# Speech 1AC TFA Rd 1 vs Westwood 3-10 7AM

#### Theory after phil

### FW

#### Ethics must account for motivation to function – theories would otherwise be infinitely escapable because people disagree on its application or its authority which fails as a guide to action and can’t prescribe obligations. Applicability underlies ethics because it otherwise can’t account for hidden tipping points and isn’t useful in real world dilemmas.

#### Perspectivism is true –

#### 1] Opacity – we can never access another person’s perspective because we can never fully understand who someone else is or what they think. Every truth I create cannot be universalized because I can’t guarantee that they will create the same truth because they do what they want.

#### 2] Resolvability – Centuries of moral debate proves we can’t come to an objectively correct answer so it has to be indexed to individual subjects. High school debaters can’t come to a correct conclusion on their own and moral dilemmas are too complicated to “solve” in 45 minutes, so you should prefer a perspectivist account.

#### 3] The theory of relativity proves that objective reality does not exist but only in the reference to the observer.

**Berghofer 20** [Philipp Berghofer (a graduate student at University of Graz, Institute of Philosophy). “Scientific perspectivism in the phenomenological tradition”. European Journal for Philosophy of Science volume. 16 June 2020. Accessed 4/17/21. <https://link.springer.com/article/10.1007/s13194-020-00294-w> //Xu]

Concerning general relativity, Merleau-Ponty states: The physics of relativity confirms that absolute and final objectivity is a mere dream by showing how each particular observation is strictly linked to the location of the observer and cannot be abstracted from this particular situation; it also rejects the notion of an absolute observer. We can no longer flatter ourselves with the idea that, in science, the exercise of a pure and unsituated intellect can allow us to gain access to an object free of all human traces, just as God would see it. This does not make the need for scientific research any less pressing; in fact, the only thing under attack is the dogmatism of a science that thinks itself capable of absolute and complete knowledge. We are simply doing justice to each of the variety of elements in human experience and, in particular, to sensory perception. (Merleau-Ponty 2004, 44f.) It is to be noted that Merleau-Ponty’s remark is misleading since in the theory of relativity observation is not linked to the location of the observer but to the frame of reference of the observer.Footnote21 The principle of relativity implies that there is no privileged frame of reference; the laws of physics are the same in all inertial frames of reference. Special relativity is built upon the principle of relativity (first postulate) and the postulate that in a vacuum the speed of light is constant for all observers. Together, these two postulates have several implications that show that some of the facts that we usually consider to be “objective” are in fact observer-dependent. For instance, special relativity implies the relativity of simultaneity: It depends on the observer’s frame of reference whether two events separated in space occur at the same time. There is no objective or absolute sense in which we could tell that two spatially separate events take place simultaneously. When we turn to general relativity, we see that space and time are not absolute, not a fixed background, but that the geometry of spacetime itself is influenced by what is going on within spacetime, namely by the energy-momentum of matter. This means that there is a reciprocal relationship between spacetime and what it contains (including the embodied observer).Footnote22

#### 4] Subjectivity only has meaning when it interacts with other machines – there are no intrinsic values and a failure to recognize that stratifies subjects and reifies violence.

**Malins 04** [Brackets Original. Peta Malins (Program Manager of the Bachelor of Legal and Dispute Studies and a Lecturer in Criminology and Justice Studies @ RMIT University). “Machinic Assemblages: Deleuze, Guattari and an Ethico-Aesthetics of Drug Use”. The University of Melbourne. 2004. Accessed 2/19/21. http://janushead.org/wp-content/uploads/2020/06/Malins.pdf //Xu]

As an assemblage, a [drug using body] has only itself, in connection with other assemblages and in relation to other bodies without organs. We will never ask what a [drug using body] means, as signified or signifier; we will not look for anything to understand in it. We will ask what it functions with, in connection with what other things it does or does not transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what bodies without organs it makes its own converge. A [drug using body] exists only through the outside and on the outside. A [drug using body] itself is a little machine (Deleuze and Guattari, 1988: 4)1 The work of Deleuze and Guattari is perhaps best conceived of as a ‘tool box’2 –as a collection of machinic concepts that can be plugged into other machines or concepts and made to work. This is how I approach their writing, and why–despite initial misgivings–I have transformed the above excerpt (surreptitiously replacing the concept ‘book’ with ‘drug using body’) to suit the purposes of this paper. In making this transformation, I soon discovered that it became a perfect little language-machine: not only articulating where I want to take the concept of drug use, but also [through its parentheses] expressing the open applicability of Deleuze and Guattari’s work. Insert body of choice: a sexual body; a bicycle, a language; a body of art; a film–the excerpt works for them all. In this openly mutating state the passage introduces some of the key concepts in Deleuze and Guattari’s philosophical project: becomings, rhizomatic connections, and multiplicities. It also, more explicitly, outlines their project to take thought (and ethics) away from internal meanings, causes, and essences, and toward surface effects, intensities and flows. However it is the particular concept of the body activated by the excerpt–the concept of the body as machinic assemblage–that I find most useful to the task of rethinking drug use. It is a concept that unravels the modern fantasy of the body as a stable, unified, bounded entity, and gives a language to the multitude of connections that bodies form with other bodies (human and otherwise). A body’s function or potential or ‘meaning’ becomes entirely dependent on which other bodies or machines it forms an assemblage with. Colebrook’s (2002) example of the bicycle is useful here: a bicycle is a machine that doesn’t begin to work or have a particular meaning until it connects up with another machine. When it connects up with a cyclist, it becomes a vehicle; when is placed in a gallery, it becomes an artwork. A cigarette is similarly multiple: when smoked it becomes a drug; when held seductively at the end of ones fingertips it becomes an object of beauty; when shown in a film it becomes a plot device (Klein, 1993). And a drug using body is no different: when it connects up to bicycle, it becomes a cyclist; to a cigarette, a smoker; to LSD, a tripper. The drug using body is multiple. While numerous writers have begun to make movements toward rethinking drug use via Deleuze and Guattari3 , very few have explored this intersection in detail4 . In this paper I will map out some of the specific implications of rethinking the drug using body in this way. I will begin by exploring what happens to the subject (the ‘drug user’, the ‘addict’) when the body becomes a multiplicity. Like Deleuze and Guattari: I will not ask what a drug using body ‘means’ or signifies; but rather, what affects its assemblages produce and what flows of desire they cut off (its components and affects). I will then explore Deleuze and Guattari’s own particularly bleak conception of drug-use, arguing that the pessimism it engenders can be strategically sidestepped using Deleuze and Guattari’s other philosophical tools. I will explore how we might productively approach drug use via a Deleuzian ethics, and will argue for a specific ethical rethinking of drug use according to the concepts of the machinic assemblage and rhizomatic multiplicities. A strategy with implications not only for social policy, but also for how we understand ourselves. And who we might become. Subjectivity and the drug using body Bodies that fall prey to transcendence are reduced to what seems to persist across their alterations. Their very corporeality is stripped from them, in favor of a supposed substrate–soul, subjectivity, personality, identity–which in fact is no foundation at all, but an end effect, the infolding of a forcibly regularized outside. (Massumi, 1992: 112) For Deleuze and Guattari a body (human, animal, social, chemical) has no interior truth or meaning; it exists only through its external connections and affects. They write: We know nothing about a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body. (ATP5 : 257) So where does this leave the subject? And identity? If we are to talk only of the drug using body and its multiplicities–where does the ‘drug user’ or ‘addict’ disappear to? For Deleuze and Guattari the subject is nothing more (and nothing less) than a particular way in which bodies have become organised and stratified in the post-Enlightenment social world. In order to comprehend the ‘human’ body, the social world (or socius) reduces the complexity and chaos of an ever-changing multiplicity of bodily flux to discrete categories of meaning and constancy. Bodies become ordered and delimited according to hierarchical binary presuppositions: human/animal, man/woman, healthy/unhealthy, lawful/criminal, hetero/gay, clean/junkie. Binaries that bodies never fully correspond to: No real body ever entirely coincides with either category. A body only approaches its assigned category as a limit: it becomes more or less “feminine” or more or less “masculine” depending on the degree to which it conforms to the connections and trajectories laid out for it by society… “Man” and “Woman” as such have no reality other than that of logical abstraction. (Massumi, 1992: 86) Yet when bodies fall outside these binaries, or try to claim a different identity, they are rarely granted anything outside a third term (‘bi-sexual’, ‘reformedsmoker’) that remains reliant upon, and limited to, those binary relations. Multiplicities reduced to binaries and trinities. Manifold potential reduced to a discrete set of bodily possibilities. You will be a boy or a girl; a smoker or a non-smoker; a civilized human being (with all bodily parts fulfilling civilized ‘human’ functions)’ or an animal. Your choice. You will subscribe to modern selfhood (and all its bodily and linguistic demands) or you’ll be rejected: You will be organized, you will be an organism, you will articulate your body–otherwise you’re just depraved. You will be signifier and signified, interpreter and interpreted–otherwise you’re just a deviant. You will be a subject, nailed down as one, a subject of the enunciation recoiled into a subject of the statement–otherwise you’re just a tramp. (ATP: 159)

**This commits us to practical deliberation as the method of moral inquiry   
Serra 09**Juan Pablo Serra. What Is and What Should Pragmatic Ethics Be? Some Remarks on Recent Scholarship*.* EUROPEAN JOURNAL OF PRAGMATISM AND AMERICAN PHILOSOPHY. 2009. Francisco de Vitoria College, Humanities Department, Faculty member. https://journals.openedition.org/ejpap/905

This separation of theory and practice runs parallel to another split, namely, that of ethics and morals or, better put, of ethical theory and moral practice. Peirce denies that morality is subject to rationality and thinks that ethics is valuable as a science in a broad sense. But he also regards ethics as a science which bears on human conduct only indirectly, through the examination of past actions and the self-correction of the self in view of future action. In addition, ethics would be a normative knowledge only in so far as it analyzes the adjustment of actions to ends and in so far as it studies the general way in which a good life can be lived. In morals Peirce appeals to instinct and sentiment, and in ethics he recommends the use of logical thinking —just as scientists do. However, even within the framework of his system, it’s not obvious that scientists may so easily set aside their instincts —in fact, instinct (or ‘rational instinct’ as he called it in 1908) plays a significant role in the economy of re- search. Moreover, the statement that in moral issues there may be no possibility of carrying out an inquiry that is truth-oriented is not an uncontroversial one. After all, moral inquiry is performed in a deliberative way, weighing up argumentations, beliefs and principles, and comparing them either with their probable or conceivable consequences or with lived as well as possible experiences that can be forceful or impinge upon the deliberative subject in such a way as to acquire the compulsory resistance due to reality. As Misak puts it succint- ly, “the practice of moral deliberation is responsive to experience, reason, argument, and thought experiments... Such responsiveness is part of what it is to make a moral decision and part of what it is to try to live a moral life” (2000: 52)3. Likewise, this same deliberative activity implies an effort to acquire habits, beliefs and principles that contribute to a truly free deliberation which, in turn, can result in creative conclusions. For Peirce, as you get more habit-governed, you become more creative and free, and your selfhood acquires plas- ticity and receptiveness to experience4. Vincent Colapietro has referred to Peirce’s description of human reason in terms of a deliberative rationality (1999: 24). Also, in another place he has explained that deliberation for Peirce is a process of preparation for future action which has to do with the checking of previous acts, the rehearsal in imagination of different roads to be followed by possible conduct and the nurturing of ideals (Colapietro 1997: 270, 281). It is precisely this experi- ment carried out within imagination that generates habits, because, as Peirce says in “A Survey of Pragmaticism”, “it is not the muscular action but the accompanying inward ef- forts, the acts of imagination, that produce the habit” (CP 5.479, 1907). Habits are regular ways of thinking, perceiving and interpreting that generate actions. As such, habits have a huge influence on human behavior, manifest themselves in the con- crete things we do and, at the same time, are formed within those same activities. Even more, according to Peirce, the activity takes the form of experimentation in the inner world; and the conclusion (if it comes to a definite conclusion), is that under given conditions, the interpreter will have formed the habit of acting in a given way whenever he may desire a given kind of result. The real and living logical conclusion is that habit (CP 5.491, 1907). Much more evidence could be given to support the view that habits are virtually decided (CP 2.435, c.1893) and also that intelligence comprises inward or potential actions that in- fluence the formation of habits (CP 6.286, 1893). Suffice it to say that, according to Peirce, deliberation is a function of the imagination, and that imagination is in itself an experiment which may have unexpected consequences that impose themselves upon the deliberative subject.

#### Thus, the standard is consistency with pragmatic deliberation.

#### [New] Impact Calc – deliberation is procedural, which means that agents ought to act in a deliberative fashion by employing the pragmatic procedure of deliberation, not the substance or conditions where deliberation can arise. To clarify, consequences are a sequencing question.

#### 1] Pluralistic Materialism – other theories rely on minimalistic criteria; our framework understands knowledge as changing and uses experience to base social change and revise ideas. Glaude 7Eddie S. (Eddie S. Glaude Jr. is the African-American chair of the Center for African-American Studies and the William S. Tod Professor of Religion and African-American Studies at Princeton University.) In a Shade of Blue : Pragmatism and the Politics of Black America. University of Chicago Press, 2007. EBSCOhost. (5-7)

In a Shade of Blue is my contribution to the tradition I have just sketched. My aim is to think through some of the more pressing conceptual problems confronting African American political life, and I do so as a Deweyan prag-matist. I should say a bit about what I mean by this self-description. John Dewey thought of philosophy as a form of cultural and social criticism. He held the view that philosophy, properly understood as a mode of wis-dom, ought to aid us in our efforts to overcome problematic situations and worrisome circumstances. The principal charge of the philosopher, then, is to deal with the problems of human beings, not simply with the problems of philosophers. For Dewey, over the course of his long career, this involved bridging the divide between science, broadly understood, and morals—a divide he traced to a conception of experience that has led philosophers over the centuries to tilt after windmills. Dewey declared, “The problem of restoring integration and co-operation between man’s beliefs about the world in which he lives and his beliefs about values and purposes that should direct his conduct is the deepest problem of any philosophy that is not isolated from life.”9Dewey bases this conclusion on several features of his philosophy: (1) anti foundationalism, (2) experimentalism, (3) contextualism, and (4) soli-darity.10 Antifoundationalism, of course, is the rejection of foundations of knowledge that are beyond question. Dewey, by contrast, understands knowledge to be the fruit of our undertakings as we seek “the enrichment of our immediate experience through the control over action it exercises.”11He insists that we turn our attention from supposed givens to actual consequences, pursuing a future fundamentally grounded in values shaped by experience and realized in our actions. This view makes clear the experimental function of knowledge. Dewey emphasized that knowledge entails efforts to control and select future experience and that we are always con-fronted with the possibility of error when we act. We experiment or tinker, with the understanding that all facts are fallible and, as such, occasionally afford us the opportunity for revision.12Contextualism refers to an understanding of beliefs, choices, and actions as historically conditioned. Dewey held the view that inquiry, or the pursuit of knowledge, is value-laden, in the sense that we come to problems with interests and habits that orient us one way or another, and that such pursuits are also situational, in the sense that “knowledge is pursued and produced somewhere, some when, and by someone.”13Finally, solidarity captures the associational and cooperative dimensions of Dewey’s thinking. Dewey conceives of his pragmatism as “an instrument of social improvement” aimed principally at expanding democratic life and broadening the ground of individual self-development.14Democracy, for him, constitutes more than a body of formal procedures; it is a form of life that requires constant attention if we are to secure the ideals that purportedly animate it. Individuality is understood as developing one’s unique capacities within the context of one’s social relations and one’s community. The formation of the democratic character so important to our form of associated living involves, then, a caring disposition toward the plight of our fellows and a watchful concern for the well-being of our democratic life.

#### 2] Best studies prove pluralistic tendencies are inevitable

Polzler 19[Thomas Pölzler and Jennifer Cole Wright- “Empirical research on folk moral objectivism” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6686698/> NCBI. Published July 5th 2019]

Examining these studies' results more closely, however, makes it less clear whether this interpretation is appropriate (Pölzler, 2018b). Take again Goodwin and Darley's study. In this study, almost 30% of subjects' responses to the disagreement measure and almost 50% of their responses to the truth‐aptness measure fell on the option that the researchers took to be indicative of subjectivism (Goodwin & Darley, 2008, pp. 1347, 1351). Moreover, while some moral statements were dominantly classified as objective (e.g., the above statement about robbery), many others were dominantly classified as nonobjective (e.g., the stem cell research statement). This suggests that subjects in Goodwin and Darley's study may have actually favored what Wright, Grandjean, and McWhite (2013) called “metaethical pluralism,” i.e., they sometimes sided with objectivism and other times with nonobjectivism. More recent studies have by and large confirmed this hypothesis of folk metaethical pluralism. Wright et al. (2013) and Wright, McWhite, and Grandjean (2014), for example, replicated Goodwin and Darley's results, using the exact same measures, but letting subjects classify the presented statements as moral and nonmoral themselves. Objectivity ratings for statements that were dominantly self‐classified as moral varied between as little as 5% and as much as 85%. Research based on different measures yielded high proportions of intrapersonal variation as well (e.g., Beebe, 2014; Beebe, Qiaoan, Wysocki, & Endara, 2015; Beebe & Sackris, 2016; Fisher, Knobe, Strickland, & Keil, 2017; Goodwin & Darley, 2012; Heiphetz & Young, 2017; Wright, 2018; Zijlstra, forthcoming‐a).2

#### 3] Performativity- when you enter debate, you presume that you can discuss the topic because of deliberation. This means denial of my framework is impossible and all objections should be ignored on face because responding to my framework requires my framework to do so.

#### 4] TJF – it doesn’t matter how true a philosophy is if it can’t be engaged or is impossible to learn from – even if a theory was correct, we shouldn’t use its philosophy in debate specifically.

#### 1] Inclusion – Prag definitionally is a procedural for allowing almost any argumentation in the debate space with the Other which controls the internal link to inclusion and is an impact multiplier

#### 2] Resource Disparities – intent based frameworks ensure big squads don’t have a comparative advantage since debates become about quality of arguments rather than quantity and require a higher level of analytic thinking that small schools have.

### Offense

#### I Affirm the Whole Resolution – Resolved: In a democracy, a free press ought to prioritize objectivity over advocacy.

#### Objective Journalism lies in Objectivity of its methodology.

Jones 9 Alex Jones 9-15-2009 "An Argument Why Journalists Should Not Abandon Objectivity" <https://niemanreports.org/articles/an-argument-why-journalists-should-not-abandon-objectivity/> (Alex S. Jones, a 1982 Nieman Fellow, is director of the Joan Shorenstein Center on the Press, Politics and Public Policy at Harvard University.)//Elmer

In their book “The Elements of Journalism: What Newspeople Should Know and the Public Should Expect,” Bill Kovach and Tom Rosenstiel, describe what they call “the lost meaning of objectivity.”… As [they] point out, “In the original concept, in other words, the method is objective, not the journalist.” It was because journalists inevitably arrived with bias that they needed objectivity as a discipline to test that bias against the evidence so as to produce journalism that would be closer to truth. They argue that the quickening of objectivity as the American journalistic standard was born of a desire to have a more scientific way of approaching news. The nation’s faith in science was surging, and the scientific method seemed suited to journalism. Scientists begin their research with assumptions. They have expectations of what will happen, but they don’t know what will happen. They have, in other words, their own opinions and beliefs—their point of view or even bias—about what is likely the truth, and they do their research to test those assumptions. Their objective, scientific inquiry is not one that is without bias, but one in which bias has to stand up to evidence and results. This is the sensible and realistic approach to objectivity that might be termed genuine objectivity. It begins with the assumption that journalists have bias, and that their bias has to be tested and challenged by gathering facts and information that will either support it or knock it down. Often, there is information that does both, and that ambiguity needs to be reported with the same dispassion with which a scientist would report variations in findings that were inconclusive. If the evidence is inconclusive, then that is—by scientific standards—the truth. But journalistic objectivity is an effort to discern a practical truth, not an abstract, perfect truth. Reporters seeking genuine objectivity search out the best truth possible from the evidence that the reporter, in good faith, can find. To discredit objectivity because it is impossible to arrive at perfect truth is akin to dismissing trial by jury because it isn’t perfect in its judgments.

#### Objectivity in the press is consistent with the pragmatic theory of truth via rigorous inquiry and pluralist decision-making.

Ward 17 [Stephen J. A. Ward (Distinguished Lecturer in Ethics at the University of British Columbia, Courtesy Professor at the School of Journalism and Communication at the University of Oregon, and founding director of the Center for Journalism Ethics at the University of Wisconsin). “ENGAGEMENT AND PRAGMATIC OBJECTIVITY”. Center for Journalism Ethics at the University of Wisconsin-Madison. March 27, 2017. Accessed 2/26/2022. <https://ethics.journalism.wisc.edu/2017/03/27/engagement-and-pragmatic-objectivity/> //Xu]

In the first article in this series, I argued for a radical rethink of ethics to respond properly to the challenge of journalism in a time of Trump. We need to practice democratically engaged journalism, which views journalists as social advocates. But they are advocates of a special kind: objective advocates for plural democracy. Here, I’ll examine the method of objective engagement, what I call pragmatic objectivity. Journalists of this ilk are neither partisans nor neutral reporters of “just the facts.” Objective engagement sounds strange to some ears; it runs against a strong strain of dualistic thinking in journalism ethics: I can be a disinterested journalist or an interest-driven advocate but not both. Facts versus opinion, facts versus values, neutrality versus engagement. These dualisms are the trouble-making heritage of a journalism ethic from a different media era a century ago. Pragmatic objectivity rejects the dualisms, but not objectivity. It redefines it. But how can journalists be engaged and objective? OBJECTIVITY AS TESTING What does it mean to be objective, and why be objective? Since philosophy in antiquity, objectivity has been an ideal of inquiry. Objectivity in this tradition is ontological, i.e., it is knowledge of the world as it exists independent of mind. Objective beliefs map the world. Subjective beliefs fail to map. To be concerned about objectivity is to ask: Which beliefs, reports, and theories are reliable representations of the world? Humans make mistakes. The sources of error are known: our desires, ideologies, prejudices, faulty logic, and interests. How decide which beliefs map the world? There is only one way. We examine how we formed a belief. We evaluate its reasons and its methods. Objectivity becomes epistemological. Objective belief is supported by evidence. Subjective belief lacks support. Objectivity comes down to testing beliefs by the methods and criteria of good inquiry. For example, we test beliefs to see if they follow valid statistical methods. The most familiar modes of testing are the methods of science. But criteria for objective inquiry populate philosophy, logic, critical thinking, social science, law, and journalism. Objectivity is an ideal. Even if never fully realized, it is a target at which to aim. Being objective is not easy. It requires mental discipline and a willingness to critique one’s views. So “Why be objective?” becomes, “Why value well-evidenced belief?” For two reasons. We need objective beliefs to guide actions. And, we need objective methods for adjudication: Teachers need to mark exams objectively; judges need to adjudicate disputes by law and fact. Too much time has been wasted of late on the flabby, unfocused question as to whether objectivity exists, or whether it is valuable. Of course objectivity exists, if we mean there are people capable of reasonably objective judgments. That happens every day. And, it is clear that objective judgment has value in many domains of life. So what is the debate over objectivity in journalism about, anyway? The real issue is what type of objective testing is appropriate for journalism? OLD AND NEW OBJECTIVITY Historically, journalism objectivity has been reductionist. Testing for objectivity is reduced to testing for facts and neutrality. The conception, adopted in the early 1900s for professional newsrooms, is that a report is objective if and only if it neutrally reports only observable facts. The sphere of objective belief is reduced to beliefs derived from the senses. Traditional objectivity is dualistic: it draws a firm line between observation and interpretation of fact, neutral reporting and advocacy. It is exclusive: Reporter’s opinions and interpretations are to be excluded from good reporting. This is the old objectivity. It makes objective engagement ‘sound strange.’ This way of thinking continues to haunt debates, even if people doubt objectivity. Reporters still balk at the suggestion they interpret events. They worry about losing neutrality when covering Trump. Too many commentators reject objectivity because they think of it as strict neutrality, as if there was not some other conception. Pragmatic objectivity is a new objectivity. It is plural and holistic. It evaluates beliefs with a variety of standards. It is inclusive, open to the evaluation of many kinds of writing. It denies dualisms, viewing journalism as both factual and interpretive, an engaged chronicling. For pragmatic objectivity, the sphere of objective belief is larger than the sphere of fact. What we know depends not only on observation but on our perspectives—webs of belief and values. Knowledge is an interpretation, in which fact and theory are entangled. Even what we consider a fact is determined by our webs of belief. Hence, expert analysis of political events and scientific theories of unobservable forces in nature can be objective, even if not reducible to observable fact. They are objective to the extent that they are reliable indicators of the world and guides to action. Journalism stories are web-dependent interpretations. They are not pure observations of fact. Even apparent facts-only reporting, e.g., reporting a news conference, require the journalist to select salient statements, decide on quotations, and make sense of the conference for a public. Salience, choosing content, and creating meaning are interpretive functions. If this view is true, then we need a notion of objectivity that disciplines and tests our interpretive tendencies, rather than tries to eliminate them. We need appropriate standards of evaluation. Pragmatic objectivity provides a list for journalism. They are: Standards of attitude: Journalists should adopt the objective stance, step back from their beliefs, display a passion for truth and give reasons that others could accept. Standards of empirical validity: What is the empirical evidence for the story? Are the facts carefully collected, verified, complete and placed in context? Are counter-facts treated seriously? Standards of clarity, logic, and coherence: Does the story cohere with existing knowledge in the field? Is the interpretation logically consistent? Are the concepts clear? Are fallacious arguments or manipulative techniques used? Standards of diverse and trusted sources: Are important sources taken into account and fairly assessed? Standards of self-consciousness: In constructing a story, are we conscious of the conceptual frame we use to understand the topic? Are there other frames? Standard of open, public scrutiny: Have we subjected our views to the views of others? Are we prepared to alter our views? The standards apply to many forms of journalism from ‘straight’ reporting to editorial commentary and advocacy journalism. It is a flexible, platform-neutral method.

#### A pragmatically objective press is a necessary component of a pluralist and deliberative democracy.

Ward 17 [Stephen J. A. Ward (Distinguished Lecturer in Ethics at the University of British Columbia, Courtesy Professor at the School of Journalism and Communication at the University of Oregon, and founding director of the Center for Journalism Ethics at the University of Wisconsin). “ENGAGEMENT AND PRAGMATIC OBJECTIVITY”. Center for Journalism Ethics at the University of Wisconsin-Madison. March 27, 2017. Accessed 2/26/2022. <https://ethics.journalism.wisc.edu/2017/03/27/engagement-and-pragmatic-objectivity/> //Xu]

OBJECTIVITY WITHIN ENGAGEMENT How is pragmatic objectivity compatible with journalism as engaged? Objectivity and engagement are compatible because there is a difference between methods and goals. Goals are the aims of engagement in life and society. We are partial about our goals, favoring them over others. But our methods of achieving goals can be objective or subjective. The value of objectivity is that it helps us to be engaged, to achieve certain goals or perform certain functions. Scientists follow objective methods to create new technology to solve a problem. Judges follow the objective methods of law to pursue their goal of justice. Democratically engaged journalists have a dual commitment: they are committed to impartial methods as a means to their partial commitment to plural democracy. They commit themselves to rational and objective methods for deciding what to publish and how to persuade. Their desire for objective belief is part of a desire for reason-based democratic processes. In contrast, there are engaged citizens, such as extreme partisans, who use partial methods for partial goals. They do whatever it takes to advance their cause. Their manipulative strategies exploit the sources of subjective belief such as fears, biases, and stereotypes. Objective engagement does not require an all-encompassing neutrality which precludes expressing a view or coming to a conclusion. Both scientists and judges are impartial in method but they rightly come to conclusions and take sides in conflicts. Objectively engaged journalists are impartial or disinterested because they do not let their partialities or interests undermine objective judgment and inquiry. They do not prejudge the story before fairly weighing all relevant evidence. But after such inquiry, journalists are free to draw an informed conclusion. Such is the method of investigative journalism. Objectivity is not a value-free zone. TRUMP AND PRAGMATIC OBJECTIVITY How might pragmatic objectivity shape our response to journalism in a time of Trump? It would open up the space in which we think about journalism, refusing to reduce the options to a forced choice between neutral stenography and biased partisanship. Calling for a return to traditional objective journalism is like proposing that we go backward in time. Not only do many journalists not practice traditional facts-only reporting but the public sphere that once justified such an ethic has greatly disappeared. The situation is too serious for outdated solutions. Evidence, fact, and truth are ideas increasingly defined by politics, power, and manipulative persuasion. What is a fact is too often what someone claims is a fact, for self-interested reasons. Partisans and leaders, including Trump and his advisers, tweet unsubstantiated claims for political reasons: to galvanize their base of support, to maintain their ideology; and to distract the media. One strategy is to insert fake news into the infosphere knowing it will be there forever, influencing someone, diluting the influence of other interpretations. This insouciance toward objective reasons and disciplined thinking is disturbing. We face the end of the ideal of informed and reasonable democratic publics. In this corrupted media sphere, journalists should not be passive or neutral. Such a climate needs an active journalism with a method that resists subjective claims. Pragmatic objectivity encourages journalists to do the things that need to done: There is no better antidote to fake news than real news, objectively tested. Fake news and alternate facts are just other terms for biased, subjective belief. There is no better antidote to a passive, manipulatable press than a press objectively engaged as watchdogs for plural democracy, who fact-test political claims and investigate conflicts of interest among Trump’s family and advisers. There is no better antidote to illiberal and intolerant media than an objectively engaged journalism that performs the political explanatory journalism noted in the first article. Finally, news media that follow pragmatic objectivity, aimed at protecting plural democracy, can justifiably take legal and other action against a presidential decision, law, or policy that violates a constitutional principle, such as free expression, or the rights of minorities.

### Method

#### 1] 1AR theory is legit – anything else means infinite abuse

#### – drop the debater – 1AR is too short to make up for the time trade-off

#### – no RVIs – 6 min 2NR means they can brute force me every time

#### – competing interps – reasonability narrows the theory debate to one issue of brightline, making it easy for the Neg to collapse to the issue in the long 2NR

#### – 1AR theory is the highest layer – the NC has 7 minutes to be abusive and 6 minutes to leverage the abuse against 1A theory in the 2N, making checking abuse lexically impossible

#### 2] Give me new weighing in the 2AR for 1AR shells – I don’t know what arguments will be read in the 2NR so 1AR weighing is impossible as I don’t know what to weigh against.

#### 3] Affirm if I win offense to a counterinterp

#### A] Timeskew – 6 Minute 2NR with collapse to whatever I undercover means that you can win theory and substance, but I need to go for both in half the time and split it between the 2 layers.

#### B] Reciprocity – you get T and theory so I should get theory and an RVI to make the burden reciprocal.

#### 4] Nothing has triggered it, but Presumption and permissibility affirm –

#### a) We always default to assuming something true until proven false ie if I told you my name is Daniel you would believe me

#### b) Unjust[[1]](#footnote-1) is “not morally right; not fair” and permissibility disproves the positive obligation which is aff ground

#### c) empirics

**Shah 19,**[Shah, Sachin. “A STATISTICAL ANALYSIS OF SIDE-BIAS ON THE 2019 JANUARY-FEBRUARY LINCOLN-DOUGLAS DEBATE TOPIC.” NSD Update, National Symposium of Debate, 16 Feb. 2019, <http://nsdupdate.com/2019/a-statistical-analysis-of-side-bias-on-the-2019-january-february-lincoln-douglas-debate-topic/> ]//LHPSS accessed 9/4/19

As a final note, it is also interesting to look at the trend over multiple topics. In the rounds **from** 93 TOC bid distributing tournaments (**2017 – 2019** YTD), **the neg**ative **won 52.99% of ballots** (**p-value < 0.0001)** and 54.63% of upset rounds (p-value < 0.0001). **This suggests the bias might be structural, and not topic specific, as this data spans six different topics.**

### Disclosure

#### Interpretation: At all TOC bid distributing tournaments, debaters must disclose all constructive speech docs open source with highlighting on the NDCA LD wiki.

#### Violation – didn’t disclose for UT

Table

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#### A. Debate resource inequities—you’ll say people will steal cards, but that’s good—it’s the only way to truly level the playing field for students such as novices in under-privileged programs.

Antonucci 5 [Michael (Debate coach for Georgetown; former coach for Lexington High School); “[eDebate] open source? resp to Morris”; December 8; http://www.ndtceda.com/pipermail/edebate/2005-December/064806.html //nick]

a. Open source systems are preferable to the various punishment proposals in circulation. It's better to share the wealth than limit production or participation. Various flavors of argument communism appeal to different people, but banning interesting or useful research(ers) seems like the most destructive solution possible. Indeed, open systems may be the only structural, rule-based answer to resource inequities. Every other proposal I've seen obviously fails at the level of enforcement. Revenue sharing (illegal), salary caps (unenforceable and possibly illegal) and personnel restrictions (circumvented faster than you can say 'information is fungible') don't work. This would - for better or worse. b. With the help of a middling competent archivist, an open source system would reduce entry barriers. This is especially true on the novice or JV level. Young teams could plausibly subsist entirely on a diet of scavenged arguments. A novice team might not wish to do so, but the option can't hurt. c. An open source system would fundamentally change the evidence economy without targetting anyone or putting anyone out of a job. It seems much smarter (and less bilious) to change the value of a professional card-cutter's work than send the KGB after specific counter-revolutionary teams.

#### B. Evidence ethics – open source is the only way to verify before round that cards aren’t miscut – otherwise you could have highlighted unethically. That’s a voter – maintaining ethical ev practices is key to being good academics and we should be able to verify you didn’t cheat

#### C. Depth of clash – open source allows debaters to come up with more nuanced researched objections to their opponents evidence before the round at a much faster rate, which leads to the highest quality evidence comparison instead of guessing what was highlighted

#### Procedural fairness is a voter and outweighs a] it’s an intrinsic good – debate is fundamentally a game and some level of competitive equity is necessary to sustain the activity, b] probability – debate can’t alter subjectivity, but it can rectify skews which means the only impact to a ballot is fairness and deciding who wins, c] it internal link turns every impact – a limited debate promotes in-depth research and engagement which is necessary to access all of their education

### Adv

#### Objective Media Coverage is key to combat Vaccine Disinformation BUT Advocacy creates polarization that hardens misinformation.

Sullivan 21 Margaret Sullivan 3-7-2021 "The media plays a crucial role in battling vaccine misinformation. But here’s what not to do." <https://www.washingtonpost.com/lifestyle/media/vaccine-misinformation-media/2021/03/05/fd01a0ba-7dbd-11eb-a976-c028a4215c78_story.html> (Education: Georgetown University; Northwestern University's Medill School of Journalism)//Elmer

There are all sorts of ways to counter reluctance to get the coronavirus vaccine. There’s leading by example. There’s guilt. And there’s pure charm. Dolly Parton went the latter route last week as she got her first shot, wearing a sparkly blue cold-shoulder dress for her Instagram PSA and crooning “Vaccine” to the tune of her signature “Jolene.” Anthony S. Fauci made an argument both moral and scientific, reflective of his Jesuit education. “Think about your societal obligation,” he told members of the military, about a third of whom reportedly don’t want the vaccine. He added: “Like it or not, you’re propagating this outbreak.” And Boston Marathon director Dave McGillivray chose to inspire, explaining to the Wall Street Journal how he took the logistics expertise he would have deployed for this year’s canceled race and reapplied it to organizing vaccinations in Massachusetts instead. Despite all this high-level persuasion, a big chunk of Americans — about 3 in 10 — remain hesitant, according to a new Pew Research survey. And like Parton, Fauci and McGillivray, the news media has a role to play — not in outright advocacy, but in relentlessly providing accurate, nuanced information and answering questions straightforwardly. “There is a lot to be said for honestly reporting as much context as possible and knowing the terrain into which your sound bites and headlines will play,” said Emily Bell, director of the Tow Center for Digital Journalism at Columbia University. Although Bell is eager to see more people move past their concerns and get the vaccine, she told me she doesn’t believe in downplaying the numbers on negative reactions to shots: “All you are doing is reinforcing the narrative of the ‘wellness bloggers’ that Big Pharma is hiding something.” And what journalists shouldn’t concentrate on, according to one misinformation expert I talked to, is spending too much energy debunking myths. Some of the most popular myths: That tech mogul Bill Gates is secretly implanting microchips in people’s arms. That the vaccine causes the disease. That there are toxic levels of mercury in the doses. That flu shots protect against covid-19, so the newer vaccine is unnecessary. But even though such notions are incorrect and damagingly so, “the media should not be playing Whack-a-Mole by debunking every obscure rumor,” said Claire Wardle, founder of First Draft, a nonprofit that fights online misinformation. “The more you say some outrageous thing is not true — ‘No, Bill Gates is not microchipping you!’ — the more you give people the key words” that will send them down the social media rabbit hole of misinformation, she told me. “You’re giving it oxygen.” Instead, like Bell, she believes it’s all about relentlessly educating the public by answering reasonable questions with as much expertise as can be mustered. Local reporters — who tend to be relatively well-trusted — are especially important in this effort, providing basic information, and pointing readers or viewers to credible public-health sources. Sadly, there are far fewer of these reporters than when the pandemic began. At their best, local news organizations also provide important watchdog coverage, as the Boston Globe did Friday in an investigative report about Massachusetts Gov. Charlie Baker’s (R) administration disastrously pivoting to privatize vaccine distribution, with private entities awarded no-bid contracts “to undertake perhaps one of the state’s most pressing, ambitious initiatives in modern times.” The media’s performance, to date, has been far from perfect. Early on, the overemphasis of allergic reactions — without enough context — set a bad standard. And some experts think the media coverage has been too pessimistic overall. “The public has been offered a lot of misguided fretting over new virus variants, subjected to misleading debates about the inferiority of certain vaccines, and presented with long lists of things vaccinated people still cannot do, while media outlets wonder whether the pandemic will ever end,” sociologist Zeynep Tufekci wrote in the Atlantic. The joy of vax: The people giving the shots are seeing hope, and it’s contagious Still, there’s evidence that some people are changing their minds. The number of those who don’t intend to get the vaccine has come down from about 40 percent a few months ago to about 30 percent now, according to the new Pew numbers. Vaccine coverage still has room for improvement. “What the public needs to hear,” Tufekci wrote, “. . . is that based on existing data, we expect them to work fairly well — but we’ll learn more about precisely how effective they’ll be over time, and that tweaks may make them even better.” Before last year’s election, the reality-based media — to its everlasting credit — got across the idea that election night probably wouldn’t provide the answer to who won the presidency, that it might take weeks to count the vote. The media succeeded by repeating this message over many weeks, basing their accounts on credible experts, and warning about misinformation campaigns. When the pandemic-hampered vote count did indeed take several days, most news consumers were prepared to recognize this as acceptable, and far less likely to buy into the lie that the election had been stolen. Call it a victory, rare enough these days, for good information over bad. Vaccine coverage — with its life-or-death implications — is even more consequential. We need to get it right.

#### Credible News Distribution is key to vaccine adoption – it’s the only way to end Pandemics.

Harmon 21 Gerald Harmon 9-27-2021 "Defeating misinformation is key in ending the pandemic" <https://www.ama-assn.org/about/leadership/defeating-misinformation-key-ending-pandemic> (Gerald E. Harmon, MD, a family medicine specialist having practiced for more than 30 years in coastal South Carolina, became 176th president of the American Medical Association in June 2021. He was first elected to the AMA Board of Trustees in June 2013 and elected board chair in 2018. In addition, Dr. Harmon also served as the secretary of the AMA in 2016.)//Elmer

As we confront yet another major surge in COVID-19 cases and hospitalizations across the country, we are once more fighting a two-pronged war: against the virus and against rampant misinformation. The evidence around vaccination is abundantly clear. Vaccines are by far the best way for your patients to protect themselves and their loved ones from severe complications of COVID-19. But you wouldn’t know it if you were a regular viewer of some popular TV networks, or received your news from agenda-driven websites that traffic in half-truths and outright lies about the virus. Whatever their reasons, the result of this misinformation crusade is doubt, confusion and division at a time when our public response to this pandemic must be unified and resolute. This sobering reality has been made clear by the Centers for Disease Control and Prevention: Roughly 99% of deaths linked to COVID-19 in this wave—and the vast majority of those with severe symptoms that require hospitalization—have come among patients who were not fully vaccinated. The Food and Drug Administration’s recent approval of the Pfizer-BioNTech vaccine against COVID-19 is not only a landmark event in science and medicine; it is an opportunity to set the record straight. Vaccines for COVID-19 are safe. They are effective. And they are our best chance to bring this pandemic to an end. But vaccines alone won’t save us. Now, more than ever before, the public needs honest and clear communication about the importance of vaccines, vaccine science, and the crucial role they have in protecting public health. Obligations of responsible media Entities of public trust in society play an important role as credible sources for information at all times, but particularly during a public health crisis. Given their reach and influence, news organizations carry tremendous responsibility. They must help viewers and readers separate the facts from fiction, and proven treatments from potentially dangerous poisons. As physicians, and in an effort to ease the tremendous pressure on our nation’s health system, the AMA urges the cooperation of media outlets—TV, print and online—to tell the truth about the safety and efficacy of these COVID-19 vaccines, the rigorous research and review process behind them, and to be voices for science and evidence for their audiences. Reporting on unproven and potentially dangerous treatments for this virus, including ivermectin, hydroxychloroquine and other treatments that have not been scientifically validated, confuses the public and puts lives at even greater risk. As fall proceeds, the ongoing tragedy of the COVID-19 pandemic in our country is only intensified by the fact that science has given us the means to bring this dark chapter to a close. Vaccination is our only way out this pandemic—but that exit will remain blocked until the vast majority of those who are eligible to receive the vaccination do so. It is clear that some media outlets and personalities continue to foster hesitancy and resistance to COVID-19 vaccinations by framing the issue solely in terms of infringement upon civil liberties or personal freedom, and those voices that are then amplified through social media and other online channels.

#### Best studies conclude aff – misinformation independently causes disease spread, but “immunization” against “fake news” solves.

Brainard & Hunter ’19 [Julii Brainard – Dr, Senior Research Associate, Norwich Medical School Honorary Research Fellow, Norwich Medical School Member, Epidemiology and Public Health Member, Public Health and Health Services Research, Paul Hunter - Professor in Medicine, Norwich Medical School Member, Water Security Research Centre Member, Epidemiology and Public Health Member, Public Health and Health Services Research, “Misinformation making a disease outbreak worse: outcomes compared for influenza, monkeypox, and norovirus”, 11-12-2019, https://journals.sagepub.com/doi/full/10.1177/0037549719885021]//pranav

No previous studies have integrated information spread with disease spread to the level of sophistication that we have done. Prior models often considered information spread in disease outbreak development, but information awareness was typically equally available to all agents, and benign at worst. Thus, information spread in the models nearly always led to greater protective measures (such as increasing vaccine uptake or decreasing contact rates41–50). Most previous similar disease and awareness spread models had awareness increases that could only happen following physical contact or as a result of global conditions.42,45,48,50–55 Our modeling is unusual because information spread was individual and separated from the physical interactions that could transmit disease. Our model is unique and original in attempting to consider the potentially deleterious role of information sharing with stochastic and individually assigned elements. The need for research such as ours has been recognized before.17,56 More sophisticated information sharing networks than we tried to create could make these models more credible. There exist more sophisticated models on rumor spread that we could possibly replicate for the information spreading process,57–59 and simultaneously merge with existing sophisticated disease spread models. More ambitious models than ours would describe more agents and more complicated movement patterns, such as including flight as a behavior option. Many rumor spreading models have borrowed ideas and methods from epidemiological models,60,61 but not many (if any) previous models have integrated both rumor and disease spread as separate but interacting processes into one unified probabilistic model. This study describes the spread of three viral diseases; misinformation affecting the spread of bacterial diseases could be modeled equally well. The ideas could be applied to non-communicable diseases and health outcomes, but it would be necessary to change the time scale to be much longer to model chronic and lifestyle diseases and how their incidence might change in response to circulating misinformation. A much longer time scale would mean incorporating many other lifestyle factors into the models. Model construction relied heavily on a small number of existing studies about such factors as number of contact rates, social contacts (i.e.., Dunbar numbers), how much bad or good advice can change behavior, and the propensity to believe in misinformation (the finding that on average, British people believe in 38.9% of conspiracy theories that they are exposed to). More reliably estimating any of these and many of the other factors would also increase the credibility of our results. Our threshold for a “worse” outbreak situation was r0 being 40% worse or the number of generations of disease transmission increased from 4 to 7; these thresholds were decided for convenience in this set of demonstration models. Given our definition of stage 2 as an outbreak “made worse by circulating misinformation,” stage 3.1 modeling concluded for all three diseases that a ratio of about 60:40 good:bad advice circulating would reduce the stage 2 conditions to those of stage 1. The models also suggested that “immunizing” about 20% of the population against misinformation was likely to revert stage 2 to stage 1 conditions (for all diseases, stage 3.3). Since these apparent consistencies could be artefacts of shared model design, tests to explore the true consistency of these findings for multiple diseases would be worthwhile. It is possible that more sophisticated, detailed, or larger models or more flexible modeling software62 would facilitate better insights into risk distributions and behavior choices. There is uncertainty in the reliability of these findings because the models are experimental and have not been tested in real world situations. There is a general lack of reliable quantification for how much misinformation spread impacts real life risk-taking behavior with regard to communicable diseases. 5. Conclusions We applied three stages of modeling (1 = no misinformation spread, 2 = misinformation making outbreaks worse, and 3 = strategies to reduce the influence of misinformation). Our modeling approach and design is adaptable to many different types of diseases. Controlling spread of misinformation or susceptibility to it could reduce communicable disease burdens. Our stage 3.1 modeling found that a ratio of about 60:40 good:bad circulating advice reduced stage 2 conditions to those of stage 1 in three types of disease. “Immunizing” about 20% of the population against misinformation (stage 3.3) was likely to revert stage 2 to stage 1 conditions (for all diseases). The feasibility of implementing these types of strategies (“immunization” or changing the proportions of types of advice in circulation) should be explored. The efficacy of implementing such strategies to fight “fake news” needs to be tested in real world settings, with costs and benefits ideally compared with real world disease reduction.

#### Pandemics risk extinction - simulations, empirics, and surging connectivity prove.

Kim 21, Kiseong, et al. "Network Analysis to Identify the Risk of Epidemic Spreading." Applied Sciences 11.7 (2021): 2997. (Department of Bio and Brain Engineering, KAIST; R&D Center)//Re-cut by Elmer

Several epidemics, such as the Black Death and the Spanish flu, have threatened human life throughout history; however, it is unclear if humans will remain safe from the sudden and fast spread of epidemic diseases. Moreover, the transmission characteristics of epidemics remain undiscovered. In this study, we present the results of an epidemic simulation experiment revealing the relationship between epidemic parameters and pandemic risk. To analyze the time-dependent risk and impact of epidemics, we considered two parameters for infectious diseases: the recovery time from infection and the transmission rate of the disease. Based on the epidemic simulation, we identified two important aspects of human safety with regard to the threat of a pandemic. First, humans should be safe if the fatality rate is below 100%. Second, even when the fatality rate is 100%, humans would be safe if the average degree of human social networks is below a threshold value. Nevertheless, certain diseases can potentially infect all nodes in the human social networks, and these diseases cause a pandemic when the average degree is larger than the threshold value. These results indicated that certain infectious diseases lead to human extinction and can be prevented by minimizing human contact. 1. Introduction The emergence of a pandemic is one of the various scenarios frequently discussed as a human extinction event, and it is listed as one of the global catastrophic risks in studies regarding the future [1,2,3]. In particular, several pandemics, such as the Black Death [4,5], Spanish flu [6], and those caused by smallpox [7], severe acute respiratory syndrome (SARS) [8], and Ebola [9], have affected a large population throughout history. The risk of pandemics increases with an increase in population mobility between cities, nations, and continents, thereby threatening humankind [10,11,12]. It is essential to analyze the epidemic spread in society to minimize the damage from epidemic disasters; however, extinctive epidemic spreading experiments have limitations in real-world situations, as they predict stochastic effects on the spread without considering the structure of human society. Network-based approaches have been proposed to overcome these limitations and perform epidemic spreading simulations by considering the network structure of numerous real-world connections [13,14,15]. These methods use various models of epidemic spreading, such as the susceptible–infectious–susceptible (SIS) [16,17,18], susceptible–infectious–recovered (SIR) [19,20,21], and Watts threshold models [22]. While these methods are mathematically convenient, they are epidemiologically unrealistic for various infections because they require exponentially distributed incubation and infectious periods [23,24,25]. Moreover, previous epidemic studies did not perform quantitative assessment of the pandemic risk depending on the network connectivity in individuals and fatality rate of various diseases [26]. In the present study, we applied an SIR epidemic model to a scale-free network with Monte Carlo simulation to identify the quantitative relationship between infectious diseases and human existence. Our fundamental hypothesis states that when the epidemic spreads to all nodes of the network and the fatality rate is 100%, it can increase the pandemic risk. To address this, we initially constructed a scale-free network to simulate a society. Moreover, for the epidemic spreading simulation, an SIR model was applied to the network to describe the immune state of an individual after infection. From the simulation study, we found that the mean degree of a scale-free network was an essential factor in determining whether epidemics threaten humans. This approach provides important insights into epidemic spreading analysis by investigating the relationship between epidemic and scale-free network parameters. Furthermore, it highlights the necessity of determining information flow during an epidemic. 2. Materials and Methods We designed an epidemic simulation process to identify the relationship between pandemic risk and network parameters. This study was performed in four steps (Figure 1): (i) generating a scale-free network model to reflect real-world conditions; (ii) applying an SIR model to the scale-free network for epidemic spreading simulations; (iii) adapting the Monte Carlo method to reflect the stochastic process in the node status of the SIR model; and (iv) iteratively performing simulation for every parameter set and analyzing the results. We have provided the source code and sample results of epidemic simulation in Supplementary Materials. Figure 1. Overview of epidemic simulation process based on the Monte Carlo method. (A) We generated scale-free networks for a fixed population (N = 1,000,000) and various node degrees (k = 2, 5, 7, and 10). (B) Epidemic spreading was simulated by applying a susceptible–infectious–recovered (SIR) model to the scale-free network. We set the epidemic parameters, β and γd. β represents the spreading rate of epidemics, and γd is the reciprocal of γ and reflects the time interval between infection and recovery. Randomly, 0.05% of nodes were initially infected. (C) We adapted the Monte Carlo method to determine the status of the transition from the infection node to immunization node. Repeated simulations were performed until a steady state was achieved. (D) For every parameter set, 10,000 simulations were performed. 2.1. Network Generation Based on a Scale-Free Model We constructed a network model for the epidemic spreading simulation (Figure 1). The nodes and edges of the network represent people in the society and their physical contacts, respectively. We used a scale-free network model, which follows the preferential attachment property observed in numerous real-world networks, such as social networks, physical systems, and economic networks [27,28,29]. In the scale-free network, when a node is added to the network, its likelihood of connecting to existing nodes increases with an increase in the node’s degree. Hub nodes, which lead to fast and vast spreading of epidemics, exist. Two characteristic parameters, including N and k, affect the form of scale-free networks. The parameter N denotes all nodes in the network. In the real world, N indicates the whole population size. The parameter k is the average degree of the network, which determines the degree of the newly attached node for each step during network generation. Following the characteristics of the network model, we generated scale-free networks representing human contacts for epidemic spread. The scale-free network was generated by the Barabasi–Albert graph distribution, in which the network is constructed from a cycle graph with three vertices, followed by the addition of k edges at each construction step [30]. The k edges are randomly attached to the vertex based on the degree distribution of the vertex. After network generation, we investigated the degree distribution properties of the network (Figure 2). The results indicate that the degree distributions have similar tendency for networks with varying number of nodes and edges. This study constructed scale-free networks with the largest number of nodes considering computational complexity (N = 1,000,000). Figure 2. Degree distribution of the scale-free network. We analyzed the degree distribution of the network based on the number of nodes (N) and mean degree (k). 2.2. Epidemic Spreading Based on the SIR Model For the epidemic spreading simulations, we applied an SIR model to the generated scale-free network. The classical SIR model can be expressed by the following nonlinear differential equations [21]: where S, I, and R represent susceptible, infected, and recovered compartments, respectively, in the whole population. S represents people who have not been infected yet but can be infected in future. I represents infected people who can spread the epidemic to susceptible people through physical contact. R denotes people who have recovered or died from the epidemic and who no longer participate in the epidemic spreading process. The sum of the S, I, and R values represents the whole population size N. Epidemics have two parameters in the SIR model, transmission rate (β) and recovery rate (γ), which arise from the basic reproduction number R0 (Figure 1B). The basic reproduction number is the number of infections caused by one infective node [31,32,33]. If the R0 is more than 1, the infection can spread in a population, whereas if R0 is less than 1, the infection cannot spread. We express the basic reproduction number as R0 = β/γ, where β represents the spreading rate of epidemics between infective nodes and adjacent susceptible nodes and γ represents the probability of recovery from infection [34]. We mainly used γd, which is the reciprocal of γ and reflects the time interval between infection and recovery. 2.3. Investigation of Epidemic Status Based on the Monte Carlo Method The epidemic simulation was performed for a time series event by constructing epidemic status matrix (z) to represent the status of the nth node at time step t. For each node, the value of epidemic status matrix at time step t can be 0, 1, or 2, indicating that a node is susceptible, infective, or recovered, respectively. We initially (t = 0) set every value of epidemic status matrix to 0 because all nodes are susceptible before the epidemic spreads. At the initial infection stage, randomly selected 0.05% of nodes were infected. At every time period, we performed immunization and observed the infection stages (Figure 3). At the immunization stage, we identified infective nodes and determined whether these nodes would be recovered in the next time step. To calculate the transition probability of infected and recovered phenomena, the Monte Carlo method was applied [35,36]. When infection and recovery parameters are provided, it is possible to investigate whether a node transitions from an epidemic state to another state. To accomplish this, we compared the method revealing the change in each population in every compartment over time (Figure 4). The final steady state of the epidemic spreading simulation model indicates the total number of casualties of the epidemic who either are dead or have recovered from the disease. Infective nodes at time t (zn [t] = 1) are transformed to recovered nodes at time t + 1 (zn [t + 1] = 2) when 1/γd is larger than a random real number between 0 and 1. We determined whether the neighbor nodes of the infection node would be infected by identifying susceptible nodes adjacent to the infective nodes at time t (zn [t] = 0, with the adjacent infective node) (Figure 5). When β is larger than a random real number between 0 and 1, a susceptible node becomes an infective node at time t + 1 (zn [t + 1] = 1); this scenario represents epidemic spread. For each time step, we recorded the number of susceptible, infective, and recovered nodes during epidemic spread. 2.4. Simulation Parameters We carried out simulation trials for various mean degrees of networks (k = 2, 5, 7, and 10). Each network considered the following epidemic parameters: β ranges from 0.05 to 0.95 and γd ranges from 1 to 10. The Monte Carlo model was repeatedly simulated to observe saturation of the recovery process. Considering that the simulation pipeline contains random processes such as initial infection and Monte Carlo trials, we performed the simulation iteratively until the status of nodes remained unchanged. After simulation, time series data from every simulation were interpolated in the time domain. The fatality rate determines the ratio of deceased and recovered individuals in the final population [37,38,39]. If the fatality rate is below 100%, the recovered population contains both dead and recovered individuals. Such a situation does not always cause a pandemic. In this simulation, we assumed a 100% fatality rate. To accomplish this, we enumerated the recovered nodes as dead for considering the pandemic risk. 3. Results Through our method, we obtained epidemic spreading data with various network and epidemic parameter sets. In the present study, we focused on the case where the epidemic infects all nodes and defined this phenomenon as “extinctive spread”. Diseases causing extinctive spread are potential candidates of high pandemic risk. In the real world, extinctive spreading indicates that the disease will infect every person in the society. From the simulation data, we calculated the extinctive spread score by dividing the total number of simulation trials by the number of extinctive spread cases. Thereafter, we identified that the number of extinctive spread cases is mainly influenced by spreading speed, which is determined by β, γd, and k (Figure 6). The extinctive spread region (brown area in Figure 6) is expanded as the value of mean degree of network (k) is increased, thereby indicating that the area of extinctive spread becomes noticeably wider in a dense network than in a sparse network. Thus, the more contact between people, the higher the risk of epidemics. Moreover, high γd and high β cause extinctive spread across a large region, indicating that the high spreading rate and short time interval between infection and recovery are risk factors of epidemic diseases. In contrast, the infective nodes recover before they transmit the disease to their neighbors in low β and low γd scenarios, thus disconnecting the network and preventing extinctive spread. This occurs because the infective nodes need more time to transmit the disease in low β and high γd scenarios. Therefore, the disease begins to subside due to a lack of new infective nodes. Furthermore, we investigated the range of β and γd for existing epidemics of the common cold [40,41] and fatal diseases, namely, cholera [42,43], Marburg [44,45], Ebola (Congo and Uganda) [46,47,48,49], SARS [50], and MERS [51] (Table 1). We selected diseases with relatively well-known epidemic parameters, such as average duration of infection and basic number of reproductions from previous studies. Transmission rates were calculated using the mean duration of infectious periods and basic reproduction numbers of the epidemics. Different studies reveal multiple values of infectious period and transmission rate for some of these diseases; we considered these values separately [40,41,42,43,46,47,48,49]. For example, the infectious period of a common cold is from 3 to 7 days and that of Ebola is 6.5 days. Next, we placed the possible regions of these epidemics as a disease band for various k values (colored lines in Figure 6). When k > 5, fatal diseases have an opportunity to cause a pandemic. Even when k = 5, diseases such as cholera and Ebola (Congo) can be threatening in regions of low γd and high, thus demonstrating that the knowledge of network parameters of the society and the characteristics of epidemic diseases can aid in quantifying the risk of epidemics. 4. Discussion Many previous studies have made stochastic SIR models to analyze the dynamics or stability of epidemic diseases. They investigated the distribution of susceptible, infected, and removed populations for specific epidemic disease spreading, such as cholera, SARS, Marburg, and MERS, based on mathematical modelling [52,53,54,55]. However, they did not conduct a quantitative assessment of pandemic risk taking into account physical contact between people. To solve this limitation, we performed epidemic spreading simulations by applying an SIR model to scale-free networks with Monte Carlo simulation. In the simulation, we consider various connectivity and disease characteristics on scale-free networks. For each network and epidemic parameter set, the probability of extinctive spread was calculated. The results revealed that certain infectious diseases can lead to extinction. Moreover, even if the disease band extends over the extinctive spread regions, it does not indicate that human extinction results from the disease, as the fatality rate is below 100%; however, in the case of 100% fatality, the disease can cause a human extinction event. The risk of infectious disease is influenced by the network structure. A dense network has a higher risk of spreading infectious disease than a sparse network, as we observed in the extinctive spreading maps. According to our results, when the average degree of human social networks is below the risk threshold, i.e., less than 4 in this study, human society is safe from an extinctive outbreak based on our knowledge regarding the epidemic parameters of the infectious disease. Nevertheless, in other cases, human extinction is possible. For example, if the population is 1,000,000 and there are 4 or more instances of physical contact between people, human extinction events may occur, depending on the fatality rate of the epidemics. Hence, physical contact between people is closely related to an extinction event of infectious diseases. Eventually, from a public health perspective, lowering the average contact level of society is an appropriate way to increase the robustness of strategies against the occurrence of extinction. In the real world, reducing network density can be accomplished by epidemic prevention activity, such as isolation and quarantine treatment. This action prevents epidemic risk to the society, thereby avoiding human extinction. Additional considerations may improve our analysis. First, large population size and various proportions of initial infective nodes were not considered in the experiments. We have confirmed that the result was consistent when the proportion of initial infective nodes was 0.05% of the total population; however, this can vary depending on the distinct proportion of initial infective nodes in a different population. To achieve robust results, we need to perform additional experiments for various parameters; however, we could not address this issue due to computational complexity. Second, we did not consider numerous known epidemic diseases. We calculated the transmission rates of epidemic diseases using the known infectious periods and reproduction numbers of the epidemics from evidence in the literature. In the present study, we only considered five epidemic diseases, since the information on infectious periods and reproduction numbers of diseases was mostly unavailable for other epidemic diseases. Third, this study only considers the SIR model on scale-free networks in epidemic simulation. Since the dynamics of epidemic diseases can be varied in different models or networks, it is important to experiment in various simulation environments to confirm the robustness of the results. Nevertheless, these limitations can be considered in future experiments or using improved computational methods. With these further improvements, our approach can be used as a computational tool to analyze the risk of epidemic diseases. 5. Conclusions In this study, we analyzed the risk of epidemic diseases by creating an epidemic simulation on a scale-free network. Based on the simulation results for various epidemic parameters, we confirmed that certain infectious diseases can lead to extinction and can be prevented by minimizing human contact. We believe that identifying potential candidate diseases that may lead to human extinction is crucial in addressing epidemic prevention activities such as quarantine.

1. https://dictionary.cambridge.org/us/dictionary/english/unjust

   [↑](#footnote-ref-1)