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ORIGINAL RESEARCH

How to do things with insecure extensions

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Abstract

The multi-purpose of publicizing a scientific consensus includes a communicative strategy by which scientific institutions accommodate the weighty social and economic demands to demonstrate they are collaborating and cooperating with non-scientific sectors of society, relying on a wide range of spokespeople and representatives to carry out the delivery of their consensus in formal, institutionally arranged, professional and impersonal public settings. I investigate the conditions and presuppositions that make it possible for a research consortium to contribute indirectly to public discourse beyond the presentation of empirical data and theoretical speculations routinely associated with knowledge-producing collectives. The baptismal action of researchers in selecting a designative name to announce a new discovery of virus species and species variants does not follow the rigorous regulations that standardize all names of taxonomic categories in other biological sciences as well as higher order taxa in virology. It is argued here that the lack of clarity in the denotation of the term 'Ebola' (in epidemiological reports from West Africa throughout 2014–2016) serves the purpose of shifting a receptor's understanding of a statement from its explicit assertive point to an implicit declarative, commissive, directive or expressive, covertly delivered point. Specialists of nomenclature concerned with quality assurance regard this lapse in standardization as a consequence of human fallibility demanding urgent intervention. Here it is proposed instead that the occlusive effect of a technical descriptive name may serve an important communicative function.

Keywords Indirect speech acts · Group speech · Scientific consensus · Viral taxonomy · West African Ebola Emergency Response

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1 Introduction

Among the things that cross-disciplinary research consortia do is to produce a scientific consensus and purvey it for a period of time through mass media in order to serve the varied (and often conflicting) demands and interests of other institutions and the general public around a particular issue. The consortium whose public communications are in focus here is a broad spectrum of researchers and practitioners affiliated with the domains of epidemiology, virology, immunology and public health.[1] As part of their contribution to collaborations with industry and governments world-wide, researchers across these disciplines provide the vocabulary and canonical phrases that enable non-scientific professionals to formulate agendas, write legislation, strategize, rationalise and publicise large-scale initiatives on behalf of global health. It is a commonplace that scientists generate the explanatory models used by engineers and policy makers to strategize *how* global-scale initiatives will be pursued; less familiar are the ways that scientists contribute to the communication strategies that rationalise *why* these initiatives will (or won't) be pursued.[2]

By relying upon recent work in speech act theory to illuminate the felicity conditions that define different kinds of success in scientific communication with non-experts and professionals in other fields, I am following an agenda that has already been set by others. But here we explore the dynamics involved beyond "describing and explaining... [to] convey understanding to nonscientists [*sic*]..." (as examined by Franco, 2019, p. 2). This is because deciding what to do, justifying such decisions, and collaborating to get things done, constitute an orientation towards the future which is distinct from, and irreducible to, predicting and explaining events as they may happen. Instead, we will study how statements of a scientific consensus contribute to the multi-purpose normative discourse involved when proposing, planning, and carrying out large-scale collaborations designed to conform with—or indeed to deviate from—national policies, popular demand, publicised treaties, diplomatic agreements, accords, international resolutions and transnational corporate plans.

[1] Further details of this consortium as a disperse group will feature later in the discussion. The fact that scientists contribute to policy-making discussions is something of a platitude, e.g. adopting Bayesian calculations has long been a focus in natural disaster management (Bradley, 2007). The burden upon scientists to engage in public discourse with social engineers to assuage the impacts of populist movements, irrational forces driven by ideologies, and economic stressors, has been a topic in philosophy of science for decades (Gelfert, 2013, p. 786; Kitcher, 1990, 1993, p. 187; 2008; Lehrer 1977; Levy, 2007, pp. 187–188; Navin, 2013; Resnik, 2008, pp. 220, 227). But the standard philosophical treatment of these normative concerns as 'external' constraints upon the unfettered pursuit of scientific inquiry overlooks the manner in which *non*-expert audiences actively contribute to maintaining the integrity of scientific authority and its products.

[2] Héctor-Neri Castañeda (1975) characterised this contrast in the uses of language by analysing the syntactic grammar of 'practitions' as distinct from 'propositions'. The indirect speech acts studied here feature *practitions* as indirectly conveyed, in the guise of explicit *'propositions'* or what I will steadfastly call 'statements'. Throughout, I use 'statement' in the sense that Searle and Austin indicated 'stating' (in many ways like 'asserting') is something people *do* on a par with 'promising' and 'requesting'. Throughout, the *meaning* of statement *p* depicts what Searle would call the 'speaker-meaning', in contrast with the literal 'semantic' meaning of the sentence *p*. I specify the latter as the 'sentential content' of an assertion. Here the context of use is not restricted to conversations or in-person communications, so I will stop mentioning 'speakers' and 'hearers' subsequently. I thank a blind referee of *Synthese* for pointing out the need to clarify this usage of 'statement'.

As Dang and Bright (2021) have already illuminated, distinguishing the particulars characteristic of different domains of public discourse is crucial to determining what sort of normative criteria apply in a lay audience's uptake of scientific communication. For instance "policy makers" (2021, p. 8190) anticipate a high degree of reliability when inviting experts to deliver their research findings and hypotheses; whereas in contrast, scientists enjoy considerable license when communicating their data and theoretical speculations *to each other* across disciplinary divides. In the domains that concern Dang and Bright, a 'public' audience comprises the broad scope of research communities in touch with each other through highly specialised journals and conferences—contexts where tolerance for defective claims runs very high.

Here we are concerned with public communiqués that Dang and Bright set aside from their focus as "*extra scientific* testimony" which they also dub "public scientific testimony" (2021, pp. 8190–8191). Our attention here will be limited to only one category of scientific statements generated and publicized widely both within and beyond domains occupied solely by specialists, i.e. the initial production and subsequent reiteration of a scientific consensus by a multi-disciplinary consortium of experts, purveyed for general public consumption. I hope to show how these wider lay audiences also exercise considerable latitude through their "prior acceptance" (Ludwig, 2017, 2020a, pp. 51, 55–56, 2020b) of a scientific collective's authoritative verdict, by demonstrating how a non-specialist's 'uptake'[3] plays a crucial role in preserving the integrity of scientific claims when these avowals fall short of the norms of assertion.[4]

Gerken (2020, 2022) has already carefully scrutinized the effects of "scientific consensus reporting" upon lay audiences; and in doing so his classification of experts' public communiqués is more fine-grained than that of Dang and Bright. Gerken (2020) distinguishes "scientific consensus reporting" from other kinds of "public scientific testimony" in order to contrast the relative efficacy of different strategies for overcoming a layperson's undue rejection of a well-established evidence-based hypothesis. He addresses specifically the challenge posed by non-experts who selectively resist certain results of epistemically robust, well-conducted and widely replicated scientific investigations (e.g. into anthropogenic climate change). Although here we also discuss "scientific consensus reporting" to lay audiences, our focus diverges from Gerken's in two ways: firstly, the public audiences in view here are presumed to include the broad mainstay of information consumers who maintain a deferential stance toward avowals encountered in contexts which generally bestow upon these declarations a level of

[3] As the term has gained wider currency and undergone interrogation (e.g. by Lucy McDonald, 2021), I am using 'uptake' to indicate the active or participatory sense in which an illocutionary force "may be more or less indeterminate" (Searle, 1968, p. 416) insofar as it results in part from "input conditions" (Searle, 1968, p. 57) that include "facts about [all] the users of the sentences" (Robert Stalnaker 1973, p. 447). 'Uptake' here contrasts with the sense of "passive uptake" alluded to by Searle (1979a, 1979b, 1979c, 1979d, p. 116). Here, 'uptake' presupposes that the illocutionary force of a published or recorded utterance is not exhausted by surmising correctly the speaker's or writer's intentions in making the utterance (Searle, 1968, p. 416). In institution-speak, it will be shown how illocutionary forces emerge as the outcome of a "joint endeavour" between an initiating scientific institution and variant audiences (cf. Miller, 2016, p. 72)—using intermediate writers and speakers on specific occasions as mules.

[4] This sense of failing to fulfil the norms of an assertion should be compatible with any of the normative models of assertion surveyed e.g. by MacFarlane (2011) especially the plain view proposed by Williamson (1996), but I haven't studied here whether this might hold up in court.

scientific authority that remains beyond non-experts' reproach.[5] These varied publics include scientists accessing public media (while 'off duty') as a subset alongside other groups of professionals and non-professionals exposed to authorised information portals and platforms designed for popular consumption.

Secondly, Gerken (2020) is concerned with overcoming the fallacious rejection of hypotheses that carry as much epistemic weight as those statements which the same layperson does embrace. In contrast, our investigation here focusses on a widely purveyed scientific consensus P which is itself flawed on epistemic grounds—intentionally so. As will be shown, the flaw occurs within the sentential content of P presented as an aggregation of individuals' views who comprise consortium C, for the purpose of reaping P's collective utility. I coin the notion of 'collective utility' as a measure of the value that an apparently empirical statement or assertion P may carry.[6] P is released for public distribution so that whenever its flaw is recognised by an auditor, the statement's collective utility may thereby become apparent, and the auditor will recognise that some alternative, non-assertoric "ulterior" meaning may be taken as indirectly conveyed *in* the asserting, or *by* the asserting of P on a given occasion. Auditors who recognise the statement's implicit 'collective utility' are issued an open invitation, as it were, to interpret the stating of P in light of their own priorities and interests (Searle, 1979b, pp. 46, 47).[7]

I refer to the totality of such a communication stratagem as a *perorative.* A perorative is an indirect group speech act, initially released in a publicly accessible domain as an

[5] Acceptance as a default stance by lay auditors in support of a scientific consensus P (because of the context in which P is encountered) is key in the performance conditions of institutional indirect communication. This will be discussed further by proposing a structure appropriate for this kind of indirect speech act. The existence of this default posture of deference towards consensus-based claims is an essential component of the background presuppositions driving a layperson's "*selective* resistance" which Gerken (2020) scrutinizes, since without a prior recognition of, or concession to, the elevated status enjoyed by scientific consensus reporting generally, there would be no point in *selectively* resisting one particular hypothesis and favouring another—unduly or otherwise.

[6] Accepting P because one is able to cash in the value of its *collective utility* might be inversely proportional to one's Bayesian calculation of the credibility of P. The *less* there is of neutral and impartial evidence available in P's favour, the more its collective utility may increase. P's collective utility increases as the objective counterevidence and growing opposition mounts in its disfavour, because the more conspicuously improbable P is at face value, the better it serves as a vehicle for indirect, non-assertoric messages to a wide range of diverse audiences. And so, generally, the more improbable P appears, the better it serves to indicate to affiliates of consortium C the resilience and strength of other affiliates' adherence to the plans and proposals that the perorative P indirectly conveys. The sentential-content of this kind of indirect speech act bears a value that I am labelling its 'pure' collective utility if there is *no* incentive for individual members of an audience to accept P other than the fact that they believe others do the same. Each then subscribes to the claim "to maintain social affiliation" and remain in good standing (Bjerring et al., 2014, p. 2449). In the absence of new evidence relevant to P pro or con, the pure collective utility of P accumulates merely with the passage of time, as members of an audience who share an acceptance of P are able to convey non-assertive implicit messages with each other. There is insufficient space to pursue this notion of collective utility here, a clear weakness of the proposal overall (cf. Fuller, 2013).

[7] Sometimes an indirect meaning is discerned *in* the writing or speaking of P, although the author's assertion of P was sincere; in such a case the implicit message would be inadvertently conveyed, and realised due to the context of P's being asserted together with facts about the audience's expectations and background beliefs (following Stalnaker, 1973, p. 449). On other occasions, when the speaker is intending to convey her own message *by* saying or writing P, the content of an implicit message by the audience may or may not coincide with what the speaker intended to get across; or indeed more than one implicit message may be conveyed on a particular occasion. These and other variations will be drilled home after the perorative's dynamic structure as a triadic schema is presented in more detail.

apparent assertion, which carries indirect non-assertoric 'collective utility' and thereby serves the varied interests of different auditors whose uptake determines both the content and force of that indirect message. Thus I will push the structure of a perorative as triadic: When a statement P is endowed with the honorific of a scientific consensus carrying implicit subtexts in public domains of discourse, the indirect speech action succeeds as the result of an alignment chiefly between three factors: Firstly, the scientific consortium C's original purpose(s) behind the initial public release of P as their consensus at t_1.[8] Secondly, facts about the printed publications and audio recordings through which P is initially released and reiterated, as socially recognised circumstances that sustain the public's acceptance of P's having been granted the "status function" of scientific authority (cf. Ludwig, 2017). And thirdly, most crucially, are facts about the auditors, including their "prior acceptance of" the conditions accrediting P as authoritative, together with their own priorities through their affiliation with consortium C in a vast array of collaborating non-scientific communities. As will be shown in the sections to follow, the interests of auditors provide a key part of the context in which P's uptake occurs successfully (at t_1 or subsequently) either as an explicit assertion accepted at face value, or re-interpreted as an implicit non-assertoric message transmitted indirectly. The intentions or purposes of the individuals or teams actually responsible for the delivery of P uttered at t_1 (or its reiterations at times $t_{n>1}$) are ancillary to the successful transmission of P's implicit meanings.[9] This marks a significant contrast between indirect face-to-face communication and indirect institutional messaging that occurs discontinuously over time and place.

Arguably, this account is spuriously elaborate. It might seem simpler and clearer to account for peroratives as one of the many kinds of indirection that can be housed in the category of a speaker's perlocutionary force; then we would be done.[10] But the considerations assembled here highlight the gross insufficiency of demonstrating how a perorative succeeds by drawing contrasts drawn between '*in* saying' and '*by* saying'. These classic distinctions fail to capture the force of an institutional conglomerate formally expressing one thing and thereby conveying something else to a public at large. To begin with, the very contrast is overly simplistic: the labels (a) "perlocutionary point" and (b) "illocutionary point" retain the disadvantage of presenting the successful indirect conveyance of a covert meaning as either (a) the result of a specifiable occurrent belief or action brought about in the auditor's conative or cognitive states, or (b) the auditor's simply recognising or understanding the indirection as a result of discerning the *intentions of the particular transmitter* at $t_{n>1}$ rather than appreciating the institutional purposes for having a consensus P *originally* released into the public domain at t_1.[11] As will be shown, neither (a) nor (b) are essential to the success

[8] To avoid psychologisms and an ontologically florid account of group intentional action, I follow Ludwig (2014a, 2014b, 2017, 2020a) by imbuing a consortium C with collective purposes, goals, intentions acquired only through protocols observed by the individual(s) constituting an internal agency authorized to grant that group its goals cf. Ludwig (2014a, 2014b, 2017). But this may be flawed; see footnote 37.

[9] The contingent status of this role of the individual or team who is causally responsible for reiterating the consensus at $t_{n>1}$ will be defended vigorously later on.

[10] I am grateful to a *Synthese* blind reviewer who pressed for a simplifying approach.

[11] We already know better than to confuse the perlocutionary point of a speech act with what has been called the perlocutionary *effects* of a speech act's performance upon the behaviour or beliefs of receptors (Sadock,

conditions of a perorative. It is the interdependency of the originating institution's intention and the audience's (varied) interpretations of that intention as the content of an implicit message that need to be built into the structure of how peroratives convey covert messages without the occurrence of a conversational in-person setting to facilitate the covert meaning of P.

Resisting reliance upon the traditional taxonomy of speech acts to simplify our approach to indirection in public discourse brings to mind some home truths about illocutions and perlocutions which were first mentioned sixty years ago. To begin with—as might be too obvious to warrant mention—these are not mutually exclusive categories of communication; perlocutions and illocutions constitute different "aspects" or "levels" of a *total* speech act (Black, 1952a, 1952b, 1963, p. 223).[12] Further, they are interdependent; the potential of fulfilling a perlocutionary point seems in many cases presupposed by the existence of an illocutionary force (Cohen, 1973). Further still, these classifications may artificially prejudice our search for an individual-centric source of intentions as essential to the satisfaction conditions of a collective non-assertoric speech act. I hope to show that the "nested intentions" (Bach, 2006, p. 149) involved when *institutions* convey indirect messages impersonally are the outcome of intrinsically *en masse* "social" activities, even though at the moment of uptake the auditor's receipt of the message may not engage the presence of others (Bach, 2006, p. 158). In this respect, a perorative's success is akin to casting one's vote in an election booth, or abiding by one's legal marriage vows, or performing a yoga asana as an expression of its five thousand year old Vedic tradition (*contra* Loar, 2006, p. 88).

In the success of a perorative, a jumble of social conventions is at play. A nice starting point of disambiguation was suggested in Jerry Morgan's (1978) classic paper where he contrasted the use of *linguistic* conventions with *culturally determined extra-linguistic* conventions; these latter sometimes characterise how indirections are conveyed *in* saying P. The culturally acquired propensities for interpreters of P are learned through exposure to 'scientific literacy' training; one such is the learned

Footnote 11 continued
2006 p. 68; Searle, 1968, 1976, 1979a [1975]). Roderick Chisholm (1966) is usually cited as the first to point out the impact of deviant causal chains in describing intentional actions. But in the case of a perorative, we should also not confuse its success with the receptor's understanding the local or immediate intentions of the transmitter in (or by) producing the written or spoken reiteration of the consensus. The perorative is successful when the primary purpose or point of the institution's original release of its consensus is understood. Riding piggy back on that understanding may be the transmitter's own agenda; actual examples of this will be discussed later on.In the familiar but perhaps forgotten way introduced by Austin (1975 [1962]) the verbs he identified with perlocutionary acts reflect this interdependency between the source of a consensus and its receptors: to persuade, to intimidate, to convince—each implies an impact on a receptor which is not connoted by the participles to argue, to threaten, or to coax. Thus, to use traditional taxonomy: a perorative might be said to depend upon fulfilment of *either* a perlocutionary *or* an illocutionary point for its success.

[12] According to Austin (1975 [1962] Lectures VII and IX, pp. 101–103) as quoted by Cohen (1972, p. 494), the ease of this confusion is due to the conflation of language 'usage' and linguistic 'meaning' "as a tendency in philosophy... to blur the distinction between locutionary and illocutionary acts... We can now notice that to speak of the 'use' of language likewise blurs the distinction between the illocutionary and the perlocutionary act..." And the blurring of this latter contrast is, according to Ted Cohen, due to Austin's own lack of clarity between the impact of linguistic conventions and uses of language that are not merely linguistic.

disposition (worked very hard here) to preserve a statement's elevated status by reinterpreting it non-assertorically. This may be a species of civility. These and other naturalistic considerations acquired throughout life include the diverse determinants that I take to constitute the basis for the "prior acceptance" by auditors constituting a general public who understand meanings conveyed covertly through official avowals within inter-institutional speech contexts.[13] Rosenthal (1995, p. 195) captures all these learned conventions along a continuum (akin to the spectrum that houses analytic/synthetic truths); he calls these the "performance conditions" of an utterance. Uncannily, in the case of successful peroratives, these performance conditions need not involve any specifiable intentional states of the particular *conduits* or performers (speaking or writing) the utterance of P on a particular occasion, nor do they specify causal effects of P's reception by any particular auditor. P is successful as a perorative when it contributes to "solving a rational coordination problem" that belongs to no one in particular but concerns individuals insofar as they belong to various collectives (Ludwig, 2017, pp. 125–126).[14] This is what I hope to demonstrate.

Perorations as a mode of rhetoric are easily dismissed as fatuous and ancillary.[15] But here they appear to fulfil an important service for scientific consortia responsible for collaborating with government and industry in meeting various publics' often competing demands. A perorative is issued indirectly like an open-ended invitation which has been designed by the producer aggregating a consortium C's consensus. In this case C is regarded as the original source of both the real or apparent assertion P as well as the indirect messages it conveys—invitations, inducements, incentives, warnings, caveats, admonishments, announcements, advertisements, expressions of intent, proposals, and so on.[16] These reiterations of the consensus P are conveyed by various writers and speakers reproducing the consensus either sincerely or on behalf of implicit agendas of their own. Thus consensus P reaches a wide range of diverse interest groups, potential partners and adversaries, who are advancing or exploiting large scale collaborative projects.

[13] Here I apply Ludwig's (2017, 2020a, b) theory of the essential role played by an audience's "*prior* acceptance" of certain conditions and procedures or rules that make it possible for an individual to perform as a proxy agent on behalf of a group.

[14] By employing the image of a 'coordination and collaboration challenge' I imitate Christian List's model of a trade-off between "correspondence and coherence challenges" to solve various "rational coordination problems" faced by institutions generally, as Ludwig describes them. List is concerned (as I am) with how these conflicting demands seeking resolution are faced by collective knowledge producers in particular (List, 2008, 2010, 2012, p. 204).

[15] Wilfrid Sellars (2012 [1962]) anticipated that in the future of his famous contrast between "the scientific image" and its complement "manifest image," the latter type of discourse would gradually be supplanted by the former. But that has not been the case: reliance upon normative and prescriptive vocabulary continues to be used by scientific correspondents for vetting priorities, setting policies, fundraising, recommending and dictating what ought to be done, what shall be done, what needs justification, or reaffirmation.

[16] In this type of total indirect group speech act, the implicit or covert force indirectly transmitted is "open textured" or "essentially contestable" upon an analogy with MacIntyre's (1973) description of some terms used in socio-political vocabularies. See also footnote 26. Allegorically, I suggest that the *forces* involved in a perorative might also be open-textured in the sense that they are over-determined by the several agencies taking part in a complex collective speech act. Examples of this consequence will be explored subsequently. This understanding of peroratives as the intended outcome of an intentionally flawed assertion is consonant with Iñiguez, et al. (2014) who analysed in detail the social utility of different species of lying.

Peroratives are a species of collective indirect speech action because a necessary condition for their implicit meanings to be retrieved is the "prior acceptance" of lay and professional audiences, who thereby pay token tribute to scientific norms of assertion. Lay audiences adopt this posture of deference to scientific authority as a social convention, thus upholding the dignity of scientific declaratives made in certain contexts.[17] When an utterance ostensibly stated has the "status function" of a consensual scientific endorsement yet appears to fall short of generally honoured standards of scientific legitimacy (testability, rigour, replicability, accountability), this signals that an alternative meaning must be intended, so that the audience understands that the illocutionary point is something other than to assert a truth functional statement.

Some theorists of indirect speech action have already shown examples of how semantic content signals a shift or cancellation of illocutionary force.[18] What may be unique in the case of peroratives is that this shifting or cancelling of explicit force can occur guilelessly, i.e. without the actual speaker or writer of the utterance on a given occasion being aware of having brought this shift about. The indirect message might be conveyed between institutions, or between the institution hosting the utterance and the general public e.g. in a fact sheet or an international press release; while the individual, team or panel materially responsible for the publication or recording at $t_{n>1}$ is functioning as a mere conduit, possibly with perlocutionary intentions of their own.[19]

To fix the discussion, consider below the statement **E**, as a specific example of a perorative produced by an interdisciplinary consortium. **E** has been widely promulgated in the public arena, reiterated in specialist literatures spanning the fields of virology, epidemiology, global health, global economics, and global security studies, and never garnering serious contention or resistance from lay publics impacted by international media:

[17] Here and throughout, I am relying heavily upon Ludwig's account (2014, 2017, 2020a, b) of the conditions necessary for "proxy agents" to acquire their status of speaking for a group, and not on their own intentional recognisance.

[18] In relying upon the semantics of a locution (e.g. idiosyncracies of its reference) as contributing to the 'performance conditions' that indicate a written or spoken utterance's illocutionary and perlocutionary force, I am indebted to Lwenn Bussière-Caraes's generously drawing my attention to decades of work on indirect speech acts especially force cancellation: cf. François Recanati (2019), Horn and Bayer (1984), also Asher and Lascarides (2001) and Constantin and Grundmann (2020[2018]). Furhter, Litman and Allen (1990) and Grosz and Sidner (1986) inspire here the avoidance of psychologisms in this analysis of institutional double-talk. As discussed throughout, I take for granted that the determining "felicity" conditions involved here—what I call 'performance conditions' adopted from Rosenthal (1995)—bridge both linguistic and cultural conventions (cf. François Recanati, 2019; Morgan, 1978; Gordon and Lakoff, 1975).

[19] This scenario is not even extraordinary, lending clout to the image of highly specialized individual scientists working as nodes in a vast distributed cognitive network (Huebner, 2014).

E: The 2014–2015 Ebola epidemic in western Africa was the longest and most deadly Ebola epidemic in history, resulting in 28,616 cases and 11,310 deaths in Guinea, Liberia, and Sierra Leone. (National Center for Biotechnology Information)[20]

E has been portrayed innumerable times since 2016, both verbatim and with various adjustments (as will be compared and discussed in some depth before closing this essay). Through this statement of scientific consensus concerning the public health impact of the 2014–2016 West African Ebola Emergency (here referred to as the Ebola epidemic and the Ebola outbreak of 2013–2016, of 2014–2015 and of 2014–2016), the term 'Ebola' has been reinforced in the global arena as one of a number of names referring to a fatal contagion with the most severe symptoms imaginable. Yet the actual referents denoted by the name 'Ebola' vary depending upon its context of use, both temporally and geographically.[21] Explicit norms of scientific transparency and accountability denounce the use of technical vocabulary in this way, while implicit norms sustain it. For what **E** loses by way of carrying cognitively significant value due to its lack of testability, it gains in collective utility.[22] The particular consensus **E** marshalled as an illustration here accomplishes this because it commits an acute reference infelicity.[23]

To show this, the plan of the paper is as follows: In the next section two, detail will be devoted to the history of the vagaries in usage characterising the term 'Ebola'. Section three will clarify the sense in which a loosely defined, cross-disciplinary, non-centrally governed consortium can be called a group whose consensus (in this case **E**) is first released and then reiterated. The purpose in section three will be to draw attention to the variety of ways that someone can be authorised as a reliable spokesperson for stating scientifically authoritative claims such as **E,** thereby publicly communicating various other kinds of non-assertoric message, with or without being aware of doing so. This

[20] Retrieved initially in 2017 and more recently 22nd October 2022 from https://www.ncbi.nlm.nih.gov/books/NBK441685/?report=printable.Integrating Clinical Research into Epidemic Response: The Ebola Experience. Variations have appeared at different times and recur under the aegis of different authoritative agencies. I am grateful for the *Synthese* anonymous reviewer who detected variations of **E** between 2016 and 2022 publication on the Centre for Diseases Control website where 'Ebola' was replaced by 'EVD'. The significance of these and other variants of 'Ebola virus disease' as a referring expression will be discussed later. Contrast with the Center for Diseases Control facsimile of this explicit statement in 2016, now revised so that 'EVD' has replaced 'Ebola', as retrieved 10th February 2023 at https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/cumulative-cases-graphs.html#:

[21] This is the case for referential terms which are the subject of debate and ongoing discovery (Carlson, 2006). The distinctiveness of 'Ebola' is its systematic ambiguity when occurring both in mass media and in specialist literature; as its ongoing referential extension changes, former connotations remain extant.

[22] 'Collective utility' was discussed earlier in footnote 6.

[23] There are other ways a statement might fall short of the rigours imposed upon scientific assertion apart from reference infelicities. A shortfall of this presentation is that it may fail to suggest other sorts of perorative as well; e.g. contrary pairs of statement reiterated conjointly under public health authority (e.g. 'Chloroquine is currently ineffective in prevention of malaria due to drug resistant mosquitoes; women's non-compliance to prophylactic prescriptions of chloroquine is causing the current 9% rate of infant mortality due to malaria in the region.' In another paper I analyse this Moorean paradox authorised and re-issued innumerable times in Ghana throughout 2004, in maternal health fact sheets, public health education campaigns, freely distributed leaflets and newsletters ("How We Keep the Emperor In New Clothes," *Theoria,* special topical issue "Social and Political Theories of Recognition." (Eds.) Abraham Olivier and Chris Allsobrook, *forthcoming* 2024).

authorisation is an essential feature of the preliminary conditions for a perorative to occur—which Searle (1979b [1975]) called the "preparatory" conditions of indirect speech and which Ludwig (2014a, 2017, 2020a, 2020b) refers to as an audience's "prior acceptance" of institutional procedures that confer upon statements the status role of 'scientific authority'.[24]

Section four will extend Searle's seminal analysis of indirect speech action occurring in conversational, informal settings (1979 [1975]) to show how non-conversational, formal settings provide the circumstances allowing institutions to communicate to the general public, or with each other conspicuously albeit indirectly, through their individual representatives or constituents. Extending Ludwig's analysis of institutions' announcements made through proxy agents (2014a, 2017, 2020b), I argue that lay audiences' standing deference is a major contribution to an utterance of a scientific consensus conveying or transmitting implicitly various kinds of illocutionary force. In the right settings, it may be just *in* someone's stating a scientific consensus that an audience member will recognise these further meanings as implicitly intended for the general public or for external institutions which are allied in some way with the institutional or collective source of that consensus.

2 Uncertainty about the reference class denoted by 'Ebola' in statement E

The discussion will next focus narrowly on the contribution made by the varying extensions connoted by the descriptive name 'Ebola' when experts accept **E** without evidence. I am suggesting that *because* the descriptive names 'Ebola' and 'Ebola virus disease' are understood by those experts to carry an uncertain reference, this signals that the statement is meant to be received as a *perorative* declaration rather than as an assertion.[25]

To facilitate study of the contribution made by the descriptive names 'Ebola', 'Ebola Virus Disease', and 'EVD' to the implicit meanings conveyed when sentence **E** is archived in an authoritative setting, the numerals in the predicate (depicting case numbers and deaths respectively—"28,616" and "11,310") should be set aside as approximations. Likewise, the sense of 'cause' invoked by **E** should be understood as a nominal device. As is often understood in the medical sciences, causal claims may minimally indicate that an existing or immanent intervention might induce or eliminate the described effect (cf. Evans, 1978; Feigl, 1953). Bracketing these issues allows us to sustain our focus upon the referential role played by the subject term 'Ebola' in the recognition of **E** as acceptable on grounds other than its relation to the available evidence.

[24] Cf. Stalnaker (1973) and Jay Atlas (2006) for theorists who call these the "presuppositions" or "accommodations" made by lay audiences.

[25] Varieties of referential infelicity have been neatly surveyed by Wolfram (1989, pp. 43–49). In no way should the vagaries discussed here be confused with cases in the same category as 'the present King of France'. As Williamson (1994, p. 41) has pointed out: "to fail to stipulate a value is not to stipulate that there be no value." The same may hold for the wavering denotation of a 'descriptive name' following the usage of Evans (1979, p. 162). Cf. Kripke (1980, 2011).

As is widely conceded among epidemiologists collecting field data, there are overwhelming problems with both the statistical management and analysis of World Health Organisation's authorised inputs from low-income nations, especially during declared health crises. Problems arising from infrastructural shortfalls, alongside undue toleration of lapses in accountability for African data promulgated in the global arena, warrant critical study in their own right (Lauer, 2018; Lauer & Shenton, 2017; Rull et al., 2015). But such concerns will be set aside here, to focus just on the "open-textured" denotation of 'Ebola' in such reportage.[26]

On first blush, 'Ebola' might not appear in any way remarkable, since names of pathogens often modify in their extension as usage develops to reflect new discoveries over the years. In his seminal work on vagueness, Williamson has pointed out that the referents of most terms normally do vary with changes in the context of their use; static extensions for nominals can be expected only "in a logically perfect language" (Williamson, 1994, pp. 39–40).

But in the effort to attain strictly standardised nomenclature for the clarity which is essential in exchanges among specialists, and for optimal efficiency of storage and retrieval in large "electronic databases such as GenBank" (Kuhn, 2017, p. 458), virologists are steadfastly rigorous in the way other category names are established. They adopt the standard nomological rigour observed by experimentalists in all of the other four kingdoms of biological research (prokaryotic or bacterial, mycological or fungal, zoological, and botanical). Notwithstanding the vigorous controversy regarding the meaning of biological 'species' generally, the nomenclature of species is regulated and determined by standards uniformly applied. So, when virologists are away from the laboratory bench and electronic microscope, their taxonomic categories of virus *above* the category of species (these include phyla, genus, sub-genus, family, sub-family) are tightly regulated, and compliance is carefully monitored. Modifications of nomenclature are based upon formal proposals systematically administered, voted upon, and officiated by one regulatory body, the International Committee on Taxonomy of Viruses.

The sole exception to this rigorous control is the naming of physical entities that constitute the membership of all *species* and *sub-species* of actual viruses (i.e. those spatio-temporal entities with causal properties) when they are encountered in the field and laboratory. And this confusion which is peculiar to the nomenclature of viruses is standard, according to specialists in virus taxonomy: only in virology is the naming of newly discovered species unregulated and left entirely to the discretion of research and laboratory teams, so much that "... the ICTV Master Species List cannot be used to look up the names of particular viruses or their abbreviations" (Kuhn, 2017, p. 450). When one penetrates the technical literature, these vagaries in the designated extension of 'Ebola' turn out to be representative of a general "chaotic... confusion between species and their individual members" (Kuhn, 2017, 2019, 2021, pp. 32, 34).

Lamenting the ill gains of laxity in fixing the extension of terms has a laudable history. Mill (2011 [1843, Bk.1, Ch. II, Sect. 5], pp. 44–45) condemned the employ of "indeterminate connotations... even by scientific writers..." as a "perversion of general

[26] MacIntyre (1973, p. 1) attributed to Frederich Waismann the notion of "open textured" concepts functioning in the natural sciences.

language from its purpose."[27] Certainly Rudolf Carnap would concur.[28] Sociologically speculative virologists follow in this tradition of insisting upon maximal rigour and precision. Those who specialise in taxonomy advocate for more thorough uniformity in virus naming; they regard the current "chaotic" process as an embarrassment of human fallibility (Kuhn, 2021, p. 34; Kuhn & Wahl-Jensen, 2010; Payne, 2016), observing that "names appear tightly tied to emotions..." (Kuhn, 2017, p. 452; Van Regenmortel, 2006, 2007).

Alternatively, this chaos might reflect success in resolving the rational coordination problem first mentioned in the introduction. By relying upon a descriptive name that is recognised widely among relevant experts as having unsettled, fluctuating extensions, reiterations of **E** are able to signal a cancellation of the status of its explicit meaning as an empirical assertion.[29]

In general, we will see that whenever **E** is submitted to the public in suitably arranged (non-linguistic) institutionally imposed 'performance conditions' and it fails as an assertion, then the auditor recognises that the consensus's authorised submission is 'prompting' **E** to be understood as emblematising, embellishing, or ornamenting the facts. Failing as an evidence-based assertion in such contexts, instead **E** is augmenting evidence-based credible assertions in order to cajole, alarm, reinforce, reassure, incite, entice, provoke, alert, direct, or instruct. This can be recognised by the auditor whether or not the utterer or writer is aware of having this effect, or even intending to have it. So we can say peroratives that explicitly state a scientific consensus belong to the broader category of shared adages, slogans, mottos, sayings, proverbial idioms, which are accredited not because they are believed to be true, probable, or evidence-based, but because they serve a group's "given purpose" (cf. Stalnaker, 1984, pp.79–81, 2002, p. 716; Gilbert, 1987; Harris, 2016, 2020; Harris et al., 2018; Wray, 2001).

Whether the producer of the utterance at a specific time t_1 or $t_{n>1}$ is aware of this or not, the auditor's background of untutored experience or expertise may lead her to realise the implicit (possibly changing) intentions of the authorities held publicly responsible for **E**. But before considering the tactical advantages of authorities' issuing statements like **E** with *perorative* force, it should be made clear that components of **E**'s sentential content render it susceptible to failure as a straightforward assertion. Following Stalnaker (2002) and Donnellan (1966) I am relying upon the tacit understanding among experts (here, specialists in virology) when I suggest that the subject term of **E** renders its truth conditions amorphous. To do this convincingly,

[27] I am indebted to David Martens for this reference to J.S. Mill as well as for the very title of this paper.

[28] Putnam (1970, 1975, 1983), and Carnap (1956) before him, were early in urging that statements do not carry their empirical significance, e.g. their truth conditions, in isolation from each other. The credibility or empirical significance of statements about Ebola requires regarding them in clusters or bouquets; some of these statements function in the way baby's breath serves as an ancillary to embellish a posy of roses. Nor can the designation of terms in a science be fixed in advance or independently of the changing pool of interests in shared discoveries about facts referred to by those terms. Putnam's example was 'multiple sclerosis' (1983 [1980], p. 70).

[29] Hanks (2007, p. 153) uses the suggestive image of a speaker "cancelling assertive content" in his attack on Frege's opposition of a statement's force and content. He also expanded the elasticity of categorising declarations as imperatival. However, the contrast drawn here between explicit and implicit meanings of a *perorative* should carry whether or not one celebrates dispelling the 'content' / 'force' distinction. See e.g. Condoravdi and Lauer (2022).

however, first I need to share some of the history of using 'Ebola' which accounts for the uncertainty it contributes to the sentential content of **E.**

The label 'Ebola' was originally adopted from the name of a river in central Africa. Those claiming the discovery of Ebola on location in 1977 allocated this name (abbreviated EBOV) to a new category of virus in the family *Filoviridae* (Pattyn et al., 1977; Bowen et al., 1977).[30] From the Democratic Republic of Congo (formerly Zaire), these findings were published as incidental "preliminary communications" (Johnson et al., 1977, pp. 570–571; Pattyn et al., 1977, pp. 573–575), since all the authors of this exploratory remark identified Ebola as pathogenic in humans based upon only a single case, an individual whose liver tissue samples were poorly handled in transit, according to those authors themselves. After its 1977 publication, an independent peer assessor further observed that the electroscopic photographs displayed in this brief correspondence were of extremely low resolution so that it is far from conclusive whether a filovirus was indeed present in the sample, and if so whether its presence was in sufficient quantity to be pathogenic (Rasnick, 2014).

Ebola has never been established as flourishing in vivo for humans. Its morbific effects are undisputed in macaque monkeys, apes, pigs, bats, guinea pigs, and mice (Jaax et al., 1995; Johnson et al., 1995; Jaax et al., 1996; Swanepoel et al., 1996; Leroy et al., 2005; Pourrut et al., 2007; Weingartle et al., 2012; Olival et al., 2013). The 'gold standard' for identifying Ebola as a fatal haemorrhagic fever has been established in macaque monkeys, but not in humans (Muñoz-Fontela & McElroy, 2017, p. 145). So in arable regions of Africa, it would be important to first rule out other known environmental factors as the cause of the horrific symptoms identified with Ebola for human populations. One familiar source of violent death in Africa's subsistence farming communities is acute toxic poisoning leading to likely death with haemorrhaging, fever, vomiting, dehydration, swelling, paralysis, severe tremors, due to the accidental ingestion of chemical pesticides. Another known vocational hazard in African regions suffering the impacts of large scale mining is exposure to heavy metals, poisonous effluents, and radiation (Noe, 2019, p. 275). Metallurgical processing pollutes the atmosphere and drinking water. As in the findings mentioned above, published citings of Ebola in studies of outbreaks in Uganda, the Democratic Republic of Congo, Sudan and Zaire have failed to rule out other possible causes of the observed haemorrhagic fever incidents (Ellis et al., 1979).

Importantly, in the Central African Republic, Chad, Cameroon, the Congo, Equatorial Guinea and Gabon, researchers have discovered Ebola viral reactive antibodies in significantly high percentages of perfectly healthy human populations (McCormick et al., 1987; Gonzalez et al., 1989; Johnson et al., 1993; Gonzalez et al., 2000; Becquart et al., 2010; Wauquier et al., 2010). As is the case with many antibodies, these studies indicate that the filoviral material identified in 1977 as Ebola is carried by healthy humans; Ebola is found circulating in general populations where there is no basis for inferring it has any causal connection whatsoever to deaths associated with symptoms of Ebola Haemorrhagic Fever (EHF).

[30] In the same year, Ebola was also identified in neighboring southern Sudan (Leroy et al., 2011). But in public announcements regarding West Africa Ebola reported in 2014–2016, no association to this geographic location is made.

A random country-wide test for Ebola was conducted in 2010 involving more than five thousand subjects throughout Gabon (Becquart et al., 2010). A significantly high percentage of healthy subjects yielded positive for Ebola, over nineteen percent of these positive test results were in forested areas (where macaque monkeys and apes might be expected to co-inhabit). None of those who tested positive displayed any symptoms of Ebola infection. This led the authors to conclude that Ebola is not actually pathogenic in humans; in most cases it causes no symptoms, corroborating earlier studies. Control of Ebola detected by this diagnostic test therefore would be impossible (Wauquier et al., 2010). Further, the results suggested that there is likely a co-factor that turns a virus which is not harmful in some people into one which is fatal for a high percentage of those who contract it. Alternatively, Ebola testing may be altogether unreliable and perhaps nobody who tested positive in the study was infected. Again, this suggests a co-factor, as yet unknown, would be required to account for fatal morbidity. Given such a high number of false positives, it might be concluded that the observed virus played no role whatsoever in progression to EHF. Hence defining 'Ebola' as causally responsible for human fatalities associated with haemorrhagic fever is still not evidence-based.

Most perplexingly, Ebola's (EBOV) clinical definition has changed markedly from Ebola Haemorrhagic Fever (EHF) in the 1970s and 1990s, to the West African outbreak referred to as Ebola Virus Disease (EVD) as of 2014. 'EVD' was diagnosed clinically in Sierra Leone, Liberia and Guinea, where access to testing facilities remain difficult at best, and reliability of test results is time consuming and dubious. Currently the standard definition of a confirmed case of Ebola (EVD) requires presentation of the following symptoms: headache, fever, dizziness, cough, nausea, bloodshot eyes, rash, joint pain, muscle or body aches, sore throat, weakness, stomach distress, loss of appetite (EU European Center for Disease Control, 2017; World Bank, 2014). These were publicized as early signs of EVD in a precautionary mode from the outset of the declared emergency in West Africa, signalling the public to report to a clinic at once with any of these symptoms. No laboratory test was required to determine a case of Ebola. Yet by clinical definition, these early symptoms of EVD remain indistinguishable from malaria, meningitis, pneumonia, tuberculosis and other upper respiratory infections, typhoid, diabetic shock, and various cases of extreme gastro-enteritis including cholera. Because of regional co-factors, these latter treatable infections are also among the contagions responsible for the highest percentages of fatalities in Sierra Leone, Guinea and Liberia as well as other countries throughout West Africa.

More remarkable still, no bleeding is mentioned in the definition of EVD as of 2014. Thus it is wholly unclear what the relation between the referential extensions of 'EHF' and that of 'EVD' is supposed to be. Both are identified by the label 'Ebola' and as 'Ebola Virus Disease (EVD)', and both may be abbreviated as 'EBOV' throughout the scientific literature and in public press releases. The bewilderment heightens especially because of revelations from a careful study in Sierra Leone among those hospitalised under quarantine with clinical symptoms associated with 'EVD' (Schieffelin et al., 2014). The patients with EVD in 2014 differed markedly from patients diagnosed as suffering from EHF in the 1970s. In this sample of forty-four hospitalised patients

treated as Ebola cases in Sierra Leone in 2014, bleeding was recorded as symptomatic for *only one* of the patients.

How West African Ebola statistical figures were derived depended upon where and how you looked. Since the serum test procedures so frequently yielded false results, the main question doctors considered in diagnosis was "whether and how recently the patient presenting was in—or had exposure to anyone in—Sierra Leone, Guinea or Liberia."[31] Further, as disclosed by 'fact sheets' published on WHO websites and elsewhere during and since the West African outbreak, exposure rates varied dramatically. Those ever actually at greatest risk of contracting Ebola are medical practitioners who handle acutely ill patients; whereas in ordinary public venues, the infection rate of measles is five times greater than Ebola, and influenza spreads twice as fast.[32] Yet in West Africa, since the Ebola crisis was identified as a focus of necessary foreign military intervention and prolonged capture ('quarantine'), people needing treatment for commonly contracted and potentially fatal diseases were compelled to avoid clinic visits for months even after the crisis was 'declared' over. During that period and thereafter, medical doctors, epidemiologists, virologists, demographers, community health practitioners, hospital workers, and many lay people in West Africa would be well apprised of the difficulty in distinguishing between those who might have contracted and died of Ebola, and those who fell sick and died without treatment due to a range of other contagions endemic to the region.

To avoid such undermining effects on primary health care delivery in such circumstances, Ebola tests would never be administered in the United States until typhoid, diabetic shock, and malaria had been definitely ruled out. But in contrast with Texas, in West Africa typhoid and malaria are endemic; so one is unlikely to find any adult who is not carrying antibodies for typhus or who is not carrying some level of malarial parasites. Thus diagnostic uncertainties prevail in the tropics.

It would appear from a brief survey of the relevant sites of global public health communication over the last few decades, a chronological transition from 'Ebola' to 'Ebola Virus Disease' has occurred.[33] But the ambiguity is retained in the CDC website design, just as an example: The layout there, in descending order of access to webpages, left to right, one is directed as follows[34]:

[31] Dr. Bruce Hirsch, North Shore University Hospital in Manhasset New York "How Do Doctors Test for Ebola?" interview by Tanya Lewis, *Live Science* Oct 3, 2014, www.livescience.com/48141-how-doctors-test-for-ebola.html. This warning was issued by the *American Journal of Tropical Medicine and Hygiene* "New study finds malaria, typhoid—not Ebola—biggest health threat for travellers to tropics," released January 16, 2013 by AAAS online at *Eurekalert, the global source for science news.* http://www.eurekalert.org/pub_releases/2013-01/bc-nsf011413.php**.**

[32] As posted by Michaeleen Doucleff and published 2nd October 2014, at National Public Radio (NPR) Public Health blog. Accessed 21 May 2023 at https://www.npr.org/sections/health-shots/2014/10/02/352983774/no-seriously-how-contagious-is-ebola.

[33] I am grateful to a *Synthese* blind reviewer for this observation and for referring me to the online search engine tool which provides tracking access to websites pages previously accessed over many years as the website's content changes over time.

[34] Centers for Disease Control and Prevention (2019) open access website's tool bar. Retrieved 8th March 2022 and again 11th February 2023 from https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/distribution-map.html. See also CDC description of current diagnosis procedure for Ebola retrieved 11th February 2023 at https://www.cdc.gov/vhf/ebola/diagnosis/index.html#:

CDC > Viral Hemorrhagic Fevers (VHFs) > Ebola (EVD) > Outbreaks

Thus the Centers for Disease Control and Prevention prompts the general public to find EVD as a subcategory under the broader umbrella of haemorrhagic viruses, alongside the earlier discovery of a filovirus with different identifying symptoms, the variant Ebola Haemorrhagic Fever (EHF) of nearly 50 years ago.

Despite the heavy toll it takes on the clarity of communicating results and the gross error introduced into databanks, there is apparently value in using statements that fall short of being credible evidence-backed assertions. Instead, the prevalence of such failed assertions suggests they are authorised to perform auxiliary social functions of scientific discourse. As noted by social choice theorists and epistemologists studying groups, assertions may be accepted collectively for a range of reasons even though they are not believed to be true. Correlatively, referring expressions are put to widespread use even though among experts their extensions may be the subject of continued investigation and controversy (cf. Carlson, 2006). 'Ebola' certainly fits the description of a referring expression in metamorphosis. Next, the discussion will be devoted to exploring how the success of **E** as a complex indirect speech act depends jointly upon both the collective author and the collective auditor of **E**.

3 Transmitters and receptors

To isolate the issues at stake, I dub a cross-disciplinary scientific consortium as a "distributed cognitive system" following List (2008, 2012; cf. Huebner, 2014; Giere, 2002). This oversimplification has the advantage of eschewing the distractions of those conative and other intentional states that individuate members of a professional working group. Caricaturing researchers as 'nodes' in a system further focuses attention on the narrowness of their individual perspectives when performing their highly specialised tasks in a large scale scientific project.[35]

I use the term 'transmitter' to dub anyone in the act of conveying a scientific consensus. This could be any of the nodes in the system, working individually, or in teams or panels, anonymously, or conspicuously. But a transmitter need not be a node of this system; it could be someone or a team in any field, professional or otherwise, or a programmed bot, affiliated with the distributed cognitive network in question, and authorized as a publicist or conveyer of their scientific consensus by virtue of the prestige of some *medium* of communication.

A transmitter might be authorised by being appointed, or contracted, or by volunteering as a member of another prestigious non-governmental medical charity or related scientific funding clearinghouse. The image of a transmitter is meant to discourage mistaking discursive outputs or communicative products of the whole system as properties attributable to each (or indeed to any) of the system's constituent nodes

[35] Those who have depicted groups as speaking through their members (yet have presented characteristics quite different from these) include Gilbert (1987), Goldberg (2006, 2016), Goldman (2001), Justin Hughes (1984), Ludwig (2014a,b), and Miller (2016).

(cf. Ludwig, 2020a).[36] This includes the overall conclusions, recommendations, verdicts, judgments, advisories, commitments, expressives, issued by a consortium as discursive outputs for public consumption, whose design might be supervised by a "sub-group" of the distributed cognitive system officially assigned to a public relations detail (Ludwig, 2020a, p. 55, 2017, p. 199).[37]

The purpose of a transmission will vary in accord with the interests responsible for that instance of transmission—that is, the interests of both the consortium who initially posted the consensus, and the range of institutional and professional interests represented by the receptors who interpret that consensus. So when a transmitter publicises a scientific consensus, this may be seen as serving an institutional collective's obligation to serve diverse, often competing interest groups comprising its audience, whether the transmitter individually intends to do so or not.

In light of this diversity of obligations sustained by vast scientific consortia, it would be mistaken from the outset to presume that the uptake of such a scientific consensus will be embraced uniformly throughout a general population. What may be less obvious is that an explicitly stated assertion publicised *as the consensus* of a scientific cohort may itself be diametrically opposed to the individual judgments proffered independently by the very same researchers who constitute that cohort at any point in its history.[38] Even though an appropriate normative model might be established for representing how scientists should adjust their own judgments in light of one

[36] For a consortium of experts, 'acceptance' of P here reflects a flat out binary verdict whether or not to assent or subscribe or reiterate a statement as if it were true—whether or not anyone in that consortium believes it, or to what degree. This is not a novel usage. The contrast between collective acceptance of a judgment *versus* belief has been widely canvassed (e.g. Cevolani, 2014; Cohen, 1995; Wray, 2001); and it is assumed by List (e.g. 2011). Recall that Gilbert (1987, pp. 191–192) claimed this decades ago: "attributing a belief that P to a group is compatible with no one in the group having a relevant personal opinion about P... it is not necessary that *any* member believes P or ever believed it." Here, in developing her point I follow Dietrich and List (2008) and List and Goodin (2001). With respect to asserting a consensus P, a node might accept and propagate P in the sense that a Scottish juror may conclude in earnest that the defendant is not-guilty without believing the defendant is innocent.

[37] This marks a weakness of the presentation flagged in footnote 8: there may loom here the potential for an infinite regress or a vicious circle if I adopt a "deflationary account" (I am borrowing the label from Ludwig 2020a, p. 51 perhaps misleadingly) of how the sub-group acquires an 'official' position by which it designs C's consensus (following Ludwig's account of how an individual acquires the "status function" of being a group's proxy agent). I take for granted that 'intention' here must be a hyperbole, standing in for the outcome of that sub-group's decision making procedure—which again raises the question of what constitutes that sub-group's 'deciding upon' its procedure. If I treat a consortium C's official position about some matter as the *outcome* of a subsidiary sub-group A's (i.e. more than one expert's) authority to aggregate C's official position, then that sub-group A's authority must have become established by protocols enacted by a different sub-group B, which in turn must have been imbued by some over-arching procedure of C which provided B the authority to incur upon A the status of determining C's official position (via mere application of protocols). And so on. An attractive alternative might be a reductionist account of authority and decision-making phenomena which treats groups that pursue their own goals as discontinuous sites of emergent *sui generic* individual agency i.e. rational agency is a time-bound commitment to "unity" of purpose, which ever only exists in limited, chronologically ordered pulses of rationality, each with their own impermanent domains of reference. But I am not equipped to explore this here (see Carol Rovanne, 2019).

[38] A thesis of theory change (that quickly lost currency before attracting a renaissance of argument in its defense) characterised as 'normal' those periods in the career of a research collective when its consensus is definitively stable. See Suppe (1977, pp.633–636) and Levi (1985).

another's commitments, that model cannot in itself secure a formula for determining how to aggregate those experts' judgments in order to *report* their consensus overall.[39]

This point sometimes gets overlooked when the communicative arts employed in scientific literature are in focus. For instance Hyland (1998) illuminated the rhetorical and linguistic devices used by scientists when they groom the presentation of their results across disciplinary divides to suit different communication "contexts" (cf. Atlas, 2006; Stalnaker, 1978, 2002) to address diverse scientific experts. Hyland presumes disciplines are distinguishable from each other by the different shared backgrounds of specialist audiences.[40] But in doing so, he takes for granted that within *one* field there is a discernible "general agreement" (1998, p. 14) shared by the cohort of experts comprising that discipline at a given time, by which the relevant variations *between* disciplines can be reliably tracked. Yet there may be no such agreement. The absence of an incontestable method for aggregating a cohort of experts' consensus is a well-established and widely applied result of social choice theory known as 'discursive dilemma' (List, 2008, 2012; List & Pettit, 2004, 2011).[41]

In this study of peroratives, the specimen under scrutiny (**E**) is a 'consensus' perhaps only in the sense that it is a cross-disciplinary research consortium's 'official position'. The considerations from social choice theory to be shared momentarily presuppose that determining the dominant view within a community of researchers is dependent upon an authorised choice of method among the variety available for aggregating that cohort's majority view; this choice constitutes a kind of acceptance (distinguishable from belief) in light of the resulting aggregation's collective utility.[42] That is to say, what *should* get purveyed as a scientific community's consensus at t is itself subject to dispute. The distinction between belief and publicised acceptance is important in analysing peroratives, because it is in virtue of the detectable contrast between the *pretence* of a cohort group in "general agreement" over **E** *versus* the disparity of views upheld by individual specialists both within that cohort and beyond among its affiliates, that the reiteration of **E** in public and specialist literature conveys more than what its transmission explicitly states. Thus it would be wrong to interpret an expert's publicly conveying a consensus as a perorative (whose sentential content he personally disavows) as a species of lying. In this respect, a perorative is like other proxy assertions in that it need not involve "sincerity conditions" as Ludwig has pointed out for other group speech acts delivered by proxy (2017, pp. 192, 198). It would only

[39] For fifty years there has been considerable controversy among epistemologists and decision theorists over the most appropriate way to capture the essentials of consensus-formation amongst specialists (e.g. Lehrer, 1975, 1985; Laddager, 1977; Lehrer and Wagner, 1981; Levi, 1985; Hardwig, 1985; Harding, 1991; Bradley, 2007; Goldberg, 2011; Wilholt, 2013, 2016).

[40] Hyland detailed five distinct levels of "epistemic presupposition" by which scientific writers themselves gauge significant variations between the shared background knowledge pools of different disciplines (1998, pp. 85–86).

[41] The author is indebted to Kirk Ludwig for drawing attention to the relevance of this social choice theoretical result for exposing the anomalies of global reportage of the West Africa Ebola outbreak, after their presentation by the author in "The anatomy of complexity in scientific collaboration driven by non-evidential criteria for consensus," at the workshop "From Minimal to Complex Collective Actions" hosted by the Center for Social Action, Philosophy Department, University of Milan, 4th September 2017. See Lauer (2022).

[42] See footnote 6.

be professional for a scientist, as it would be for a foreign diplomat, to convey an official position of his institution with which he personally disagrees.

Momentarily, so much for transmitters. I refer to anyone as a 'receptor' who is a recipient of a publicly displayed scientific consensus. When nodes within a distributed cognitive system are reading a fact sheet posted in an airport or clinic, or browsing an institutional website, or watching a televised panel discussion, scanning a research report in a specialist journal, listening to a news bulletin during a coffee break at their research lab table, they are also receptors. When some of these individuals are employed as a team to produce a document for general circulation by the World Bank, or World Health Organization, or Bill and Melinda Gates Foundation, or fundraising for the Global Alliance for Vaccines and Immunisation, or when they are interviewed in their capacity as a principal investigator, or when they provide written material anonymously or as a voice-over for a *Medecins sans Frontieres* website feature, they are transmitters.[43] So the contrast between transmitter and receptor, put glibly, is not ontological. It's a contrast between the kinds of *role* played in the formation of scientific communiqués at the periphery of specialisation, in concert with a general public and other institutions collaborating with scientists to get things done, justifiably where possible. In short, both publicising and accepting scientific consensus may be seen as serving an institutional consortium in the way Ludwig (2014a, 2017, 2020a, b) describes group "announcements" more generally as communicated for a group by a "proxy agent" or "spokesperson" who publicises the "official position" of that group to an audience that recognises the proxy agent as duly authorised.

Here the consensus as a collective's "official position" is explicitly distinguished from reporting a decision, a view, verdict, or judgment, to which every member of the group, or indeed *any* member of the group including the spokespeople themselves, has individually subscribed (Ludwig, 2020a, pp. 46, 53, 2017, p. 140). We will discuss this point in further detail later, using actual examples of experts who in fact have independently disavowed **E** and its variants while having transmitted that consensus **E** on behalf of a consortium at different stages in their careers of speaking publicly and publishing.

To show the indirection involved in conveying a perorative, I suggest that two distinct aspects of the publicity need to be emphasised: firstly, the *setting* in which a perorative is performed at t is crucial; secondly, the role of the receptor's "uptake"[44] of the performance in this setting is central to its overall success. Both these elements take priority over the intentions particular to the transmitter performing the perorative at t.

For the first point regarding the conditions in which peroratives can actually manifest, these are the formal settings whereby institutions, through their transmitters,

[43] Transmitter and receptor are names of different roles; they do not label types of individuals. At different times, or simultaneously, one individual may be both a transmitter and a receptor of **E** as a scientific consensus.

[44] "Uptake" here acknowledges Austin (1962), as well as Strawson (1964, pp. 448–449) and Cohen (1973). Searle (1969, p. 57) refers to this aspect as "intake" when he describes "the conditions of understanding..." for a "[speech] act to be non-defective," whereby the hearer contributes this "input" to interpret the intended non-semantic "output" of the speaker. In determining what counts as the success conditions of a perorative, I hope to show the enduring feature of this "intake" or "uptake" by the general public as audience when a statement conveyed as a scientific consensus imparts auxiliary meanings indirectly.

cooperate with receptors *in absentia*, by authorising markings and recorded sound strings produced by the appropriate agencies. I rely on the work done by Kirk Ludwig illuminating how an individual gains the "status role" of an institution's authorised amplifier (called here a *transmitter*) and how that amplifying agent's authority is reinforced by receptors' "*prior* acceptance" [my emphasis] of the wide range of professional networks of legitimation (Ludwig refers to "legal" networks) through which institutions confer status upon individuals as spokespersons. It is only in the "appropriate circumstances" that [a proxy's doing something]... make[s] it the case that the group has done something" (Ludwig, 2020b, p. 307).

As will be discussed more fully using examples, the transmitter may perform a perorative wittingly or not. The non-linguistic *setting* is everything. The setting constitutes part of a perorative's "performance conditions" (Rosenthal, 1995)—but only insofar as the *receptor* of the perorative countenances that setting. Thus the ordering just introduced—(a) the setting of **E**'s performance and (b) the receptors' contribution to **E**'s performance—is inadvertent, and not due to any priority in the importance of (a) over (b). On the contrary, peroratives are distinctive because of the crucial contribution that receptors make to the success of a scientific consensus as a group's indirect speech action. I try to highlight this next, by drafting the anatomical structure of a perorative as a triadic "interaction" (Ludwig, 2020b, p. 54) or discursive activity "jointly achieved" between scientific consortia, non-scientific institutions, and the general public (cf. Goldberg, 2016; Miller, 2016).

This point about the linguistically external setting in which a consensus is encountered gains weight from an illuminating aside of Brandom (1983, p. 649, n. 8): the interpretations of indirect meanings implicitly conveyed on an occasion of someone's transmitting a scientific consensus derive from facts about the circumstances of its occurrence, not from the explicit sentential content of what has been transmitted, neither from facts about what the transmitter is *intending* to do.[45] So for example, the fact that a statement is published in *The Lancet* 'prompts' a receptor's 'uptake' differently from what the same reader might infer from the fact that the same sentential content appears in sensationalist tabloids such as the United Kingdom's *The Daily Sun* or the United States' *The National Enquirer.* Whether the transmitter is trying for a new job title, or to win a grant renewal, is immaterial to the receptor's uptake. Further, sometimes it is because the receptor does *not* believe the explicit sentential content of the asserted scientific consensus **E**, that she is *thereby* prompted to draw other inferences that follow not from **E**'s semantic content but from facts about the setting of its token assertion—e.g. from the fact that she read **E** in an issue of *The Lancet* published only last month, together with her acceptance of the prestigious status of *The Lancet*. To repeat: facts about the setting of **E**'s transmission provoke the receptor's uptake, not facts about the intentions of the transmitter.[46]

[45] In the footnote Brandom (1983) drew attention to this distinction as a means of differentiating assertions from other declarative speech acts. But he did so in order to set the contrast aside; here I am riding hard on it. Other facts about the transmitter can make a huge difference to a perorative's success, e.g. how he is credentialed professionally—but only as these credentials are appreciated in the receptor's uptake.

[46] Putnam (e.g. 1973, 1975, p. 311) was very early in making this point in his anti-psychologistic account of the intended reference of terms in use by scientists.

When an individual receptor is suitably trained and disposed to exercise a certain kind of decorum, and then encounters the indicators alluded to above, that receptor may adopt a conventionally respectful attitude or stance of epistemic regard towards the statement. This is a voluntary choice the receptor makes, although it might not be a choice deliberated beforehand, and the choice might be habitual due to prior conditioning or peer pressure. People who acquire scientific literacy, like learning good table manners, tend to respond in conventionally appropriate ways to certain textual settings (as specific sartorial choices and management of eating utensils are deemed suitable for different dining situations).

It's important to stress that information consumers in the public domain are not rational agents in the sense of being rule-*following* respondents to stimuli, whose cognitive states are causally determined to apply a set of principles when exposed to certain kinds of stimuli, exhibiting reactions acquired through the kind of upbringing or exposure that generates certain genres of decorum (cf. Morgan, 1978). Rational "acceptance" of a statement's bearing the status of scientific authority does not mean having a disposition to respond in the sense that birds follow a certain flight pattern, nor even in the sense that chess tournament participants follow the game's rules—on pain of being disqualified when caught if they do not.[47] Rather, a receptor's uptake of a scientific consensus involves *taking into account* the norms of epistemic deference, yielding to the authority of expertise learnt through formal education "without necessarily... following or acting in conformity with them" (Chiodelli & Moroni, 2014, p. 162). In this respect it is useful to regard the receptor's exercise of scientific literacy as a "nomotropic" (Conte, 2012) rather than a "rule-following" accommodation. But I do not have the capacity to pursue this important contrast here.

In any case, the indeterminacy of nomotropic collective behaviour is why the conditions of success for a perorative cannot be predictably specified as perlocutionary in the way that canonical taxonomies for speech acts distinguish this level or aspect of a total speech act from its illocutionary counterpart.[48] Sometimes success in conveying the indirect message of a perorative is achieved when the receptor merely recognises the attitude being expressed and nothing more (cf. Austin's "uptake," 1962, pp. 101–102 as indicated by Bach, 2006). The receptor need not follow through by accepting the invitation, nor by heeding the advice, nor even by intending to accept or to heed.[49]

[47] There are a growing number of mechanisms for shaming, delegitimising and marginalising deviant transmitters and receptors (cf. Navin, 2013).

[48] Cf. Devitt and Hanley's Introduction (2006, p. 7): "An illocutionary act succeeds if the speaker's audience recognises the speaker's intentions. As a perlocutionary act it succeeds only if the audience actually fulfills the speaker's request...." Bach (2006, p. 151) agrees: "... getting the hearer to form the correlative attitude is essential to the success of the perlocutionary act." In any case Bach (2006, pp. 150-151, 154, 164 n.11) expects the contrast to be well defined, as do Bach and Harnish (1979). In contrast, a perorative may have nothing at all to do with the attitudes of the transmitter correlating with those of the receptor, who may be remote from or unknown to each other. Further, the mental states of the transmitter may be incidental to the perorative act's success for a range of reasons detailed in the next two sections.

[49] Yet the latter follow-through in the beliefs, actions or intentions of the hearer is the defining feature of a perlocutionary act according to Bach (2006, p. 154). Thus defined, the category of perlocutionary acts cannot include peroratives. Bach and Harnish (1979, pp. 65, 70, 81) countenance indirect illocutionary acts as again distinct from perlocutionary acts: they define the success of indirect illocutionary acts as dependent upon the success of the primary illocutionary act performed by a speaker (1979, p. 65). In contrast, again, the peroratives under scrutiny here may succeed in transmitting some covert message *because* as an explicit

Overall, the multiplicity of variables determining both the output and the uptake of institutionalised indirect messaging that I am calling peroratives render traditional categories of force unhelpful. This lends vitality to the vanguard of speech act theorists who oppose the semantic content *vs.* pragmatic force divide.

Contrary to some received theories of group speech, transmitters may be authorised and properly credentialed to convey a scientific consensus without being a member of the consortium regarded as its original source. It is the professional context of transmission that matters, which is conscientiously and meticulously "... sustained by large scale collective activity" (Ludwig, 2020a, p. 55). Thus the specimens of indirect speech group action under analysis here are publicized in heterogeneous settings, not only by 'insider' forum brands (such as *The Lancet, Science, Royal Society Transactions, New England Journal of Medicine*, Elsevier public medical 'open access' information websites). Peroratives are reiterated pervasively through channels explicitly designed for communication to the general public, e.g. electronic websites sustained conspicuously by affiliated organizations (World Health Organization, U.S. National Institutes of Health's Center for Biotechnical Information, Centers for Disease Control and Prevention, Global Health Impact Fund) and by more generally focussed auspicious information conglomerates (Reuters, Associated Press, The British Broadcasting Corporation, World Bank documents, websites of billionaire philanthropists).

Next I will present more graphically the framework that I dubbed the 'triadic structure' of this kind of indirect group speech act in the introduction. The point is to highlight these two complimentary components—the receptor's "input" and the consortium's initial "output" (Searle, 1969, 1979b)—mediated by the setting in which a perorative is encountered. All three conditions are essential to the successful occurrence of a scientific text-*cum*-subtext: that is, a recorded statement which repeats a scientific consensus explicitly, and by so doing, implicitly conveys non-assertoric communiqués on behalf of the consortium regarded as its source.

4 The anatomy of a perorative

It might seem most appropriate to start with the received blueprint of indirect communication in a conversational setting, involving a speaker who means what he says explicitly, and thereby also means to say something else implicitly (paraphrasing John Searle's classic presentation, 1979b[1975]). Then we could apply this model to indirect communication in formal settings on behalf of institutions. But this will not work to illuminate the case of a perorative. The generic picture of indirect speech will need to be embellished considerably.

The original institutional source of a perorative, responsible initially for its sentential content as a scientific consensus, occurs at t_1; but the receptors' uptake, i.e.

Footnote 49 continued
assertion the performance *fails*. That is, as an assertion the speaker's utterance is understood on the uptake to be flawed—whether or not the speaker was aware of such flaws at the time. (This understanding derives from the communicative-principled reasoning of the hearer, on Bach and Harnish's view, 1979, p. 59). Only then would some "nonliteral" meaning be supposed by the hearer. Exactly this sort of cooperative engagement is how peroratives, as joint corporate actions of collaborating groups via their individual proxy agents, are meant to be analysed here.

Searle's audience "inputs" (1969, p. 57, 1995, p. 141) may occur only months or years later, in the anonymous setting of reading an authorised public information poster in an airport—with many intervening variables affecting the causal chain between output and uptake. Yet these two components do potentially and jointly determine the implicit meaning indirectly conveyed by various transmitters *whenever* the explicitly stated consensus is memorialised in print, or televised, or audio-recorded, at $t_{n>1}$.[50] Since these communication processes are typically delayed and intermittent, the "social interaction" between scientific institutions, their collaborators, and the general public is a discontinuous phenomenon spread over time and space. But it is a jointly accomplished communication all the same (Ludwig, 2020a, pp. 53–54).[51]

The anatomy of a perorative emerges from three distinct sources of its "ulterior" (Searle, 1979b) meaning and message. I've attempted below to highlight the triadic structure introduced from the outset when defining a perorative, where (i.a) is meant to bracket an ancillary, secondary variable, while (i), (ii) and (iii) capture the essentials of a perorative's success—these three would count as the primary vertices in a spatial depiction. I will spare you the diagram and just restate these conditions regimentally as a list of the performance conditions that determine a perorative's occurrence:

(i) facts about the purpose or utility of the *scientific consortium C which originally produced and released publicly*, as its consensus, some official statement **E** at t_1;

  (i.a) contingent, ancillary facts about the intentions or purposes of the token transmitters—individuals, teams, panels—contributing materially (as speaking or writing participants) to the delivery of **E** occurring at t_1 or at any $t_{n>1}$ when **E** is reiterated;

(ii) facts about the *circumstances of* **E**'s *presentation*—i.e. the publications or audio recordings or electronic media—where the consensus (e.g. **E**) is reproduced by some particular agent (individual or group, anonymously or conspicuously) on a specific occasion at any $t_{n>1}$;

and

[50] 'Potentially' here includes those token occurrences of the consensus which may have been transmitted but never encountered by a receptor, such as appearing in an obscure specialist journal which has not been advertised widely as available to the general public through 'open access'. Or the perorative may have occurred in a popular website but in a footnote or on a back page, hence it has been overlooked by readers. These cases are comparable to the plastic pieces manufactured as chess sets that remain stored in a warehouse, as Ludwig (2014a, p. 103 n. 20) discusses the status function of each piece: "... are these not pawns, knights, etc., even if they are never used?".

[51] Searle (1995, p. 96; 2010, p. 57) stressed that collective recognition (e.g. of a transmitter's assertion carrying the authority of scientific consensus, for instance) does not necessarily involve active cooperation. Also, (Ludwig 2017, p. 133) when recounting the central role of an audience's (here, any receptor's) "prior acceptance" of a proxy agent's status, Ludwig stressed that the intentional states attributed to receptors in this collective acceptance "need involve no explicit agreement." Nor is this prior acceptance concerned with the particularities of the individual carrying such status of proxy agent (again following Ludwig, and *contra* Jennifer Lackey, 2018). Nonetheless Ludwig (2007, 2016, 2020a, p. 316) agrees that the clearest formulation of groups' public inter-communications through individual proxy agents is deflationary. His reference to the "we-intentions"—that is, e.g. "policies" (cf. Ludwig 2014a, 2014b) constituting an audience's prior collective acceptance of a speaker as an institution's proxy agent, are traits of the individuals in that audience.

(iii) facts about the *receptors* at the time and place they are exposed to a published, video or audio recorded token of that consensus; including their countenancing of (ii).

A perorative is *successful* when the interpretation of its implicit meaning by receptors matches at least one of the open-textured purposes or intentions determining the consortium's initial release of its consensus at t_1 or at $t_{n>1}$. Those institutional purposes or intentions themselves are likely to change over time, as they are predicated upon what the consortium C gauges general publics (and institutions upon which C's projects depend) need, want, or expect to hear. Consortium C's indirect messaging will alter as events and changing outcomes of research affect C's overall agenda and its material engagements with external institutions. The receptor need only recognise these (changing) intentions of C's release of **E** on any of the occasions when it is reiterated, or the intentions of C's authorised franchises, quite apart from the variety of outcomes intended by the particular *transmitters* reiterating **E** on different occasions. Once the implicit, covert or "primary" meaning(s) (Searle, 1979b [1975]) of this indirect speech act is discerned, it has achieved C's purpose for its being broadcast initially. In his seminal paper, Justin Hughes called this the group's "illocutionary intention" (1984, p. 383).[52]

This is the chief revision to generic analyses of indirect speech acts in conversational settings (e.g. Searle, 1979b [1975]). The material contribution of a transmitter (written or spoken—captured as (i.a) in the list above) functioning as a conduit (formerly the speaker 'S' in Searle's generic indirect speech act) is essential for the *occurrence* of a perorative, but not for its *success*. This is because the particular motives or intentional states that constitute what that individual transmitter wants to achieve or to do *in* saying or *by* reiterating a consensus are neither germane to the consortium's intentions, nor to the receptor's interests which apply when interpreting the subtext of a scientific consensus.[53]

Let me dwell on this point a bit. Suppose the transmitter at $t_{n>1}$ believes the scientific consensus **E** is probable and she sincerely states **E** as such, so that the explicit meaning of her assertive act exhausts her illocutionary point in stating **E**. In this case, the transmitter's purpose is straightforward and plain; the explicitly stated meaning of **E** exhausts her illocutionary point in asserting it. She means no more than she says. Since she has no covert agenda, the transmitter's illocutionary point will vary from the *primary* point or purpose that the *consortium* had for releasing and sustaining **E** as its consensus for public dissemination.[54] The transmitter may not know any better; but

[52] No doubt these intentions of C might be franchised by other institutional affiliates down the road from t_1. Thus the hidden meanings of peroratives are overdetermined. Justin Hughes also regarded it as a condition of a group speech act's occurrence that the speaker "(believes that he/she) knows the illocutionary intention of [the group] and that [his/her utterance] conveys this illocutionary intention" (1984, p. 383). Whereas, in the case of the group indirect speech acts here called peroratives, the transmitters may not be aware of the consortium C's intentions for initially releasing as their consensus an assertion **E** that was and remains broadly controversial even amongst themselves. The significance of such controversies will be explored further momentarily.

[53] Kirk Ludwig highlights this as the "autonomy of proxy agency."

[54] I trust it goes without saying that a consensus which is truth preserving and uncontroversial, when released publicly by C, is meant to do just what it says on the tin; this would clearly not count as a perorative

some receptors belonging to the general public will; so too will receptors representing the consortium's affiliate professional bodies; this is why **E** counts as a perorative.

However, a different transmitter might have evidence-based reasons of his own to discount **E** despite its being promulgated as a consensus; but he publicises **E** *as if* he were making a sincere assertion, so that by doing so he is able to convey something else indirectly. In such cases the transmitter's primary illocutionary point may coincide with the institution's primary point or purpose in initiating the consensus; or again it might not. The transmitter might convey a consensus *as if* he were asserting it, just to impress a committee from whom he wants a promotion, or in order to win a grant renewal, or to retire an imprest without attracting queries, or to appear in *The Lancet* and thus garner respect of the prom king and queen in his high-school graduating class. Whatever the case, the transmitter's own intentional states marked out by (i.a) above are independent of the factors captured by (i) and (iii), which involve a range of discursive or rhetorical aims that may sustain independently of the receptors' intentional states.

Before finalising these suggestions with actual examples, let me address what might still seem wholly incongruous given non-assertoric speech act theories widely received, yet is a central point about peroratives: Ultimately, for their success, it doesn't matter what a specific transmitter knows, or what he intends to get across by publicising **E.** That is, a properly authorised expert transmitter may convey covert meanings of which he himself remains wholly unaware, while his diverse audience is fully apprised of what he is saying indirectly. Consider the case of a receptor who has expertise in a non-scientific field remotely allied with C, and suppose her specialised background knowledge renders her privy to covert facts about that consortium C that initially produced **E.** Recall here that an expert's independently regarding **E** to be false or highly unlikely or dubious is not the same as her regarding **E** as failing to be an assertion altogether. This expert receptor may appreciate that *by* asserting **E**, transmitters are naively conveying **E** at face value and also conveying more albeit unawares. Further, the receptor need not assume one way or the other that this particular transmitter believes **E** to be true. The covert meaning conveyed by **E** will be carried in public whether or not transmitters are 'play-acting', and whether or not they are seen to be expressing **E** with their own array of ulterior purposes.[55]

Footnote 54 continued
at t_1. But suppose that consensus were overturned by contrary evidence so that C no longer accredits **E** as it did initially, yet **E** continues to be reiterated publicly without formal retraction or repudiation by C; so its status as an assertion is essentially contestable—thanks to the vagaries of its referential term. Then a situation may arise where **E** is performed to function as an indirect speech act at $t_{n>1}$. In such perorative variants, a consensus might begin its career as an evidence-based assertion, only later to be exploited through reiteration for reasons other than those intended by its source. An example would be when **E** is reiterated by an interlocutor because she is counting on its collective utility in seeking a research grant renewal. Thus one *locution* (sentential content) could function, and also not function, as an assertion—this is the nature of a perorative. Everything depends upon the performance conditions defined by factors (i), (ii) and (iii) described above. In the case just described, (i.a) would be playing a role in the performance conditions of the perorative as well, and so with adjustments for discontinuity in time and place (captured in (ii) and (iii)) Searle's standard analysis of an indirect speech act might apply (1979b [1975]). The question arises: if after t_1 **E** is discovered by C to be false, why isn't it retracted thus blocking its indirect, arguably nefarious use? The answer would be that **E** still carries substantial pure collective utility, proportional to its utter lack of credibility. See footnote 6.

[55] Rosenthal's (1986, p. 171; 1989; 1995, pp. 208–209, n. 15) conclusion of how insincerity should be analysed on a causal theory of speaker's intended meaning applies here to interpreting the institutional

Further still, the receptor herself need not conclude that the consortium's output is wholly defective in order to receive covert messages through **E.** The circumstances of the transmission (factor (ii) above) may signal **E**'s indirect meanings independently of its apparent plausibility to a particular receptor. The receptor may take **E** as true at face value; the perorative succeeds anyway, since she can still align what she presumes to be C's purpose for purveying **E** with intentions that are rational from her own perspective, thereby demonstrating the effect of factor (iii). For instance, consider the receptor to be an ambitious director of a diagnostics research laboratory for whom the question of **E**'s truth or falsity does not arise since she knows a thing or two about the vagaries of viral taxonomy. This receptor may regard **E** as neither true nor false, yet understand **E** as covertly signalling biochemists to redirect the pitch of their grant proposals at $t_{n>1}$. Or she may know nothing about the vagaries of 'Ebola'; yet still she may pick up on this covert invitation to shift her research agenda whether or not she regards **E** as credible at face value.

It is this interdependency of the institution's intention and the receptor's interpretation of an implicit message that I have attempted to build into the structure featuring (i), (ii) and (iii) as essential for how peroratives convey covert messages, without a conversational in-person setting to facilitate those covert meanings. To summarise: as bracketed in (i.a), it really doesn't matter for a perorative's success who explicitly asserts a scientific consensus nor why they do it, provided they do it in the right setting (ii), so that the authority of that assertion carries for the receptor a rational basis for interpreting the consensus **E** in some coherent light (iii). In case the receptor doesn't believe the assertion at face value, then factor (ii) will directly motivate the receptor's attributing to the assertion some implicit meaning. But even if the receptor ascribes truth to the statement at face value, this does not block her appreciating its implicit meanings.

There is nothing particularly novel or controversial about recognising that the intended covert or implicit meaning of a scientific collective's released official statements will vary in concert with whomever the consortium happens to address *ex post facto*, in authorised print or in other media. For decades, philosophers of science have framed the priorities and interests of inquirers (sometimes referenced as the presuppositions of anticipated specialist audiences) as central among the factors determining the structure of a scientific explanation (or the criteria of adequacy for a scientific explanation) understood as a genre of research output (Cohen & Nagel, 1934; Hempel and Oppenheim, 1953a[1948], pp. 256–258; Hempel, 1953b, p. 339 n. 4; Nagel, 1953; Scriven, 1962). Potochnik (2016) recently recapped this familiar point that a scientific explanation's success depends upon how well its dependence relations are communicated to fit the varying priorities of different audiences (2016, pp. 723–724).[56] But here again, as has been the standard, audiences in Potochnik's focus are themselves comprised of scientists across disciplinary divides (2016, p. 726 *et passim*), not the public at large. A fortiori, for the issue of an official position **E** to a maximally diverse

Footnote 55 continued
purpose behind releasing a statement as true which the receptor believes on the basis of good evidence is not true.

[56] Indeed the emphasis upon inquiry-driven criteria as determining what to count as adequacy and reliability in explanatory reportage dates back to the earliest primers about scientific explanation (Morris Cohen and Ernest Nagel, 1934, p. 199).

general audience, it is a platitude to predict that the uptake of **E** by an individual receptor will vary according to the interests and priorities of that receptor, based upon the sub-sectors of the public audience with whom that receptor is identified.

But when speaking of the uptake of an indirect speech act conveyed by a perorative *on behalf of a group* to *a general audience*, factors contained in (i), (ii) and (iii) are over-determinate. So the transmitter may have no idea of the primary, implicit meaning conveyed to a particular receptor. For a perorative such as **E**, it may covertly yield any or all of the following: an invitation to diagnostic laboratories to produce badly needed test kits for Ebola, since the current ones remain woefully inadequate (World Health Organisation, 2014). Simultaneously, **E** can serve as an announcement to venture capitalists to invest in pharmaceutical innovations and to expand their marketability.[57] Or **E** may be summoned in order to justify new travel restrictions and national border shut-downs.[58] **E** may be a declamation to serve a geo-political diplomatic agenda, or a commissive to encourage governments to invest in contingency plans to compensate for trade embargoes; it might also be an advisory for investment speculators to anticipate regional trade barriers.[59] Or **E** may be an expressive giving the global impression of preparing a citizenry for a planned military occupation and control exercise.[60] Next, by continuing with this same example **E** as the consensus of a research consortium, this fan or spread of a consortium's intentions referenced in (i) earlier will be seen as converging with the interests and priorities of collaborating external institutions flagged by (iii).

5 Discursive ways of resolving a global health crisis

Just a few live examples will be used to portray the settings in which **E** and its variants have been encountered by individuals from all walks of life. The variety will demonstrate that **E**'s public carriage of implicit, non-assertoric points made by collaborating institutions depends upon facts about the backgrounds of its receptors and

[57] In 2014, the WHO Prequalification programme invited Expressions of Interest to develop an efficacious Ebola test. World Health Organization (2014). Urgently needed: rapid, sensitive, safe & simple Ebola diagnostic tests. Joint WHO/FIND meeting on Diagnostics and Ebola Control Geneva, Switzerland Accessed 12 December 2014 at. http://www.who.int/medicines/ebola-treatment/meetings/2015-0123_EbolaDxMtg_reportDec2014_Final.pdf\ In October 2021 this invitation was officially terminated and replaced by an invitation for tenders to develop Ebola curative products. Accessed 8 May 2023 https://extranet.who.int/pqweb/news/1st-invitation-manufacturers-therapeutics-against-ebola-virus-disease-submit-expression.

[58] Travel ban to affected Ebola countries. *BBC Worldservice News* 28 August 2014. Accessed 8 May 2023 https://www.bbc.com/news/health-28966419

[59] World Bank (2014).

[60] From 16 December 2014, Band Aid was broadcast by the *BBC Worldservice* as producing a new release of Bob Geldof and featuring many celebrities recording "Do They Know It's Christmas?" with reference to the populations purportedly devastated by Ebola. Retrieved 14th February 2023 https://www.bbc.com/news/entertainment-arts-30074650/. This data point reinforces the impression that the intended audiences for these entertainment features were affluent audiences outside Africa; no mention is made in these broadcasts that the populations of two of the three affected populations are predominantly Muslim: In Sierra Leone, 77% of the people are Muslim, and in Guinea, 85% are Muslim. Religious census data was retrieved 14th February 2023, from U.S. State Department's Religious Freedom Reports at https://www.state.gov/international-religious-freedom-reports.

the static settings wherein they encounter **E**, i.e. the extra-linguistic, institutional facts that authorize the reiteration of **E** or its cognates (Searle, 1969, pp. 51, 69).

Recall **E** from the introduction. It is reprinted below—as it appeared on the NCBI website information pages in October 2022—for the purpose of comparison with its variants $\mathbf{E_1}, \mathbf{E_2}, \mathbf{E_3}$, as well as the explicit commissive of the World Health Organisation announced as $\mathbf{E_4}$, and finally as the WHO's declarations such as reported by the CDC as $\mathbf{E_5}$:

E: The 2014–2015 Ebola epidemic in western Africa was the longest and most deadly Ebola epidemic in history, resulting in 28,616 cases and 11,310 deaths in Guinea, Liberia, and Sierra Leone.[61]

National Center for Biotechnology Information (NCBI)

$\mathbf{E_1}$ 2014–2016 Ebola Outbreak Distribution in West Africa: The largest Ebola outbreak in history was first reported in March 2014 and declared over by the World Health Organization (WHO) on June 10, 2016. While the epidemic spread to other parts of Africa, Europe, and the United States, the largest impact was in Guinea, Sierra Leone, and Liberia, the epicenter of the outbreak. Over the duration of this epidemic, there were 28,616 suspected, probable, and confirmed cases from these three countries and 11,310 deaths.[62]

Centers for Disease Control and Prevention (CDC)

$\mathbf{E_2}$ Ebola virus causes a severe haemorrhagic fever in humans with high case fatality and significant epidemic potential. The 2013-2016 outbreak in West Africa was unprecedented in scale, being larger than all previous outbreaks combined, with 28,646 reported cases and 11,323 reported deaths.[63]

Open access research report, available through NCBI

$\mathbf{E_3}$ The 2014 outbreak of the Ebola Virus Disease[1] in West Africa has taken a devastating toll. [Here, the superscript '1' refers to the initial endnote: "Hereafter, the term *Ebola* is used to refer to the virus, the disease, or the epidemic outbreak."][64]

World Bank report

[61] Retrieved 22nd October 2022 from https://www.ncbi.nlm.nih.gov/books/NBK441685/?report=printable

[62] Retrieved 10th February 2023 from https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/distribution-map.html

[63] Coltart et al. (2017) Retrieved 11th February 2023 from https://pubmed.ncbi.nlm.nih.gov/28396469/ as the lead article listed as open access by NCBI.

[64] World Bank. (2014 pp.5, 87).

E_4 Invitation to manufacturers of Ebola virus in vitro diagnostics to submit an Expression of Interest (EOI) for emergency assessment by WHO.[65]

World Health Organization[66]

E_5 Liberia was first declared Ebola-free in May 2015. Additional cases were found and treated, and the country was again declared Ebola-free in September 2015. More cases were discovered in November 2015. On January 14, 2016, Liberia again announced it was Ebola-free; however, cases were detected in March and April of 2016, and Liberia made its final declaration on June 1, 2016.

Centers for Disease Control and Prevention[67]

Consider **E, E_1** and**E_2**. If encountered by someone surfing on the internet (between highly reputable websites) in search of updates on the Ebola outbreak, these three passages might attract disbelief when taken at face value. This is because they quote exactly the same unrounded figures as depicting epidemiological statistics for deaths and suspected cases, but with reference to widely different time frames deviating from each other by one to three years.

Now consider a receptor reading **E_2** who was one of the head nurses facilitating the study in Freetown conducted by Schieffelin et al. (2014). To this nurse, **E_2** will seem altogether implausible as it predicates symptoms associated with EHV (from 1977) and attributes these symptoms to EVD as well. Yet as she knows, EVD is diagnosed officially without any mention or presentation of haemorrhaging at all. With only her practical extensive experience, this head nurse will draw the conclusion that **E_2** is intended to impress the general public with the terrible conditions brought about recently in the name of Ebola at her hospital. She hopes that through publicising **E, E_1**, and **E_2** sufficient attention to the conditions in Sierra Leone's major hospital will attract foreign assistance.

E_3 is noteworthy because it is found in a World Bank report that was written for fiscal and economic speculators. The first endnote of the entire report specifies what is meant by an apparent prevarication in the widespread usage of 'Ebola'; yet this specificity is not provided in the medical or the public health literature. This may suggest that such loose application, albeit incongruous to fiscal planners, is well tolerated among audiences familiar either with viral taxonomy or with public health communiqués.

E_4 is a directive or invitation to tender expressions of interest or contract proposals which seems to run contrary to all the five other assertions. If the exactitude of the numerals in all these other communiqués is warranted—as might be implied by the authoritative appearance of **E, E_1, E_2, E_3** and **E_5**—and if these are all evidence-based

[65] World Health Organization (2014) Version 2.0, issued 2nd October 2014. Retrieved 13th December 2014.

[66] World Health Organisation (2021). Since October 2021, the same website now offers a different invitation to submit Expressions of Interest for affordable treatments, retrieved 11th February 2023 at https://extranet.who.int/pqweb/sites/default/files/documents/EOI_EbolaVirusDisease_V1_Oct2021.pdfAnd the reasons for retraction of the invitations for Expressions of Interest regarding diagnostics was retrieved 11th February 2023 from https://extranet.who.int/pqweb/vitro-diagnostics/ebola-virus-disease. See footnote 60.

[67] Retrieved 14th February 2023 from the CDC website in the window catalogued as "Ebola (Ebola Virus Disease) Outbreaks" at https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html#:~:text

assertions, then there would seem to be no purpose to calling urgently for a diagnostic tool to test for Ebola. But $\mathbf{E_4}$ was a well-founded emergency call, since in fact there was no test (and to date there still is no test) that is able to distinguish Ebola from malaria, typhoid and a host of other endemic contagions in West Africa. But this fact throws doubt upon the exactitude of the figures in each of the claims **E** through $\mathbf{E_3}$**.** Yet because all of these statements are encountered in settings that grant them the gravitas of scientific authority, their apparent contrariness invokes in receptors (who are thus inclined) to search for alternative, implicit meanings in these claims.

Next I provide some examples of how facts about the receptors may induce or incite their interpretations of $\mathbf{E–E_4}$ as something other than what these written sentences or spoken utterances explicitly convey, even if the receptor has no reason to believe $\mathbf{E–E_4}$ are not true, when regarded independently of one another. Consider as well that many of the following receptors might have been transmitters themselves, or indeed members of the research consortium responsible for first releasing **E**.

Suppose one such specialist receptor is among those technicians who worked on the tissue specimen sent to her laboratory by the team that delivered the 1977 Zaire study and who first laid claim to identifying Ebola albeit in only one examined human fatality. So she knows, contrary to the public claims of the researchers who published the paper that the report they posted in *Lancet* was in no way definitive; it was published as a discussion note and the implications of the data were mentioned merely as conjecture (Johnson et al., 1977, p. 570).[68] She confirms privately that the tissue sample was poorly handled, as was mentioned in the report. She also knows the importance of collaborating with other researchers to attract donors to continue filoviral research on a large scale. So although she did not author **E**, and knows from first-hand experience how unlikely it is to be true, she thereby understands it must have a non-assertoric point. Based on her experience of the current trend in research funding as well, she can ascertain what that implicit point is.

Let's consider the uptake of someone who has no research background whatsoever, who is not science-literate in any formal sense. A West African smallholder, now very old, was farming his land in in 2012 in the area of Gabon where one of many studies around Africa have been conducted in order to test the extent to which Ebola is freely circulating in healthy human populations. He and many of his cohorts were strong and able-bodied artisan tobacco growers; and they were all tested as Ebola positive in 2012; yet neither he nor any of the farmers who tested positive for Ebola in his community have been seriously sick a day in their lives. He doesn't think these high-flown claims such as **E** are true, so he assumes they are intended to ensure that big corporations with plans to open many chemist shops in his district are adequately remunerated for their

[68] Peter Piot, the Director of the London School of Hygiene and Tropical Medicine was also a member of the WHO Advisory Group on the Ebola Virus Disease Response, previously the founding head of UNAIDS, leading advocate and fundraiser for the Global Alliance for Vaccines and Immunisation. In a disturbingly candid interview on international radio in the midst of the declared crisis and highly publicized West Africa Ebola intervention, he claimed that the entire Ebola alert, highly visible and widely publicised, was predicated upon the need to generate public knowledge that a "dangerous emergency" of epidemic proportions was immanent, to warrant experimenting with healthy humans in accordance with WHO Ethics Committee stipulations. On this and many other occasions, Piot laid public claim to having definitively "discovered" Ebola, as reported in the 1977 paper published in *The Lancet*. BBC Hardtalk *Worldservice*, 1st October 2014.

investments, and to ensure this they require local doctors to prescribe Ebola medicine. Thus **E** serves that marketing agenda.

Another radio listener hears **E**, but was present in the village in Guinea when the CDC workers were vaccinating everyone for meningitis. She saw several neighbours die from the effects of the faulty vaccine, which had been stored improperly. She is non-literate, yet it is her opinion, formulated when a community health worker translates **E** into her native Pular, that the CDC director responsible for conducting the immunisation exercise in her country required some protective alibi for his institution's committing such a serious diplomatic error.

Consider again a taxi driver in Freetown, Sierra Leone who has received a free cell phone from the team distributing these devices so that if anyone he observes has the symptoms of fever, headache, sore joints, swollen throat, breathing difficulties he can provide them immediate attention: an ambulance will come and deliver the patient to a medical facility. In his entire life, this driver has never seen an ambulance. Medical facilities are scarce, and this seems like a good opportunity to ensure his son gets proper care. He does not realise that the calls to the hotline during October-December, 2014 in his city will yield an enforced quarantine on his son.[69] All the instructions are in English—about how to use the hotline, announcements of **E** and information about the dangers of Ebola and the need for emergency intervention that are supplied on street posters, banners, reproduced by photographers and journalists sending feeds into AP, Reuters, and publishing in local papers. While English is Sierra Leone's official national language, the de facto dominant *lingua franca* is Krio used by 97 percent of the population including in Freetown. So the taxi driver understands **E** as a testament to the growing visibility and rising global status of his city as a major metropolis in the region.

In contrast, a medical specialist encountering **E** who held a position of high authority in neighbouring Liberia, was the Deputy Minister of Health based in the capital city Monrovia. His understanding of **E** was that it provided justification for the temporary foreign occupation by a US Army command and control unit, anticipated for early 2015. He expected that Liberia's then President Ellen Johnson Sirleaf, through her United States allies, would be able to suppress the political turmoil escalating in the capital city, created by oppositionists protesting the very unpopular ruling party (Preston, 2014). The Deputy Minister himself was aware of no prior request for an invitation to US troops issued by his Ministry of Health, and he had no knowledge of what training or equipment these foreign soldiers would bring to address any of the actual public health problems creating the ongoing chaos typical of Liberia's grossly underequipped medical facilities, a growing catastrophe made worse by the rising threat of insurrection, quite independently of Ebola. Closing the borders would entirely cripple petty merchants and the city's commercial sector which had been a substantive financial source of opposition to the Liberia's 'Unity' ruling political

[69] As recounted by Hans Rosling, statistician and communications specialist appointed by World Health Organisation to direct one of the centres in the West African Ebola Outbreak Response (interviewed by *BBC World Service* 24th November 2014, 26th March 2015 and 29th April, 2015).

party.[70] His understanding of **E**'s implicit utility was the impact it had on quelling criticism of the executive's heavy fisted approach to political protest at the time.[71]

One may fairly speculate that the widespread alarm regarding Ebola over the last twenty years has fulfilled various important missions of those medical scientists and researchers devoted to serving governments and affluent publics' interests globally, channelling financial and laboratory resources into filovirus research (Leffel & Reed, 2004). Perhaps because of the potential for *filoviridae* to be manufactured as bio-weapons, research into this viral family is set as a priority over the eradication of endemic diseases that continue to kill Africans (almost exclusively) at very high rates (Elbe, 2010, 2012; Leroy et al., 2011).

6 Conclusion

The point of this investigation has been to scrutinise how non-scientific affiliates of scientific consortia—in government, industry and general publics—are able to engage with each other in the execution of collaborative activities that involve the uptake of ostensibly evidence-based empirical claims in a variety of ways. I have tried to show that *extra scientific* speech communities contribute to sustaining a default position of respect for a scientific consensus as a matter of public decorum, which sometimes prompts attributing a non-empirical implicit meaning to the output of a consortium, when that output falls short of standards generally associated with evidence-based scientific assertions.[72] This implicit meaning is not based upon the auditor's assessing the intentions of the speaker or writer, but by noting a flaw or abnormality in the statement's sentential content, one which is incongruous given where the statement appears. When there is a mismatch—between the implausibility of the consensus' claim and the contexts in which it is encountered—the receptor's uptake involves switching to an implicit alternative meaning that resolves some rational coordination problem or some non-empirical agenda that is attributable to the consortium presumed responsible for producing that consensus.

Perorative speech reflects our concern to influence and to justify future actions and events rather than merely to predict and explain them. Properly interpreted, perorative affirmations and acclamations serve to indicate an overall picture of what scientists collectively recognise as the purposes of their modelling and forecasting, and these public service messages are in part the means by which scientists continue their work. Without peroratives, the general public will not be in a position to vet, nor be given the impression that they are able to vet, the direction our governments and industries are presented as moving when they collaborate with research institutions and support them with tax revenues. So although perorative discourse may interrupt the clarity required to accurately and efficiently report, record, and retrieve research results, the

[70] Tolbert Nyenswah, Liberian Deputy Minister of Health, was interviewed live on the *BBC World Service News* October 5, 2014. The segment was aired once before dawn, and edited out of subsequent editions of the hourly news briefs.

[71] Retrieved 11th February 2023 at https://www.newyorker.com/magazine/2014/10/27/ebola-wars

[72] E.g. Manguvo and Mafuvadze (2015).

epistemically responsible core of discourse constituting scientific inquiry does not seem do-able without it.

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