

Gricean Charity

The Gricean Turn in Psychology

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Psychologists' work on conversational pragmatics and judgment suggests a refreshing approach to charitable interpretation and theorizing. This charitable approach—what I call *Gricean charity*—recognizes the role of conversational assumptions and norms in subject-experimenter communication. In this paper, I outline the methodological lessons Gricean charity gleans from psychologists' work in conversational pragmatics. In particular, Gricean charity imposes specific evidential standards requiring that researchers collect empirical information about (1) the conditions of successful and unsuccessful communication for specific experimental contexts, and (2) the conversational norms governing communication in experimental contexts. More generally, the Gricean turn in psychological research shifts focus from attributional to reflexive, situational explanations. Gricean charity does not primarily seek to rationalize subject responses. Rather, it imposes evidential requirements on psychological studies for the purpose of gaining a more accurate picture of the surprising and muddled ways in which we weigh evidence and draw.

Keywords: *Gricean charity; methodological rationalism; interpretation; principle of charity; cognitive psychology; conversational pragmatics; heuristics and biases; reflexive analysis*

Traditional accounts of charitable interpretation that rely on norms of rationality to guide interpretation have typically invoked rules of logic and probability, as well as principles of evidence or justification—while overlooking norms governing the social and communicative relationships between the interpreter and interpreted.

Psychologists working on conversational pragmatics and judgment have observed the same oversight in their field: researchers, especially those

Author's Note: Thanks to Elizabeth Anderson, James Joyce, Peter Railton, Paul Thagard, Norbert Schwarz, Paul Roth, Alison Wylie, James Bohman, and the audience members at the Seventh Annual Philosophy of Social Science Roundtable for comments that have sharpened up this paper.

from the heuristics and biases tradition, who tend to argue that subjects are systematically irrational, have neglected to consider how social or conversational norms may influence subjects' interpretations of and communications with experimenters.¹ In response, psychologists such as Norbert Schwarz, Denis Hilton, and Gerd Gigerenzer have invoked Paul Grice's principles of cooperative communication to attribute alternative interpretations of experimental tasks to subjects—interpretations for which subject responses may be said to be “conversationally rational.”²

My account of charitable interpretation broadens traditional charitable accounts by recognizing conversational norms as rational principles of conversational inference. I will call the general method of using conversational principles to guide interpretation *Gricean charity*. Gricean charity provides a naturalized account of charity which looks to facts about natural language and communication in the interpretation of subject responses. I take psychologists' work in conversational pragmatics as primary exemplars of Gricean charity at work. This work demonstrates that a broader perspective on rationality and the nature of subject-experimenter communication imports specific evidential requirements on psychological studies: namely, that subject responses be interpreted in light of empirical information about (1) successful and unsuccessful communication in specific experimental contexts, and (2) the conversational norms governing communication in experimental conditions.

The genealogy of this charitable approach may be traced back to “the presentation problem” faced by Ward Edwards.³ In order to test human performance on rational choice tasks, psychologists have to put the task and options into words. However, turning the decision task into a word problem adds an additional level of complexity for both the subject and researcher. For the subject, natural language expressions are often ambiguous, and may support any number of meanings. So, the subject must interpret the intended meaning of the stated task, and provide a response under that interpretation. As a result, the subject's choice behavior is influenced by her interpretation of the experimental task. Edwards's observation may be captured by a more general Davidsonian lesson: any psychological theory on human judgment

1. Denis J. Hilton, “The Social Context of Reasoning: Conversational Inference and Rational Judgment,” *Psychological Bulletin* 118, no. 2 (1995): 249.

2. Norbert Schwarz, “Judgment in a Social Context: Biases, Shortcomings, and the Logic of Conversation,” *Advances in Experimental Social Psychology* 26 (1994): 123-62.

3. Ward Edwards discusses this kind of problem, though not under the rubric “presentation problem.” Ward Edwards, Harold Lindman, and Lawrence D. Phillips, “Emerging Technologies for Making Decisions,” in *New Directions in Psychology* 2 (New York: Holt, Rinehart & Winston, 1965).

“must *include* a theory of interpretation” about subjects’ beliefs about the experimental task.⁴

In the first part of this paper, I will lay out my account of Gricean charity. First, I will argue that conversational norms are indeed relevant to the questionnaires and surveys used in psychological testing. To illustrate, I will reinterpret some portions of Kahneman and Tversky’s Linda questionnaire in light of Gricean conversational maxims, and use this reinterpretation to rationalize subject responses. This analysis serves to highlight the methodological lessons of the Gricean turn in psychological research. In the second part of this paper, I will consider and respond to methodologically motivated objections to Gricean charity. In the course of responding to these objections, I will argue that Gricean charity generates new psychologically interesting questions, phenomena, and methods, without harboring scientifically illegitimate forms of bias.

1. Gricean Charity

A. Questionnaires as Forms of Cooperative Communication

Conversational pragmatics invokes normative principles of communication to account for how subjects arrive at their interpretations of the experimental task. For an account of these norms, researchers have turned to Paul Grice’s account of cooperative communication. According to Grice, cooperative communication aims to use language efficiently and effectively to further a common goal or set of goals. Communication is said to be rational insofar as it conforms to conversational principles that are themselves instrumental in furthering these cooperative ends.⁵ The most general principle, the Cooperative Principle (CP), directs conversants to “[m]ake your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.”⁶ Grice analyzes CP into the following general principles:

Quality: (1) do not say what you believe to be false, and (2) do not say that for which you lack adequate evidence.

4. Donald Davidson, “Belief and the Basis of Meaning (1974),” in *Inquiries into Truth and Interpretation* (New York: Oxford University Press, 2001), 147. The italics are mine.

5. Paul Grice, “Logic and Conversation,” in *Studies in the Way of Words* (Cambridge, Mass.: Harvard University Press, 1989), 28.

6. *Ibid.*, 26.

Quantity: (1) make your contribution as informative as is required for the current purposes of the exchange, and (2) do not make your contribution more informative than is required.

Relevance: make your contribution relevant.

Manner: (1) avoid obscurity of expression, (2) avoid ambiguity, (3) be brief (avoid unnecessary prolixity), and (4) be orderly (provide information in a sequentially accessible way).

The conversational maxims provide interpretations of utterances of natural language expressions. Natural language expressions often imply multiple meanings, or imply meanings that are not captured by the literal statement as expressed. The conversational maxims provide a way of inferring a speaker's intentionally implied meaning—that is, the *conversational implicature*—even when this meaning goes beyond the literal meaning of what she has said.⁷ Conversational implicatures are calculable in the sense that, for every putative implicature, it is possible to construct an inductive argument showing how the implicature follows given the literal meaning of the utterance, mutually recognized facts about the particular context of communication, and the conversational maxims.⁸ If the hearer discovers that any of these premises are false, then the implicature is *cancelled*.

7. The special case Grice considers is one in which a conversant *flouts* a conversational maxim. Here, a conversant provides a contribution that, when taken literally, violates one of the maxims. For example, let's say Dick and Jane have plans to meet with a third person, Tom, who is very late (and usually so). Dick asks, "What happened to Tom?" Jane responds, "Tom's watch must operate counterclockwise." Jane's contribution, when taken literally, is false—she *knows* Tom's watch does not operate counterclockwise. Jane flouts the maxim of quality which enjoins her to provide true or well-founded contributions. In order to construe Jane's contribution as conforming to the maxim of quality, we infer that she intends to imply something beyond the literal meaning of her statement—something that is actually true—perhaps that "Tom has profound trouble keeping track of time." Jane expects Dick to be able to infer this implied meaning, given what he knows about Jane, the conversational context, and the conversational maxims. The interpretation of a wide range of linguistic phenomena (such as figures of speech, hyperbole, metonymy, irony, and metaphor) may be subsumed under the more general problem of interpreting implicatures.

8. Stephen Levinson analyzes the inductive argument constructed by the hearer in the following way:

- (i) *S* has said that *p*.
- (ii) There's no reason to think *S* is not observing the maxims or at least the co-operative principle.
- (iii) In order for *S* to say that *p* and be indeed observing the maxims or the co-operative principle, *S* must think that *q*.
- (iv) *S* must know that it is mutual knowledge that *q* must be supposed if *S* is to be taken to be co-operating.

Psychologists working in conversational pragmatics have argued that questionnaires can be understood as forms of cooperative communication. As Hilton points out, psychological experiments and surveys used to test cognitive competence “are forms of social interaction between the experimenter and participant, which invariably involve communication through ordinary language.”⁹ Experimenters provide subjects information via instructions, questionnaires, and surveys; and subjects provide responses in the form required. As in other conversational settings, these forms of information exchange are carried out in ordinary language.

Researchers in conversational pragmatics have argued that experimenters and subjects share a mutual recognition that their efficient, effective acts of communication serve mutually understood goals. Subjects know that experimenters aim to collect data—namely, subjects’ responses to predesigned questions and experimental tasks. Since subjects cannot ask for clarification or paraphrases of the question, the experimental conditions encourage them to assume that the meanings of the questions and tasks are self-evident.¹⁰ With this knowledge, subjects can expect that experimenters expedite this process by stating their questions and tasks clearly, concisely, and sufficiently. That is, subjects may reasonably expect questionnaires and surveys to conform to the maxims of quantity, relevance, and manner. For subjects, experiments are conducted by their academic and epistemic authority figures: much current research is conducted on undergraduate psychology students by graduate students and professors. Because of the asymmetry in authority, expertise, and knowledge between experimenters and subjects, subjects may reasonably expect experimenter-provided information to be especially truthful and well supported, in accordance with the maxim of quality.¹¹

Experimenters know that subjects characteristically participate in the experiments to fulfill requirements for their introductory psychology courses, or for small monetary rewards. Coming into a psychological experiment, subjects come with prior expectations about the experimenter’s goals. In

- (v) *S* has done nothing to stop me, the addressee, from thinking that *q*.
- (vi) Therefore, *S* intends me to think that *q*, and in saying that *p* has implicated *q*.

Stephen Levinson, “Conversational Implicature,” in *Pragmatics* (Cambridge: Cambridge University Press, 1983), 113-14.

9. Hilton, “The Social Context of Reasoning,” 249.

10. Herbert H. Clark and Michael F. Schober, “Asking Questions and Influencing Answers,” in *Questions about Questions: Inquiries into the Cognitive Bases of Surveys*, ed. Judith M. Tanur (New York: Russell Sage Foundation, 1992), 26.

11. Hilton, “The Social Context of Reasoning,” 254.

particular, they know that the experimenters have designed special questions, with the goal of evaluating and explaining their answers. In order for their answers to be constructive or relevant toward the experimenters' goals, the subjects are expected to answer sincerely, in conformance with the maxim of quality; and, in order to help the experimenters carry out this goal efficiently (given the number of subjects involved), they are expected to answer in conformance with the maxims of relevance, quantity, and manner.

Even when subject responses take the form of checking boxes, circling multiple-choice options, or ranking outcomes, these maxims still apply. Even with such regimented forms of response, the maxim of quality dictates that subjects provide honest rather than dishonest answers. The maxim of relevance directs subjects to answer the experimenter's intended question, and not a different question that may be more amusing to entertain. The maxim of quality enjoins subjects to provide sufficient answers by answering all questions. And, in accordance with the maxim of manner, subjects are expected to provide unambiguous, clearly marked, and quickly deciphered responses: for example, it would be inappropriate for a subject to provide a long-winded essay in answering a multiple-choice question.

In the experimental context, subjects can rely on special kinds of clues in interpreting the experimenters' intended meanings—clues such as the wording of the task, the questionnaire's previous questions, the formal structure of the questionnaire, and interactions with and assumptions about the experimenter.¹² Such evidence grounds key implicatures about the meaning of the experimental task or question.

B. The Linda Problem

To see how conversational norms and assumptions can inform our interpretation of subjects' responses, consider Daniel Kahneman and Amos Tversky's *Linda problem*:

Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations.

Please rank the following statements by their probability, using 1 for the *most probable* and 8 for the *least probable*.

12. For a nice review of this research, see Norbert Schwarz, *Cognition and Communication: Judgmental Biases, Research Methods, and the Logic of Conversation* (Mahwah, N.J.: Lawrence Erlbaum, 1996).

Linda is a teacher in an elementary school.
 Linda works in a bookstore and takes Yoga classes.
 Linda is active in the feminist movement.
 Linda is a psychiatric social worker.
 Linda is a member of the League of Women Voters.
 Linda is a bank teller.
 Linda is an insurance salesperson.
 Linda is a bank teller and is active in the feminist movement.¹³

According to probability theory, the probability of two events A and B is equal to or less than the probability of each of its conjuncts: $p(A + B) \leq p(A)$ and $p(A + B) \leq p(B)$. If we identify Linda's being active in the feminist movement as event A , and Linda's being a bank teller as event B , subjects should rank the probability that Linda's both a bank teller and active in the feminist movement (A and B) as equal or lower than the ranking for A or B considered alone. They found that the vast majority of statistically naïve and statistically sophisticated subjects rated the conjunction of events as more probable than the conjunct, in violation of the conjunction rule.

However, it isn't clear that subjects can be said to have violated the conjunction rule, if we reinterpret the questionnaire in light of Grice's conversational maxims.¹⁴ The only information required to rank the probabilities in accordance with the conjunction principle is two particular outcomes: the outcomes "Linda is a bank teller" and "Linda is a bank teller and is active in the feminist movement." The rest of the cover story, such as the personality description and the other outcomes, are irrelevant, unnecessary, and superfluous.¹⁵ The experimenters' question, as stated, violates the maxims of relevance, quantity, and manner.¹⁶ These violations have implications for

13. Amos Tversky and Daniel Kahneman, "Judgments of and by Representativeness," in *Judgment under Uncertainty: Heuristics and Biases*, ed. Daniel Kahneman, Paul Slovic, and Amos Tversky (New York: Cambridge University Press, 1982).

14. The line of argument here is due to Ralph Hertwig and Gerd Gigerenzer, "The 'Conjunction Fallacy' Revisited: How Intelligent Inferences Look like Reasoning Errors," *Journal of Behavioral Decision Making* 12 (1999): 275-305.

15. Jonathan E. Adler, "Abstraction Is Uncooperative," *Journal for the Theory of Social Behavior* 14, no. 2 (1984): 165-81.

16. Notice that the personality description and the rest of the outcomes are relevant to the question of how the outcomes "Linda is a bank teller" and "Linda is a bank teller and is active in the feminist movement" rank relative to the other outcomes. However, the personality information and other outcomes are not relevant to the question Kahneman and Tversky are primarily interested in: namely, how the outcomes "Linda is a bank teller" and "Linda is a bank teller and is active in the feminist movement" rank relative to each other.

the questionnaire's validity. If subjects enter the experiment under the assumption that experimenters are cooperative communicators, they would rule out this interpretation, since it construes experimenters as violating conversational norms.

Subjects are thus put in the position of interpreting the meaning of the experimenters' question so that it conforms to the conversational maxims. Such an interpretation must render *all* of the information provided by experimenters as useful and relevant to solving the intended question. One way to render the extra personality and outcome information useful and relevant is to take the experimenters as asking something other than a mathematical probability question. The term *probable* is polysemous: it can also be interpreted as meaning *plausible*, *having an appearance of truth*, or *reasonable in light of the evidence*.¹⁷ Subjects, faced with the problem of inferring which of these meanings experimenters implicate, might interpret the question as a *plausibility* problem, where an outcome is said to be more "plausible" insofar as it has something to speak in favor of it. Under this interpretation of the question, it is not incorrect to judge the conjunction of events as more plausible than its conjunct: given the personality description, the outcome "Linda is a bank teller" has nothing to speak in favor of it; however, the outcome "Linda is a bank teller and is active in the feminist movement" does have something to speak in favor of it, since we expect Linda's commitment to liberal values would be expressed in her choice of occupation and/or hobbies.¹⁸

The notion of plausibility might also be understood as having something to do with how well the personality information might explain the different outcomes: the personality description provided has more explanatory strength when it comes to explaining why "Linda is a bank teller and active in the feminist movement," as opposed to explaining why "Linda is a bank teller." If subjects interpret *probability* to mean something like *degree to which they can be explained*, then subjects' responses cannot be said to be incorrect. Not only does the personality description better explain the conjunction than the conjunct, but—as Kahneman and Tversky themselves

17. Hertwig and Gigerenzer, "The 'Conjunction Fallacy' Revisited." See also Gerd Gigerenzer, "On Narrow Norms and Vague Heuristics: A Reply to Kahneman and Tversky (1996)," *Psychological Review* 103, no. 3 (1996): 284-308.

18. An alternative interpretation of "plausibility" might be provided by the notion of "conceptual coherence." For a model of conceptual coherence that bears on how stereotypes and individuating information can inform each other, see Ziva Kunda and Paul Thagard, "Forming Impressions from Stereotypes, Traits, and Behaviors: A Parallel-Constraint-Satisfaction Theory," *Psychological Review* 103, no. 2 (1996): 284-308.

point out—best explanations and most probable outcomes often have an “inverse relationship”:¹⁹ the value of an explanation can be improved by increasing its content and scope, even though the probability of its truth is reduced thereby.²⁰

C. Methodological Implications of the Gricean Turn

Gricean charity provides an interpretation of subjects that rationalizes their apparently irrational responses. Grice’s conversational maxims suggest that Kahneman and Tversky’s statement of the Linda problem misleads at least some subjects to solve a different problem—a problem for which subjects’ responses are rational. Accordingly, Kahneman and Tversky are not entitled to describe subjects as providing irrational responses.

This is the first methodological lesson I draw from the Gricean turn in psychological research: the conclusions of any psychological study can only be as valid as its questionnaires and surveys. If experimenter communications violate the conversational maxims, leaving greater room for the interpretation of unintended implicatures, then we cannot take subjects’ responses at face value—much less generalize or explain them. The Gricean turn suggests researchers studying human reasoning create semantically clear questionnaires and surveys, in conformance with conversational maxims. Even Kahneman and Tversky seem to accept this point. In the postscript of their canonical book *Judgment under Uncertainty: Heuristics and Biases*,

19. Amos Tversky and Daniel Kahneman, “Extensional versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment,” *Psychological Review* 90, no. 4 (1983): 312.

20. Conversational implicature may also play a role in subjects’ interpretation of the outcome “Linda is a bank teller.” Subjects might interpret this outcome, when stated alone, as the most information the experimenters can assert with confidence according to the maxim of quantity. However, when presented with the accompanying outcome “Linda is a bank teller who is active in the feminist movement,” the meaning of “Linda is a bank teller” is unclear. Subjects may have taken the additional information “who is active in the feminist movement” as indicating a kind of *contrast*, where “Linda is a bank teller” is supposed to mean that “Linda is a bank teller who is *not* active in the feminist movement.” This interpretation would distinguish the outcomes “Linda is a bank teller” and “Linda is a bank teller who is active in the feminist movement” as non-overlapping events. To prevent subjects from adopting this interpretation, Tversky and Kahneman rephrased “Linda is a bank teller” as “Linda is a bank teller, whether or not she is active in the feminist movement.” However, Don Dulany and Denis Hilton found that only 28% of subjects interpreted “whether or not she is active in the feminist movement” in the way Tversky and Kahneman hoped. See Tversky and Kahneman, “Judgments of and by Representativeness”; and Don E. Dulany and Denis J. Hilton, “Conversational Implicature, Conscious Representation, and the Conjunction Fallacy,” *Social Cognition* 9, no. 1 (1991): 85-110.

Kahneman and Tversky admit that apparently irrational responses elicited from subjects could have arisen from the subjects' misunderstandings of the question.²¹ And, they concede that the "conversational aspect of judgment studies deserves more careful consideration than it has received in past research, *our own included*."²²

Another methodological lesson of the Gricean turn is that experimenters, in arguing for the validity of their questionnaires and surveys, must collect data about subjects' interpretations of the experimental tasks. Kahneman and Tversky's research up to that point had been conducted using a *question-answering paradigm*, where "the subject is exposed to information and is asked to answer questions or to estimate values, orally or in writing."²³ Subjects were provided uniform information from experimenters, and experimenters assumed subjects' interpretations would be uniformly identical with their own. However, because communicating clearly in experimental conditions is itself a challenge, this is not a safe assumption.²⁴

The Gricean turn also reminds us that effective communication requires cooperation by both experimenter and subject. Indeed, experimenters shoulder a *greater* responsibility for clear communication because of the asymmetrical nature of experimenter-subject communication. Unlike ordinary conversation, the course and content of communication in experimental conditions are predetermined by only one conversant, namely, the experimenter.²⁵ Experimenters can direct the subjects and ask any number of clarificatory questions, though the converse is not true. As a result, experimenters are especially responsible for making "correct assumptions about the codes and contextual information that the audience will have accessible and be likely to use in the comprehension process."²⁶

21. Daniel Kahneman and Amos Tversky, "On the Study of Statistical Intuitions," in *Judgment under Uncertainty: Heuristics and Biases*, ed. Daniel Kahneman, Paul Slovic, and Amos Tversky (New York: Cambridge University Press, 1982), 493.

22. *Ibid.*, 504; emphasis added.

23. *Ibid.*, 501.

24. Indeed, subsequent testing has found that subjects usually misinterpret the meaning of key words and phrases in the Linda problem and other problems from the heuristics and biases tradition. Hertwig and Gigerenzer used a multiple-choice method in checking subjects' interpreted meaning of "probability" by asking them to check which of a list of terms best reflected their understanding of "probability" in the Linda problem. They found that only 12% of checked choices were mathematical (e.g., "expectancy," "frequency," "percentage," "logicality," or "certainty"). See Hertwig and Gigerenzer, "The 'Conjunction Fallacy' Revisited," 280-82.

25. Clark and Schober, "Asking Questions and Influencing Answers," 26.

26. Dan Sperber and Deirdre Wilson claim this asymmetry in communication exists in all communicative contexts. I do not agree with this stronger claim. Dan Sperber and Deirdre Wilson, *Relevance: Communication and Cognition* (Oxford: Basil Blackwell, 1986), 43.

The Gricean turn changes the nature of the investigation—away from sweeping charges of rationality or irrationality lodged against subjects—toward exploration of the communicative conditions that either tend to mislead subjects or tend to facilitate their successful performance.²⁷ Such investigation, undertaken by psychologists studying conversational pragmatics, is *situational* since it focuses on *experimental conditions* to explain the apparent rationality or irrationality of subject responses. The situational explanation here is of a special kind, in which the experimenter and the experimenter's relationship with the subject partly constitute the explanatory situation/context. The situational explanation suggested by Gricean charity is *reflexive*, insofar as it considers how the experimenter and the experimenter's relationship with the subject play a role in subjects' observed behavior. Such situational explanations shift investigation away from *attributional* explanations, which focus on characteristics of the subjects themselves—such as flawed or limited memory, attention, search, or reasoning strategies. The great irony here is that explanations that unfairly blame subject responses on internalized judgment heuristics risk committing the fundamental attribution error.²⁸

D. Naturalized Conversational Norms

The great methodological insight of conversational pragmatics is that, rather than make unsubstantiated assumptions about subjects' interpretations of experimental tasks, researchers ought to gather evidence to identify those interpretations and identify conditions of successful versus unsuccessful communication. However, in hypothesizing about subjects' conversational inferences, critics might argue that researchers in conversational pragmatics have adopted a few working assumptions of their own about subjects' conversational assumptions and norms. In particular, researchers in conversational pragmatics have uncritically adopted Grice's maxims of conversation as the relevant norms of conversation in subject-experimenter communication. One possible explanation for this is that researchers have regarded Grice's conversational maxims as universal norms of conversation.

Regarding Grice's maxims as universal norms of conversation would fail to respect the context and cultural relativity of such norms. Everyday experience demonstrates that the content of conversational norms varies depending on the context and goals of communication. For example, we recognize that in contexts where conversation is made for the sake of mutual entertainment, the

27. Thanks to Elizabeth Anderson for this insight.

28. Hilton, "The Social Context of Reasoning," 249.

maxims of manner, quantity, and quality do not apply: many of the anecdotes, jokes, and tangents we trade are valued precisely for the creative ways in which the descriptions of true or merely hypothetical events are drawn out, elaborated, and exaggerated. Additionally, the conversational norms may depend on broader cultural norms or goals: the research of linguistic anthropologists demonstrates that conversational norms we hold dear are not universal, but reflect the goals and cultural norms of specific social milieus.²⁹

Regarding Grice's maxims as universal norms of conversation would also fail to capture the dynamic relationship between conversational norms and subjects' goals, questionnaire content, and communicator identity. To illustrate, consider the following case of subject-experimenter communication. Subjects familiar with psychological testing may know that the ostensible purpose of an experiment is often different from its real purpose. Subjects who know this may think it likely that experimenters are trying to deceive them in the sense that the experimenter aims to gather information about the subject that is not directly asked for. Since this assumption is true more often than not, especially in questionnaires from the heuristics and biases tradition, it would be reasonable for subjects *not* to assume that experimenters' conversational contributions conform to the maxims of quality, quantity, or relevance. Subjects who look skeptically upon the questions asked of them may adopt the goal of figuring out what the experimenters are *really* after, and provide answers that seek to uncover or frustrate the experimenter's goals.³⁰ In this scenario, subjects would best be described as rejecting Grice's maxims of quality, quantity, and relevance.

Although researchers in conversational pragmatics have not explored conversational norms that differ in content from Grice's maxims, it would be unfair to construe them as adopting Gricean norms as universal norms of conversation. These researchers have gone to great lengths to cite a broad range of studies suggesting that subjects respect something like the maxims of quality, relevance, manner, and quantity.³¹ They have also sought to

29. For example, Michelle Rosaldo's fieldwork suggests that the Ilongots do not share Grice's commitment to the maxim of quality. She argues that the primary conversational norm in Ilongot culture directs conversants to provide conversational contributions that maintain social roles and relationships, regardless of the truth of those assertions. Michelle Z. Rosaldo, *Knowledge and Passion: Ilongot Notions of Self and Social Life* (Cambridge: Cambridge University Press, 1980). For similar kinds of critiques in the context of Malagasy society, see Elinor Ochs Keenan, "The Universality of Conversational Postulates," *Language in Society* 5 (1976): 67-80.

30. Thanks to Peter Railton for raising this possibility.

31. For extensive reviews, see Hilton, "The Social Context of Reasoning." See also Schwarz, *Cognition and Communication*.

empirically support their account of subjects' conversational assumptions. For example, they cite experiments studying how subjects' judgments of trustworthiness (on the part of the experimenter) vary with changes in the content of communication and the identity of the communicator.³² The implication of citing this research is supposed to be that subjects' judgments of trustworthiness may have important effects on what conversational norms govern subject-experimenter communication.

The best interpretation of researchers' commitment to Grice's maxims is to interpret them as adopting Grice's maxims as empirically compelling formulations of the conversational norms that seem to govern subject-experimenter communication in certain types of experimental contexts. Grice's maxims are not presented as uncontested social facts, but as working hypotheses. However, in embracing a naturalized account of conversational norms, conversational pragmatics would be well served by checking its assumptions about subjects' conversational assumptions and norms with respect to particular cases of subject-experimenter communication. Such research would build on the lessons of an older psychological literature on source effects that concerned itself with how subjects' goals influence research results.³³

E. Gricean Charity and Naturalized Interpretation

Like conversational pragmatics, *Gricean charity* adopts conversational norms as norms of rationality, and uses these norms to guide the interpretation

32. See, for example, Zvi Ginossar and Yaacov Trope, "Problem Solving in Judgment under Uncertainty," *Journal of Personality and Social Psychology* 52 (1987): experiment 5. Also, Eleanor Singer, Hans-Jürgen Hippler, and Norbert Schwarz discovered that increasingly emphatic confidentiality assurances decrease the rate at which subjects are willing to respond to survey questionnaires. Their explanation is that such confidentiality assurances—when construed as relevant to the ensuing survey questions—suggest that the survey will ask questions that are personal, embarrassing, and/or incriminating. Subjects' decreased willingness to participate, and decreased willingness to provide identifying information in order to participate in future surveys, seems to indicate a decreased level of trust in the surveyors' confidentiality assurances. Eleanor Singer, Hans-Jürgen Hippler, and Norbert Schwarz, "Confidentiality Assurances in Surveys: Reassurance or Threat?" *International Journal of Public Opinion Research* 4, no. 3 (1992): 256-68.

33. This literature attributes to subjects a broader range of possible goals, including the attainment of private rewards, the discovery of the experiment's true rationale, the presentation of the self in the best light, and the desire to contribute to the experiment's success by assisting the experimenter in proving her point. For a review, see Arie W. Kruglanski, "The Human Subject in the Psychology Experiment: Fact and Artifact," *Advances in Experimental Social Psychology* 8 (1975): 101-47.

of subjects' beliefs. Gricean charity invokes these norms of conversation to justify alternate interpretations of the stated question or task—an interpretation for which subjects' expressed beliefs can sometimes be construed as rational. Implicit in this approach to intentional explanation is the empirical assumption that subjects are very unlikely to violate naturalized conversational norms. Gricean charity's difference with conversational pragmatics is merely one of emphasis: Gricean charity explicitly embraces naturalized norms of conversation, and recommends the continued collection of evidence about the conversational assumptions and norms guiding subject-experimenter communication.

This naturalized approach to interpretation builds on important themes in naturalized accounts of interpretation by contemporary philosophers such as David Henderson and Mark Risjord. Like these accounts, Gricean charity is naturalized in the sense that it allows and encourages the use of empirical knowledge taken from the human sciences to guide interpretive theory. Henderson argues that empirical knowledge, especially psychological theory, should be the primary guide in interpretation. Risjord's interest in interpreting group-level events in terms of cultural norms expands the list of human sciences relevant to interpretation to include anthropological, sociological, and historical theories. Gricean charity's interest in naturalized conversational norms connects psychological research with findings and theories in linguistic anthropology and sociolinguistics.

Henderson's and Risjord's naturalized accounts of interpretation also embrace the Davidsonian lesson that any psychological theory on human judgment "must *include* a theory of interpretation" about subjects' beliefs about the experimental task.³⁴ Henderson paints a picture of "interpretation-cum-explanations," where we "construct interpretive schemes so as to be yoked with our psychological and sociological theories to the end of modeling and accounting for the behavior and behavioral dispositions of our subjects."³⁵ Under Risjord's account, appeals to meanings (common to a group of speakers) are crucial to the interpretation of group-level phenomena.³⁶ Gricean charity's contribution to this common ground is in providing a positive account of the kind of "integral role" that interpretation should play in the co-development of interpretive and psychological theory. In particular, Gricean charity draws important methodological lessons from current research

34. Davidson, "Belief and the Basis of Meaning (1974)," 147; emphasis added.

35. David K. Henderson, *Interpretation and Explanation in the Human Sciences* (Albany: State University of New York Press, 1993), 73-74.

36. Mark Risjord, *Woodcutters and Witchcraft* (Albany: State University of New York Press, 2000), 137-38.

on conversational pragmatics and recommends a naturalized account of conversational norms that respects the cultural relativity of conversational norms, and their dynamic relationship with questionnaire content and communicator identity.

2. Objections

A. Universal Rationality

An important test of any account of charitable interpretation is whether it can allow for and even prefer interpretations that describe others as being systematically irrational. Some might object that Gricean charity fails this test, since it can be enlisted to rationalize just about any case of apparent irrationality. This possibility stems from a particular step in the inductive argument for any conversational implicature. In drawing an implicature, a hearer must arrive at the belief that, in order for some speaker *S* to say that *p*, and still be observing the maxims or the cooperative principle, *S* must think that *q*. This premise about *q* is itself arrived at by means of an inductive argument about what claim *q* is implicated, given the literal meaning of *p*, the conversational context, and beliefs mutually held by speaker and addressee.³⁷ Without any principled way of deciding what gets to count as a reasonable or best candidate implicature *q*, acceptable conversational implicatures are restricted only by the limitations of the human imagination. Since we can always find some reinterpretation for which subject responses can be said to be rational, Gricean charity always provides a way to rationalize subject responses.

This worry overlooks an important lesson of the Gricean turn, namely, the role of evidence. Gricean charity puts the onus on the researcher to identify subjects' interpretations of experimental tasks and to identify conditions of successful communication. This evidence can sometimes undermine experimenters' claims that subjects do in fact draw particular conversational inferences. Additionally, such evidence can speak in favor of describing subjects as engaging in irrational lines of reasoning.

For example, *open-ended protocols* ask subjects to describe their interpretations of the experimental task and/or explain their answers, in their own words. This method is helpful because it allows experimenters to capture the cognitive processes associated with specific semantic inferences,

37. Levinson, "Conversational Implicature," 113-14.

problem reasoning, and judgment.³⁸ Using this method, Don Dulany and Denis Hilton asked subjects, “What did ‘Linda is a bank teller’ *mean* or *imply* to you? Be as clear as you can.” They found that many subjects indicated that Linda’s being a bank teller was irrelevant to answering the question. Their reasoning seemed to go as follows: because Linda’s being a bank teller was a property shared between the two outcomes, it was “a constant that cancelled,” and was not supposed to affect the outcomes, thus reducing the problem to judging whether Linda was a feminist or not.³⁹ This line of reasoning is very problematic. Events common to different outcomes do not cancel out in the way subjects imagine. This additional self-reported information about subjects’ beliefs and inferences suggests describing their judgments as profoundly mistaken.⁴⁰

Before my response to this objection, it seemed that Gricean charity’s *modus operandi* was to rationalize what seemed to be irrational responses in famous studies on human judgment. However, some studies do seem to demonstrate some kind of systematic irrationality in human reasoning. This is a great strength of Gricean charity—that it recommends the collection of evidence that may speak in favor of the rationality or irrationality of human reasoning under various conditions. It is Gricean charity’s deference to evidence about communication in experimental contexts that prevents the hyperrationalization of subject responses.

The symmetrical treatment of rational and irrational beliefs can also be found in Henderson’s and Risjord’s accounts. Under Henderson’s account, *both* rational and irrational belief are held to the same standard of explicability, which seeks to explain beliefs and actions in terms of the subject’s causally relevant intentional states and psychological dispositions. In cases where we happen to adopt a “rationalizing explanation,” the explanatory force of this explanation derives not from the rationality of what the subject

38. How experimenters ought to use information from open-ended protocols is not clear-cut, since subjects do not always have direct access or insight into their conversational inferences. Psychologists are generally skeptical about whether subjects have insight about their inferences or about the factors that do and do not influence their judgments/choices. For the classic paper on this, see Richard E. Nisbett and Timothy DeCamp Wilson, “Telling More Than We Can Know: Verbal Reports on Mental Models,” *Psychological Review* 84, no. 3 (1977): 231-59.

39. Dulany and Hilton, “Conversational Implicature, Conscious Representation, and the Conjunction Fallacy,” 102.

40. This self-reported information also suggests that subject responses cannot be rationalized, even if they interpret “probable” to mean “plausible”: even if subjects are concerned with the relative plausibility of outcomes, the outcomes *still* do not cancel in the way they believe they do. Thanks to James Joyce for this point.

believes, but from citing causal antecedents and dispositions in terms that feature in psychological generalizations. Gricean charity provides an example of what Henderson would identify as a kind of “modest” rationalizing explanation: Gricean charity hypothesizes that subjects are likely to arrive at a particular interpretation of an experimental task, in virtue of their disposition to conform to conversational principles (where claims about their dispositions and about the conversational principles are empirical claims).⁴¹ The force of Gricean charity’s explanations draws strength from empirical evidence about subjects’ interpretations and their conversational assumptions, goals, and norms.

For Risjord, theories that attribute rational rather than irrational beliefs are held to the same standard of explanatory coherence—a standard that is not committed to interpreting all beliefs and actions as rational.⁴² In contrast to Henderson, however, Risjord recognizes that norms of rationality have a legitimate place in intentional explanation. Interpreters bring with them “interests constitutive to the interpretive enterprise” such as interests in the agents’ point of view and in the structure of the society in which they live.⁴³ Risjord observes that our interest in these perspectives requires explanations invoking norms.⁴⁴ This is because intentional explanations and group-level explanations invoke reasons, where reasons may count as reasons only insofar as they conform to norms recognized by the agent or the society. It is in this indirect way that norms figure in the content of explanations.⁴⁵ Gricean charity draws strength from Risjord’s analysis. As an account of interpretation, Gricean charity has an interest in understanding communication and psychological experimentation from the subject’s point of view. As such, Gricean charity is interested in the reasons subjects have for their interpretations of the task, where these reasons count as reasons insofar as they relate to conversational norms governing subject-experimenter communication. These conversational norms figure in the content of Gricean charity’s intentional explanations.

B. Biased Applications of Gricean Charity

Keith Stanovich and Richard West observe that some charitable strategies seeking to rationalize subject responses function by reacting to findings of the heuristics and biases research approach: they aim to restore the rationality of

41. Henderson, *Interpretation and Explanation in the Human Sciences*, 135-36.

42. Risjord, *Woodcutters and Witchcraft*, 182.

43. *Ibid.*, 177.

44. *Ibid.*, 187-88.

45. *Ibid.*, 155.

subject responses in the face of research purporting to demonstrate otherwise. What is suspicious about this pattern of theorizing is that it criticizes studies purporting to demonstrate irrationality, but rarely—if ever—critiques those where modal subject response *coincides* with the normative response.⁴⁶ The worry is that charitable researchers in psychology are biased insofar as they hold higher standards of experimental design and evidence for psychological theories claiming to demonstrate human irrationality.

However, Gricean charity does not require a higher standard of evidence for theories claiming that human reasoning is irrational in some way. Rather, what speaks for the strength of Gricean charity is that it recommends an evidential standard that applies generally to studies on human judgment, irrespective of their conclusions about the rationality or irrationality of subject responses. The interviewing methods used for attaining key interpretive evidence are also shared across the rationality divide. I will discuss such interviewing techniques in greater detail in subsequent sections of this paper.

C. Testing for the Effects of Irrelevant Information

Some object that conversational norms overly constrain what it is that cognitive psychologists can test since these norms may circumvent asking questions in ways that prove psychologically interesting. In particular, Kahneman and Tversky expressed the concern that Grice's maxim of relevance poses an "exceptionally difficult" problem for experimenters interested in studying the effects of irrelevant information on cognition.⁴⁷ Citing Richard Nisbett et al.'s work, they observe that subjects can mistakenly construe nearly *any* piece of information as relevant.⁴⁸ From a methodological point of view, the worry is that the maxim of relevance's constraint on questionnaire and survey design precludes the very possibility of testing the influence of irrelevant information on human cognition.

However, there are ways in which to test the effect of irrelevant information on cognition *without having to violate conversational norms*. Psychologists

46. Stanovich and West make this observation in the context of the "reject-the-norm" strategy, which rejects the experimenter's normative theory for a different one to which modal subject response conforms. Keith E. Stanovich and Richard F. West, "Individual Differences in Reasoning: Implications for the Rationality Debate?" *Behavioral and Brain Sciences* 23 (2000): 650.

47. Kahneman and Tversky, "On the Study of Statistical Intuitions," 501-2.

48. Richard E. Nisbett, Henry Zukier, and Ronald E. Lemley, "The Dilution Effect: Nondiagnostic Information Weakens the Implications of Diagnostic Information," *Cognitive Psychology* 13 (1981): 248-77.

working on conversational pragmatics have forged ingenious experimental methods to do this. One way is to undermine subjects' assumption that the source of information in the experimental context is intentional and cooperative. Recall that the conversational maxims apply in the special case where information exchange occurs between *intentional, cooperative communicators* in ordinary language. If experimenters can undermine this key assumption, then all conversational implicatures should be cancelled, which would allow experimenters to study the effects of irrelevant information on human cognition.

Norbert Schwarz and his colleagues discovered an ingenious way of using a computer interface to do just this. They focused on Kahneman and Tversky's famous lawyer-engineer question:

A panel of psychologists have interviewed and administered personality tests to 30 engineers and 70 lawyers, all successful in their respective fields. On the basis of this information, thumbnail descriptions of the 30 engineers and 70 lawyers have been written. You will find on your forms five descriptions, chosen at random from the 100 available descriptions. For each description, please indicate your probability that the person described is an engineer, on a scale from 0 to 100.

The same task has been performed by a panel of experts, who were highly accurate in assigning probabilities to the various descriptions. You will be paid a bonus to the extent that your estimates come close to those of the expert panel.⁴⁹

In Kahneman and Tversky's original study, the *low-engineer group* was told that there were 30 engineers and 70 lawyers. The *high-engineer group* was told that there were 70 engineers and 30 lawyers. Both groups were provided the same five personality descriptions, most of which were stereotypical of an engineer or lawyer.⁵⁰ Kahneman and Tversky found that subjects' predictions about how probable it was that a given person was an engineer or lawyer were

49. Daniel Kahneman and Amos Tversky, "On the Psychology of Prediction (1973)," in *Judgment under Uncertainty: Heuristics and Biases*, ed. Daniel Kahneman, Paul Slovic, and Amos Tversky (New York: Cambridge University Press, 1982), 53.

50. Kahneman and Tversky (*ibid.*) offered the following as an example of one of the personality descriptions:

Jack is a 45-year-old man. He is married and has four children. He is generally conservative, careful, and ambitious. He shows no interest in political and social issues and spends most of his free time on his many hobbies which include home carpentry, sailing, and mathematical puzzles.

The probability that Jack is one of the 30 engineers in the sample of 100 is ——%.

independent of the base rates of engineers/lawyers described in the questionnaire: subjects ignored the base rate information in violation of Bayes's rule.

Norbert Schwarz et al. predicted that subjects' violation of Bayes' rule resulted from conversational implicatures reasonably inferred from the original wording of the questionnaire. They point out that subjects who identify the experimenter as cooperative are in the position of trying to render the communicated information about Jack's personality relevant to their interpretation of the experimental task; and, by the maxim of quantity, subjects are left to infer that *all* the detailed information provided about Jack's personality is meant to play into the proper solution of the task.⁵¹

To undermine the assumption that the individuating information was relevant and informative, Schwarz et al. ingeniously created a *computer communicator* condition, where subjects were told that a computer—an uncooperative and unintentional communicator—had created the personality description by randomly drawing sentences from psychologists' or researchers' files pertaining to the target person.⁵² By undermining the assumption of cooperative

51. Special clues in the question underscore the relevance and importance of the personality description in solving the task. The first paragraph of the instructions "informs subjects that the individuating information was compiled by psychologists on the basis of respected procedures of their profession, namely interviews and tests." Schwarz et al. observe that, since psychologists are stereotypically perceived as experts on issues of personality rather than probability and base rates, identifying the authors of the personality descriptions as psychologists emphasizes the relevance and informativeness of the individuating information rather than the base rate information in solving the experimental task. Kahneman and Tversky reinforce the importance and relevance of the personality descriptions by going on to state that "[t]he same task has been performed by a panel of experts, who were highly accurate in assigning probabilities to the various descriptions." This sentence underscores the relevance of the individuating information by pointing out that the stereotypical descriptions are sufficiently diagnostic for experts to succeed in solving the experimental task. Although the professional identity of the experts is left unspecified, subjects might reasonably infer the experts are psychologists, based on the following facts: the experts are highly accurate in personality-based predictions, and the experts are so-called by experimental psychologists in the context where they seem to use the personality tests to predict outcomes. The further claim that "[y]ou will be paid a bonus to the extent that your estimates come close to those of the expert panel" suggests that the subjects are encouraged to make judgments in a *similar manner* as the expert panel. If subjects have already identified the experts as psychologists, this statement would encourage subjects to study the personality traits described, and use them to diagnose professional identity. Norbert Schwarz, Fritz Strack, Denis Hilton, and Gabi Naderer, "Base Rates, Representativeness, and the Logic of Conversation: The Contextual Relevance of 'Irrelevant' Information," *Social Cognition* 9, no. 1 (1991): 67-84.

52. To undermine the assumption that the individuating information was relevant and informative, Schwarz and his colleagues told subjects that a computer had created the provided personality description by randomly drawing sentences from psychologists' or researchers' files pertaining to the target person. *Ibid.*, 74.

communication, subjects were freed from having to construe the personality information as relevant to the experimental task. They found that in the computer communicator condition, subjects weighed the individuating information less, and considered the base rate more: the mean probability estimate for subjects judging the probability that the target was an engineer was only 40%, compared to the control group's mean probability estimate of 76%.

D. Conversational Clarity and Conceptually Difficult Tasks

Kahneman and Tversky have objected that efforts to make the experimental task as semantically unambiguous as possible reveal key clues about solving the task. Such clues, the objectors maintain, compromise researchers' abilities to test whether subjects can solve the task *without* undue help. The best way to understand this objection perhaps is by way of example. In the Linda case, one way to clear up the ambiguity about what *probable* means is to paraphrase with the more precise mathematical word *frequency* in the following way:⁵³

In an opinion poll, the 200 women selected to participate have the following features in common: They are, on average, 30 years old, single, and very bright. They majored in philosophy. As students, they were deeply concerned with issues of discrimination and social justice and also participated in anti-nuclear demonstrations.

Please estimate the frequency of the following events.

How many of the 200 women are bank tellers? ___ of 200

How many of the 200 women are active feminists? ___ of 200

How many of the 200 women are bank tellers and active feminists? ___ of 200⁵⁴

As the researchers Ralph Hertwig and Gerd Gigerenzer expected, none of the subjects provided answers in violation of the conjunction rule under this formulation of the Linda problem.

However, Kahneman and Tversky suggest this formulation of the question makes judgments of probability a piece of cake. They ask subjects for a numerical estimate of the ratio of women who are bank tellers and/or active feminists in the total population of Linda-like people. That is, they

53. This idea is due to Hertwig and Gigerenzer, "The 'Conjunction Fallacy' Revisited."

54. *Ibid.*, 291.

ask subjects to estimate the number of people belonging to the set of bank tellers, the set of active feminists, and the intersection of both these sets, within a fixed population. Being able to judge the probability of a conjunction of events requires conceptualizing how classes of events are related in this set theoretical way. At the very least, understanding the conjunction rule requires seeing that the number of members in the *intersection* of two sets must be *less than* or equal to the number of members in each of those individual sets. Hertwig and Gigerenzer's way of posing the question not only clarifies the meaning of the question, it also takes subjects through the hardest step of understanding how to think about and solve the task.⁵⁵ So the question becomes, are there ways of clarifying the meaning of the Linda question *without* giving away what Kahneman and Tversky take to be key clues?⁵⁶

Hertwig and Gigerenzer discovered a way of clarifying the intended meaning of the probability question without giving away key clues to solving the problem. They observed that, in the original question, the meaning of *probability* was obscured by the maxim of relevance: in particular, the maxim directs subjects to make irrelevant personality information pertinent to the experimental task. They hypothesized that one way to indicate that the personality information was not necessarily relevant to the probability task is to ask a different question for which Linda's personality description *is* relevant *before* asking the probability question. This leaves subjects free to interpret the meaning of the subsequent "probability" question without reference to the personality description. To test this, Hertwig and Gigerenzer

55. This finding replicates Kahneman and Tversky's discovery that subjects are much less likely to violate the conjunction rule when the conjunctions were represented by the intersection of concrete, finite classes rather than by an abstract combination of properties. They found that only 25% of subjects violated the conjunction fallacy when they were asked to estimate the frequencies rather than single-event probabilities. But, by representing the question in this frequency format, Tversky and Kahneman took themselves as encouraging "subjects to set up a representation of the problems in which class inclusion is readily perceived and appreciated." Tversky and Kahneman take their findings to demonstrate that "[t]he formal equivalence of properties to classes is apparently not programmed into the lay mind"—that subjects do not "evaluate compound probabilities by aggregating elementary ones" unless provided a representation "in which different relations and rules are transparent." Tversky and Kahneman, "Extensional versus Intuitive Reasoning," 294-309.

56. Notice that Kahneman and Tversky's question and objection presuppose no obligation to satisfy Gricean norms. From a Gricean perspective, the lesson to be drawn is not that "people are irrational," but that "if you do not want to mislead people, then speak more clearly." An experiment without clearly specified questions does not demonstrate that subjects are innately irrational, but that certain representations are less effective at communicating a task than others.

provided subjects with Linda's personality description, and asked subjects to judge *how good an example* Linda's personality was of "an active feminist," "a bank teller," and "a bank teller and an active feminist." Subjects were then asked the probability question, "Which of the following statements is most probable?" Possible answers were "Linda is an active feminist," "Linda is a bank teller," and "Linda is an active feminist and bank teller." Under this version of the Linda problem, they found that subjects were less likely to violate the conjunction rule: only 59% of subjects violated the conjunction rule, compared to 88%. Notice that the effect of successful communication here is not to manipulate subjects into providing the normatively correct answer, since the majority of subjects continue to violate the conjunction rule. Rather, the effect is to get a more accurate picture of subjects' probability judgments.

3. Conclusions

Gricean charity builds on recent accounts of naturalized interpretation by issuing positive methodological recommendations for proper interpretation and explanation in psychological experimentation. In particular, the Gricean turn reminds us that researchers are responsible for successful communication in the experimental context. In order to promote successful communication, Gricean charity recommends creating questionnaires in conformance to naturalized conversational norms, and recommends seeking evidence about (1) the conditions of successful communication and (2) the conversational norms governing subject-experimenter communication. The Gricean turn also shifts psychological explanations toward situational explanations that focus on the experimental conditions responsible for subject responses. And, this situational perspective engages in reflexive analysis about the influence of the experimenter (and experimenter's relationship with the subject) on observed behavior.

Gricean charity's evidential recommendations are unbiased in the sense that they apply symmetrically across the rationality divide: they apply to studies on human judgment, irrespective of the studies' conclusions about the rationality or irrationality of subjects' responses. Evidence gained by these methods does not necessarily speak in favor of the rationality or irrationality of subject responses. Thus, Gricean charity passes an important test for any account of charitable interpretation: namely, it allows for the possibility of and even prefers interpretations that construe others as being systematically irrational. As a result, Gricean charity does not illegitimately favor

psychological theories that construe human reasoning as being generally rational.

Gricean charity is biased in its special focus on conversational pragmatics. However, this is not a problematic bias, but a focus of research. Such a focus is found in normal scientific research programs that use background theory and hard-core assumptions as tools to generate new questions, predictions, evidence, and hypotheses.⁵⁷ Gricean charity suggests new questions about the nature of conversational inference: under what conditions can we undermine subjects' assumptions of the experimenter's cooperativeness? How can we undermine the assumption of intentionality in questionnaires, surveys, or experimental communications in general? How can we emphasize the right information so as to elicit valid ways of reasoning and correct judgment? How is task interpretation tied into reasoning about how to solve the task? And how do conversational norms vary under different experimental conditions?

These questions motivate the creation of new methods for collecting evidence about subjects' conversational inferences. For example, Schwarz et al.'s computer communication condition allowed researchers to undermine subjects' assumption of cooperativeness and intentionality on the part of experimenters. Hertwig and Gigerenzer's subtle double-question technique provided a way of manipulating the assumption of relevance.⁵⁸

Finally, the questions, hypotheses, and interests motivated by Gricean charity have led to the discovery of new kinds of psychologically interesting phenomena. For example, Schwarz et al.'s computer communicator condition revealed new conditions that sensitize subject probability judgments to base rate information. His computer communicator condition also revealed other fascinating evidence. When the wording of the questionnaire

57. Philip E. Tetlock, "The Impact of Accountability on Judgment and Choice: Toward a Social Contingency Model," *Advances in Experimental Social Psychology* 25 (1992): 331-76; and Gerd Gigerenzer, "From Tools to Theories: A Heuristic Discovery in Cognitive Psychology," *Psychological Review* 98, no. 2 (1991): 254-67.

58. In addition to these methods of checking subject task construal, experimenters may employ a *multiple-choice check* method, which asks subjects to check which of a provided set of interpretations best matches their interpretation of the task. One weakness of this approach is that subjects may draw different implicatures from the more precisely stated multiple-choice options. For examples relevant to the conjunction fallacy, see Hilton, "The Social Context of Reasoning," 260. Experimenters may also check subject interpretations by asking subjects to *paraphrase* the experimenter's original question. One problem with this kind of method of checking subject interpretations is that the paraphrases provided may themselves be vague, polysemous, and/or indeterminate. For examples relevant to the conjunction fallacy, see Hertwig and Gigerenzer, "The 'Conjunction Fallacy' Revisited."

was framed as a statistics problem, the computer communicator condition *impaired* subjects' probability judgments: subjects again ignored or underweighted the base rate information.⁵⁹ Schwarz et al. suggest that subjects relied more on the individuating information "presumably because in a statistical framework random sampling suggests that the resulting selection is representative of the population of descriptive information from which it is drawn."⁶⁰ By communicating more successfully with subjects, researchers in conversational pragmatics have opened the door to getting a clearer picture of the surprising and muddled ways in which we weigh evidence, draw inferences, and make choices.

References

- Adler, Jonathan E. 1984. Abstraction is uncooperative. *Journal for the Theory of Social Behavior* 14 (2): 165-81.
- Clark, Herbert H., and Michael F. Schober. 1992. Asking questions and influencing answers. In *Questions about questions: Inquiries into the cognitive bases of surveys*, edited by Judith M. Tanur, 15-48. New York: Russell Sage Foundation.
- Davidson, Donald. 2001. Belief and the basis of meaning (1974). In *Inquiries into truth and interpretation*, 141-54. New York: Oxford University Press.
- Dulany, Don E., and Denis J. Hilton. 1991. Conversational implicature, conscious representation, and the conjunction fallacy. *Social Cognition* 9 (1): 85-110.
- Edwards, Ward, Harold Lindman, and Lawrence D. Phillips. 1965. Emerging technologies for making decisions. In *New directions in psychology* 2, 259-326. New York: Holt, Rinehart & Winston.
- Gigerenzer, Gerd. 1991. From tools to theories: A heuristic discovery in cognitive psychology. *Psychological Review* 98 (2): 254-67.
- . 1996. On narrow norms and vague heuristics: A Reply to Kahneman and Tversky (1996). *Psychological Review* 103 (3): 592-96.
- Ginossar, Zvi, and Yaacov Trope. 1987. Problem solving in judgment under uncertainty. *Journal of Personality and Social Psychology* 52:464-74.
- Grice, Paul. 1989. Logic and conversation. In *Studies in the way of words*. Cambridge, MA: Harvard University Press.
- Henderson, David K. 1993. *Interpretation and explanation in the human sciences*. Albany: State University of New York Press.
- Hertwig, Ralph, and Gerd Gigerenzer. 1999. The "conjunction fallacy" revisited: How intelligent inferences look like reasoning errors. *Journal of Behavioral Decision Making* 12:275-305.
- Hilton, Denis J. 1995. The social context of reasoning: Conversational inference and rational judgment. *Psychological Bulletin* 118 (2): 248-71.
- Kahneman, Daniel, and Amos Tversky. 1982. On the psychology of prediction (1973). In *Judgment under uncertainty: Heuristics and biases*, edited by Daniel Kahneman, Paul Slovic, and Amos Tversky, 48-68. New York: Cambridge University Press.

59. Schwarz et al., "Base Rates, Representativeness, and the Logic of Conversation," 72-73.

60. *Ibid.*, 76.

- . 1982. On the study of statistical intuitions. In *Judgment under uncertainty: Heuristics and biases*, edited by Daniel Kahneman, Paul Slovic, and Amos Tversky, 493-508. New York: Cambridge University Press.
- Keenan, Elinor Ochs. 1976. The universality of conversational postulates. *Language in Society* 5:67-80.
- Kruglanski, Arie W. 1975. The human subject in the psychology experiment: Fact and artifact. *Advances in Experimental Social Psychology* 8:101-47.
- Kunda, Ziva, and Paul Thagard. 1996. Forming impressions from stereotypes, traits, and behaviors: A parallel-constraint-satisfaction theory. *Psychological Review* 103 (2): 284-308.
- Levinson, Stephen. 1983. Conversational implicature. In *Pragmatics*, 97-166. Cambridge: Cambridge University Press.
- Nisbett, Richard E., and Timothy DeCamp Wilson. 1977. Telling more than we can know: Verbal reports on mental models. *Psychological Review* 84 (3): 231-59.
- Nisbett, Richard E., Henry Zukier, and Ronald E. Lemley. 1981. The dilution effect: Nondiagnostic information weakens the implications of diagnostic information. *Cognitive Psychology* 13:248-77.
- Risjord, Mark. 2000. *Woodcutters and witchcraft*. Albany: State University of New York Press.
- Rosaldo, Michelle Z. 1980. *Knowledge and passion: Ilongot notions of self and social life*. Cambridge: Cambridge University Press.
- Schwarz, Norbert. 1994. Judgment in a social context: Biases, shortcomings, and the logic of conversation. *Advances in Experimental Social Psychology* 26:123-62.
- . 1996. *Cognition and communication: Judgmental biases, research methods, and the logic of conversation*. Mahwah, NJ: Lawrence Erlbaum.
- Schwarz, Norbert, Fritz Strack, Denis Hilton, and Gabi Naderer. 1991. Base rates, representativeness, and the logic of conversation: The contextual relevance of "irrelevant" information. *Social Cognition* 9 (1): 67-84.
- Singer, Eleanor, Hans-Jürgen Hippler, and Norbert Schwarz. 1992. Confidentiality assurances in surveys: Reassurance or threat? *International Journal of Public Opinion Research* 4 (3): 256-68.
- Sperber, Dan, and Deirdre Wilson. 1986. *Relevance: Communication and cognition*. Oxford: Basil Blackwell.
- Stanovich, Keith E., and Richard F. West. 2000. Individual differences in reasoning: Implications for the rationality debate? *Behavioral and Brain Sciences* 23:645-726.
- Tetlock, Philip E. 1992. The impact of accountability on judgment and choice: Toward a social contingency model. *Advances in Experimental Social Psychology* 25:331-76.
- Tversky, Amos, and Daniel Kahneman. 1982. Judgments of and by representativeness. In *Judgment under uncertainty: Heuristics and biases*, edited by Daniel Kahneman, Paul Slovic, and Amos Tversky, 84-98. New York: Cambridge University Press.
- . 1983. Extensional versus intuitive reasoning: The conjunction fallacy in probability judgment. *Psychological Review* 90 (4): 293-315.

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