WORKSHOP ON BIAS, DISINFORMATION, MISINFORMATION AND PROPAGANDA IN ONLINE NEWS AND SOCIAL MEDIA @SOCINFO 2019

Doha, Qatar

Measuring the Adequacy of High-Stakes Communications

Timothy Habick, Ph.D.
Reasoning, Inc.
November 18, 2019

thabick@reasoninginc.com

High-Stakes Communication

- Some communications have such high stakes that there can be no tolerance for certain types of communicative errors.
    - Certification examinations, professional examinations, etc.
    - Official survey forms and questionnaires
    - Most legal documents
    - Corporate publications and financial statements
- Why? The consequences of communicative errors can be severe to individuals and society.

High-Stakes Communication

- Any publication or discourse that must meet high standards related to

    - Communicative pertinence
    - Communicative efficiency
    - Truthfulness

Impersonal, Remote, and High-Stakes too

- Many high-stakes communicative events are naturally structured to make it impossible for respondents to request clarifications and revisions.
- This feature increases the risk of communicative failure and must be mitigated.

Ideally Appropriate and Efficient Structures

- When the stakes are high, **only ideally appropriate and efficient structures are appropriate for inclusion** in them.
  - People have a right not to be disadvantaged by defective high-stakes documents.
  - Including materially ineffective and negligently inefficient structures in high-stakes documents qualifies as communicative malpractice, for which there could, and often should, be legal repercussions.

Malpractice vs. Malfeasance

- Malfeasance is illegal or wrongful behavior. This includes acts that a person has no right to perform or has a contractual obligation not to perform. Malfeasance typically involves intentional behavior.

- Malpractice is a failure to perform certain professional duties in a way that protects the public good.

  - Many acts correctly characterized as malpractice might not be illegal, but they represent a professional's dereliction of duty in the treatment of human subjects.

Goal

- So on what bases can we identify the ideally appropriate and efficient structures of highly successful communications?
- It's easy enough to identify flaws and impediments to successful communication.
- But what are the positive defining features to which high-stakes communications have a duty to aspire?
- The goal is to establish standards for high-stakes communications with which interested linguists generally should and do agree and to which all can appeal.

Successful Communications

- A theory of communicative success
    - Standards for successful communications must be based on
        - A set of principles of communicative success
            - Paul Grice's maxims
            - Communicative Principles of Interpretation

- A theory of error in language

The Maxims of Paul Grice

- Be truthful.
- Be clear.
- Be relevant.
- Be appropriately informative.
  - Say no more than is necessary.
  - Say no less than is necessary.

Cooperative Communication

- Paul Grice's theory of cooperative communication distinguishes *successful communications* from unsuccessful ones.
- *Success* can be defined as a sender's presentation of information that is
  - **Truthful** (at least to the sender's knowledge and belief),
  - **Perspicuous** (clear and not ambiguous)
  - **Relevant** (not out of the blue, but connected to reasonable expectations about the next most appropriate contribution to a conversation)
  - **Appropriately informative** (providing neither too much unneeded detail nor too little information considering the context)
- In order for a communication to be successful, the sender must encode messages cooperatively and the receiver must decode the message using the same cooperative rules. Each party has the right to assume that the other party is respecting the maxims.

A Duty of Compliance

- Authors of high-stakes documents must achieve high levels of compliance with Grice's maxims.
- Such documents must be treated as communications, if somewhat peculiar ones.
- Examinations are intended to serve one purpose – fair assessment of relevant knowledge, skills, and abilities (KSAs).
- Decoding uncooperative communications is typically not one of the KSAs.

Errors in Language

- We cannot define communicative success unless we have a theoretical structure to define, identify, and categorize true errors.
- Impediments to communicative success include many common types of true errors.
- True errors include various types of performance errors.
    - A speaker says the opposite of what the speaker actually intended.
    - A speaker mispronounces a word, and the context is insufficient for others to identify the intended word.
    - A writer includes a typo that makes the sentence unintelligible or not readily intelligible.
    - A writer makes an assertion that (without appropriate notice) contradicts or casts doubt on the same writer's other assertions.

True Errors

- Speakers make real linguistic errors all the time. These are often **performance**, not **competence**, errors.
- Performance errors
    - They articulate a [p] when they intended to articulate a [b].
    - They produce a spontaneous spoonerism. (Go shake a tower!)
- Competence errors
    - They have motor or cognitive dysfunctions that produce various speech and language pathologies.
    - They fail to grasp the meanings of words and phrases that almost everyone else knows. This is not a dialectal issue but an idiolectal one. (candle opera, tighten your pearl strings)

Prescriptive Grammatical "Errors" (Fake Errors)

- Prescriptive "errors" and nonstandard forms typically do not seriously impede communication.
- They are therefore not of primary importance in determining whether a material violation of cooperative communication has occurred.
- Linguists working on behalf of clients seeking protection from linguistic and logical flaws will typically follow all reasonable and realistic prescriptive rules.
  - This is not because prescriptive rules necessarily favor more efficient methods of communication. They often are neutral with respect to communicative efficiency.
  - The goal is to produce language that is appropriate in all respects to the purpose of the communication, **in a way that does not draw undue attention to the forms of language used**.

Authoritative (?) Guidance

- High-stakes fields: Standards, best practices, and regulations that guide the conduct of professional practitioners.
- Linguistics:
  - Standard and dialectal dictionaries
  - Prescriptive and descriptive grammars and style guides
  - Ad hoc investigations in relevant corpora
  - The totality of the linguistic research tradition
- But we still require some sort of authoritative guidance that can be used to identify clear violations of cooperative communication for high-stakes documents.

Communicative Best Practices

- Linguistic best practices have been suggested as crucial elements of **universal design**, but the notion of communicative accessibility was not previously codified and defined as a set of principles.
    - *ETS Standards for Quality and Fairness (*2014)
    - *Standards for Educational and Psychological Testing* (2014) the American Educational Research Association, the American Psychological Association, & the National Council on Measurement in Education (the AERA/APA/NCME Standards)
    - Improving Testing, Cheryl Wild and Rajit Ramaswamy, 2008
    - Handbook of Test Development, Lane, Raymond, and Haladyna (2016)
- *The AICPA Test Development Fairness Guidelines* (Habick and Cook, 2018) actually identifies and illustrates some of the linguistic, logical, and pragmatic principles that facilitate barrier-free communication.

Linguistic, Logical, Pragmatic

- Communication is linguistic, logical, and pragmatic, so it is governed by linguistic, logical, and pragmatic rules.
- The principles of successful communication, accordingly, emerge from the linguistic, the logical, and the pragmatic levels of analysis.
  - Linguistic – Without specific linguistic training, people can identify well-formed and malformed linguistic structures.
  - Logical – Without logical training, people can identify logical errors.
  - Pragmatic – Without specific training, people can identify violations of Grice's maxims.
- These rules of communication are thus inherent features of human language; violations of these rules render communications unsuccessful or incomplete.

Linguistic Certainty for High-Stakes Environments

- Linguists developing high-stakes documents are engaged to offer an informed professional opinion on the meanings that *can*, *must*, and *cannot* be communicated by sets of sentences in context.
- By examining the statistical results of test administrations to thousands of candidates, linguists can become acutely aware of the capabilities of direct assertion and implication of any particular set of communications.
- This focused awareness is a critical job function because a tiny mistake in linguistic or logical judgment could adversely affect the career path of certain examination candidates and could have serious economic consequences for the client organizations.
- Vagueness and uncertainty are features of natural human language, but they can be eliminated or avoided. Within a given dialect such as standard educated international English, *linguistic certainty* must—and can--be achieved.

The Primary Pragmatic Principle of Successful Communication

- **Objective truth exists independently of anyone's opinion about it.**
  - Individuals have access to incomplete versions of the truth—even regarding events in which they were active participants or witnesses.
    - Reasons: attitudes, inclinations, social positions, attention spans, memory limitations, and perceptual limitations.
- Perceptual limitations with respect to a set of facts do not undermine the truth of those facts.
  - Despite such limitations, people take the information they practically need from each of the situations they encounter each day.
    - It is only when they are questioned about particular aspects of past events that the effect of their perceptual filters becomes evident.

A Methodology
to Identify Communicative Success or Malpractice

- **Linguistic Analysis**
  - Does the document exhibit syntactically or semantically malformed structures? Do those structures materially interfere with communication? Complete full checklist.
- **Logical Analysis**
  - Does the document rely on false assumptions, play logical tricks (intentional or otherwise) or violate logical rules? Complete full checklist.
- **Pragmatic Analysis**
  - Does the document's communication make coherent sense in the actual context of the situation? Complete full checklist.
- Appeal to Relevant Standards of Communicative Adequacy for High-Stakes documents
- Identify the ways in which the document violates relevant communicative principles for high-stakes documents.

AICPA Fairness Guidelines

- Communicative Principles of Interpretation
- Principles of Efficient Information Processing
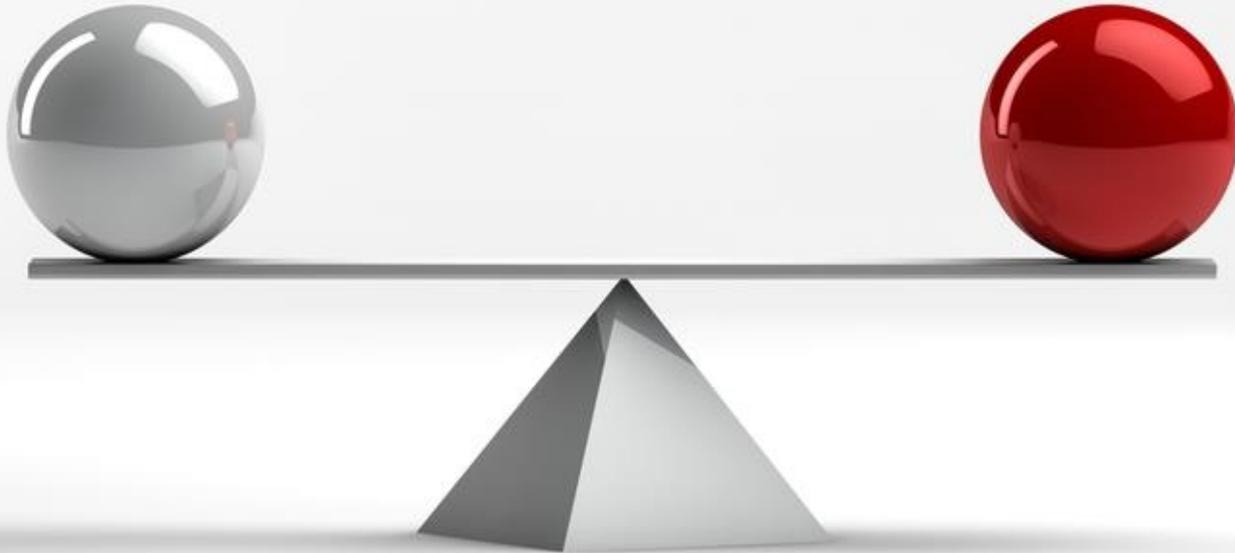
Communicative Principles of Interpretation

- An interpretation that satisfies the applicable linguistic, logical, and pragmatic rules is a valid interpretation, even if the original writer and many readers favor a different interpretation.

Communicative Principles of Interpretation

- Readers have the right to take you at your literal word, in context.

  - **A city assessed a $9,000 tax on a commercial property for the upcoming calendar year on January 1, 2009, at which time the tax was added to the property's other encumbrances.**
    - If an action occurred on January 1, 2009, then the **upcoming** (= next) calendar year, literally, would be 2010. The writer was trying to refer to the rest of the 2009 calendar year, but the original wording did not say that.
  - **On January 1, 2009, a city assessed a $9,000 tax on a commercial property for the current calendar year, at which time the tax was added to the property's other encumbrances.**

Communicative Principles of Interpretation

- High-stakes document creation is not a logic-free zone.

- All rules of logic apply, even if the writers do not completely understand them.

- Logical function words must be used in compliance with their functions.

  - The lower of cost **or** market (pre-2015 U.S. GAAP) -- ERROR
  - The lower of cost **and** net realizable value (IFRS) –CORRECT
    - After years of logical harassment, the U.S. Financial Accounting Standards Board (FASB) in 2015 shed its logically confounding usage and adopted the logically coherent usage of the International Accounting Standards Board (IASB).

Communicative Principles of Interpretation

- All linguistic structures must be iconic, not ironic.

    - No semantic drift
    - No jokes
    - No sarcasm
    - No fun

Communicative Principles of Interpretation

- Assertions must be fully informative.
    - Underinformative assertions:
        - Some cats are felines.
        - Some dogs are canines.
    - True statements, but with material omissions.
    - They're technically true, but for what occult purpose are you making those representations?

Communicative Principles of Interpretation

- Attributes should not be specified in the absence of relevant contrasts.
    - Select the red apple.
        - Implicature: There is more than one apple, and only one of them is red.

Communicative Principles of Interpretation

- Irrelevant implicatures should not be generated.
    - If they *can* be generated, they *will* be generated.
    - The reader will spend time trying to resolve them in terms of relevance.
    - A pattern of unresolved implicatures interferes with the transfer of pertinent information.
    - That can be a sign of professional negligence **or intentional deception** in the construction of high-stakes documents.

Communicative Principles of Interpretation

- In interactive high-stakes documents, the range of allowable responses or answer choices must include at least one felicitous response.
- Don't ask yes/no questions to which the good-faith and correct response could be neither *yes* nor *no*, but some other word or phrase.

Communicative Principles of Interpretation

- Obstacles to referent identification should be minimized.

- Facilitators of referent identification should be maximized.

  - Readers are faced with the task of referent resolution
 - Contrast-based processing advantage

Communicative Principles of Interpretation
(Font Enhancements)

- Bolding and italicization provide emphasis only; they do not otherwise change meaning and are not acceptable substitutes for explicit statements.
    - With the exceptions of indicating that the emphasized structure is to be understood as a cited token or a "so called" or "as someone else expresses the idea."
- A linguistic structure, bolded or not, performs a particular logical function.
- Using a font enhancement to emphasize a given linguistic structure does not alter the structure's inherent grammatical and logical functions.
    - Even if you put "or" in bold font, it still holds true that the noun phrases on either side of the "or" have been disjoined for logical purposes. This has implications for interpretation.

Communicative Principles of Interpretation

- A coherent picture must be presented in each document (or question) by means of strictly consistent linguistic structures.
- No synonyms as a general rule.
  - There are, however, valid reasons to use synonyms in certain cases.
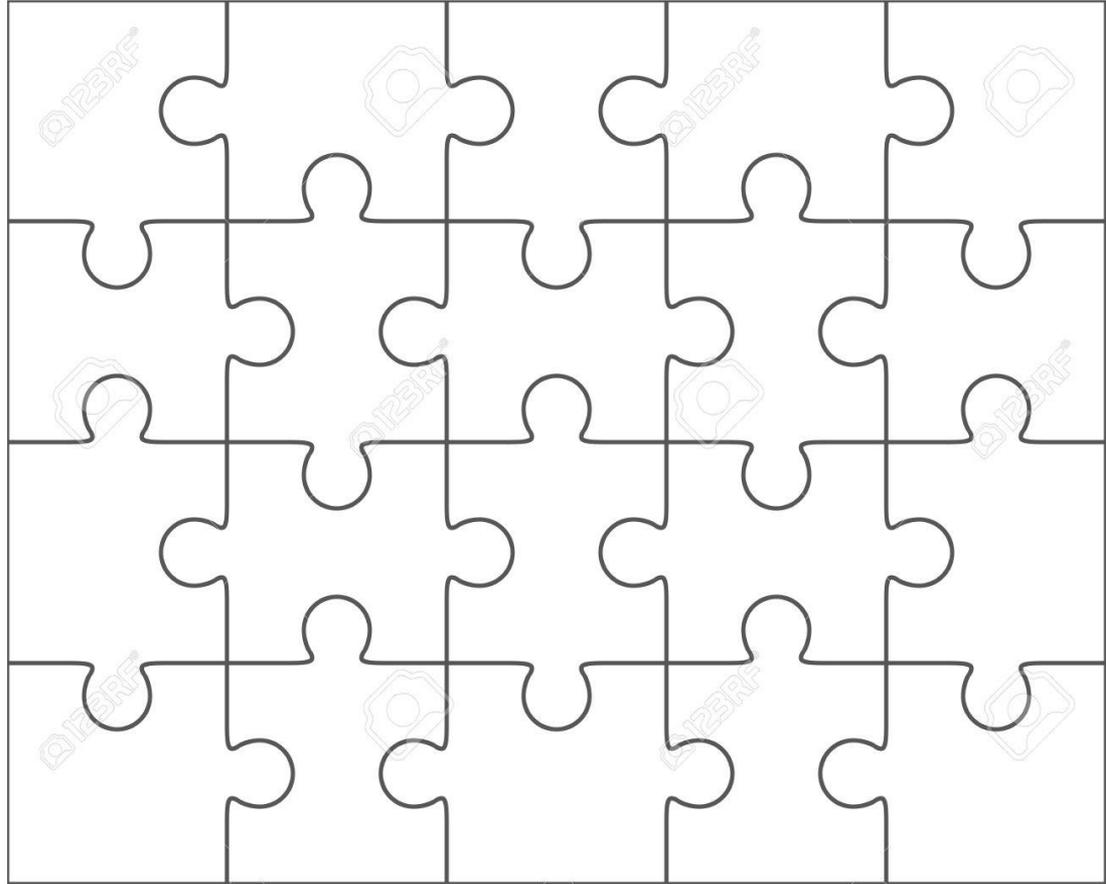
Communicative Principles of Interpretation

- Communications must be coherent.

    - Each sentence contributes to the intended meaning.
    - No sentence can be taken (even temporarily, if possible) as contradicting the intended meaning, given the overall context of the situation.

Communicative Principles of Interpretation
Syntactic and Semantic Garden Pathing

- Syntactic structures should be designed to favor smooth processing, without detours and garden paths.
    - The complex houses both students and faculty.
    - They saw her duck.
    - A man who hunts ducks out on the weekend.
    - He borrowed the money *as* he needed it.
        - (Because or at the time that?)

Information Processing under Time Pressure

- High-stakes documents that respondents are expected to process under time pressure must be *fully* compliant with the principles of efficient information processing.
- All other high-stakes documents should also comply with efficiency principles, but somewhat less crucially.
- The Principles of Efficient Information Processing are consistent with psycholinguistic research on information processing, such as by Timothy Leffel et al. (2016)

Principles of *Efficient* Information Processing

- If a syntactic clue to the meaning of a potentially ambiguous structure is presented in any sentence, that meaning must be reinforced by other usages that have the same unambiguous meaning.

- Terminology and other assignments of meaning should be designed to be impeccably consistent.

- Needless variations of style are avoided.
- **Ponderous contrasts are eliminated.**
  - *As* the Internet *as* a space for offering services grows, the technology to design websites is becoming more accessible.
    - The use of *as* to represent a *temporal subordinator* and well as a *preposition of manner* is jarring and takes time to resolve.

Principles of Efficient Information Processing

- Each linguistic structure must support the overall intent, not cast doubt on it.

- Irrelevant structures must be removed.

- Words, concepts, and symbols that could unduly distract the reader from the task at hand should be deleted or replaced with neutral materials.

Key Performance Indicators (KPIs)

- A question's status as a KPI does not guarantee that the question in its standard form makes pragmatic sense for any particular survey.
    - If the question does not make pragmatic sense, then the question isn't functioning as intended.
- What is the likelihood that you would recommend this product to a friend or family member?
- Forcing a 0-to-10 choice is not guaranteed to elicit a response from good-faith respondents that reflects the truth of the situation.
    - Some respondents will select 0 because they just don't recommend such products to anyone regardless of their quality. No one ever asks them and they never talk about it.
    - Add the option "I never recommend such products, regardless of quality."

Accountability

- A document can lose its claimed or implied authoritative status by flouting the communicative principles of interpretation and the principles of efficient information processing.
- Such deficiencies are usually caused by careless editing and can be considered professional malpractice.
- However, high-stakes communications that *intentionally* mislead the reader are another matter and constitute professional malfeasance.

Pathological Communications

- Grice's theory of cooperative communication is a practical model essential to the reasonable analysis of language production in context.
- The **clinically useful** nature of the theory is exemplified by the fact that the American Speech-Language-Hearing Association (ASHA) cites Grice's theory as part of the basis for ASHA's official categorization of the *Components of Social Communication*.
- Grice's theory helps healthcare professionals to understand, classify, and treat disorders of communication.
- An individual's persistent violation of any of Grice's maxims can indicate an underlying pathology, unless the violations are performed for comedic, poetic, or rhetorical purposes.

Logical Fallacies as Self-Disqualifiers

- Logical fallacies and other misleading forms of argumentation—at least when used intentionally and not as editorial oversights—are essentially illicit methods to gain unfair advantage in proposing a point of view.
- The presence of deceptive rhetorical devices in a high-stakes scientific or legal report is antithetical to the role of an expert and thus can justifiably serve to **disqualify t**he supposed expert in question.
- Logical fallacies are used as a rhetorical strategy by individuals who **do not fully endorse the truth** of their assertions.
- Otherwise, they would not need to resort to deception in order to promote them. Self-endorsed messages require no artifice to report.
- An absence of deceptive features does not necessarily render a communication truthful because the sender might have perceptual limitations.
- Propaganda bubbles produce such perceptual limitations.

Equivocation

- Changing the meaning of a key term from one part of a discourse to another without explicitly notifying the reader of the change. A type of logical fallacy used in scams and swindles.
- One instance of equivocation might not be an intentional swindle, but it could seriously mislead the consumer.
- Inflation of conflict fallacy: suggesting, especially through equivocation, mislabeling, and misattribution, that experts in a field are in such disagreement about basic knowledge and terminology that the entire field cannot be trusted to provide useful evidence.
- This rhetorical technique reduces the discussion to an irrelevant debate about basic concepts that are not in dispute outside a bubble of propaganda.

Propaganda Bubbles

- People existing within a propaganda bubble can actually communicate cooperatively, even while disseminating information known to be false by those living outside the bubble.
- Communications containing misguided or completely incorrect information, can be cooperative in nature because of the sender's perceptual limitations and belief in the truthfulness of the message.
- When such information is combined with deceptive rhetorical strategies, however, it becomes evident that the communication is not cooperative.

Truthful vs. Deceptive

- One might usefully distinguish *truthful communications* from *deceptive* ones.
- Truthful means a good-faith presentation of data or facts judiciously collected in a manner consistent with the consumers' expectations regarding the duty of the speaker, writer, or publisher to be appropriately informative.
- Deceptive means intentionally disseminating falsehoods, repeatedly casting doubt on facts for which there is no actual basis for dispute, or constructing arguments upon premises known to be false.
- Notice that most bubble-blowers do not dwell exclusively within the bubble.
  - A basic understanding of the truth is required in order to construct fallacious arguments that effectively distort it.

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Disinformation Campaigns

- Disinformation campaigns are not just misinformative; by constant repetition they maliciously create persistent misrepresentations of reality.
  - **People inside the bubble acquire perceptual and conceptual impairments.**
  - **People outside the bubble are distracted from useful endeavors by needing to explain unbiased perceptions and basic concepts that cannot reasonably be considered controversial.**
    - Ironically, the very act of rebutting obvious falsehoods advances the disinformation campaign's goal to disseminate doubt about them.
- Some perceptions are limited or wrong. Some ideas are just misconceived.
- But disinformation isn't a matter of making careless conceptual errors; it's intentionally promoting misconceived notions for nefarious purposes.

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Thank you!

Founded in 2000, Reasoning, Inc. provides publishers of high-stakes documents with assurance that their linguistic products will comply, as appropriate, with the Communicative Principles of Interpretation and the Principles of Efficient Information Processing.

Reasoning, Inc. also provides clients in legal disputes with expert-witness research to establish reasonable, rule-governed interpretations of disputed text and to dismantle unreasonable or cynical interpretations of such text.

Reasoning, Inc. has served clients such as the Association of International Certified Public Accountants (AICPA), Educational Testing Service (ETS), the Law School Admission Council (LSAC), and numerous law firms and other companies in the USA and Europe.

thabick@reasoninginc.com