), *The Epistemology of Testimony*. Oxford: OUP.
- Goldberg, S. (2007). *Anti-individualism*. Cambridge University Press.
- Graham, P. (1997). What is testimony? *The Philosophical Quarterly*, 47, 227–232.
- Hawthorne, J., & Magidor, O. (2009). Assertion, context, and epistemic accessibility. *Mind*, 118, 377–397.
- Karimi, H., & Ferreira, F. (2016). Good-enough linguistic representations and online cognitive equilibrium in language processing. *The Quarterly Journal of Experimental Psychology*, 69, 1013–1040.
- Kenyon, T. (2013). The informational richness of testimonial contexts. *The Philosophical Quarterly*, 63, 58–80.
- Keysar, B., & Henly, A. (2002). Speakers’ overestimation of their effectiveness. *Psychological Science*, 13, 207–212.
- Lackey, J. (1999). Testimonial Knowledge and Transmission. *The Philosophical Quarterly*, 49, 471–490.
- Lackey, J. (2008). *Learning from words*. OUP.
- Cappelen H & E Lepore (2007) Relevance theory and shared content. In: Burton-Roberts (ed) Pragmatics, Palgrave-Macmillan.
- McMyler, B. (2007). Knowing at second hand. *Inquiry*, 50, 511–540.
- Moran, R. (2018). *The exchange of words*. OUP.
- Peet, A. (2016). Testimony and the epistemic uncertainty of interpretation. *Philosophical Studies*, 173, 395–416.
- Peet, A. (2019). Knowledge-yielding communication. *Philosophical Studies*, 176, 3303–3327.
- Pollock, J. (2021a). Linguistic understanding and testimonial warrant. *Erkenntnis*. <https://doi.org/10.1007/s10670-020-00362-w>
- Pollock, J. (2021b). Content internalism and testimonial knowledge. *Inquiry*. <https://doi.org/10.1080/0020174X.2021.1977691>
- Recanati, F. (2004). *Literal meaning*. Cambridge University Press.
- Roberts, C. (2012). Information structure in discourse: Towards an integrated formal theory of pragmatics. *Semantics & Pragmatics*, 49, 1–69.
- Schoubye, A., & Stokke, A. (2016). What is said? *Noûs*, 50, 759–793.
- Sperber, D., & Wilson, D. (1986). *Relevance*. Blackwell.
- Stanley, J. (2002). Making it articulated. *Mind & Language*, 17, 149–168.
- Williamson, T. (2000). *Knowledge and its limits*. OUP.



Zagzebski, L. (2012). *Epistemic authority*. OUP.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.