

## Review

# (Re)Introducing communication competence to the health professions

Brian H. Spitzberg

*School of Communication, San Diego State University, San Diego, CA, USA*

## Significance for public health

Models matter, as do the presuppositions that underlie their architecture. Research indicates that judgments of competence moderate outcomes such as satisfaction, trust, understanding, and power-sharing in relationships and in individual encounters. If the outcomes of health care encounters depend on the impression of competence that patients or their family members have of health care professionals, then knowing which specific communicative behaviors contribute to such impressions is not merely important – it is essential. To pursue such a research agenda requires that competence assessment and operationalization becomes better aligned with conceptual assumptions that separate behavioral performance from the judgments of the competence of that performance.

## Abstract

Despite the central role that communication skills play in contemporary accounts of effective health care delivery in general, and the communication of medical error specifically, there is no common or consensual core in the health professions regarding the nature of such skills. This lack of consensus reflects, in part, the tendency for disciplines to reinvent concepts and measures without first situating such development in disciplines with more cognate specialization in such concepts. In this essay, an integrative model of communication competence is introduced, along with its theoretical background and rationale. Communication competence is defined as an impression of appropriateness and effectiveness, which is functionally related to individual motivation, knowledge, skills, and contextual facilitators and constraints. Within this conceptualization, error disclosure contexts are utilized to illustrate the heuristic value of the theory, and implications for assessment are suggested.

## Background

Professions related to health care delivery now accept as axiomatic that good communication with patients and clients moderates or mediates positive health outcomes. Unfortunately, there is little consensus across the professions regarding what constitutes good communication and how it should be assessed. Each hospital, clinic, professional association, research team, and health care specialty seems determined to develop institutional, conceptual and assessment silos to represent their own perspective on communication, resulting in an expanse of trees, but little sense of the forest. At least part of this fragmentation is a result of health professions acting as if other disciplines had not grappled with such issues for the last two millennia, and had not already discovered a few common conceptual and operational principles along the way. This essay seeks to introduce a theory of communication competence that is flexible, integrative, and well-

developed in the literature of the communication discipline – a discipline devoted to the scientific understanding of personal, social, and societal communication processes. The theory of communication competence can accommodate individual and institutional concerns, and still provide a conceptual framework within which those concerns can be elaborated and compared across programs of work.

The health professions clearly value good communication. This is evidenced by the attention given to the assessment of communication competence and skill in the health professions.<sup>1-4</sup> The rationale for such attention is exemplified by two prototypical types of problematic communicative encounter in health contexts: the handoff episode and the process of medical mistake or error disclosure.

A handoff occurs whenever patient information is transferred between health care providers, such as shift changes and patient relocations. In one study, only a fourth to a third of medical students indicated any training in handoffs, and approximately only a fourth of those with little experience in handoffs reported feeling confident in the task.<sup>5</sup> Research indicates that among trained, highly educated professionals, involving the most fundamental and relatively objective process of transmitting information from one person to another, error is commonplace.<sup>6</sup> Specifically, Hinami, Farnan, Meltzer, and Arora surveyed professionals at 17 hospitals, finding that 13% of handoff communication events were considered *incomplete*, 18% left uncertainty about the care plan during the transition day, and 16% involved a near miss.<sup>7</sup> Maughan, Lei, and Cydulka found 13% omissions and 45% errors,<sup>8</sup> whereas Chang, Arora, Lev-Ari, D'Arcy, and Keysar found that *the most important piece of information about a patient was not successfully communicated 60% of the time, despite the postcall intern's believing that it was communicated.*<sup>9</sup> Having identified 18 categories of information critical to post-operative care, a study of 134 patients found that 100% of handoffs contained errors (absence or inaccuracy), and 94% involved more than one error.<sup>10</sup> In a study of 70 medical mishaps, communication was identified as contributory in 91% of them, and a common theme was that the residents involved *were concerned about appearing incompetent in front of those with more power and they were hesitant to communicate information that was unfavorable or negative to themselves.*<sup>11</sup> The structural and interactional features of health care organizations often create communicative binds that restrict optimal communication processes.<sup>12</sup> These professionals experience conflicted motivations, believe they know they are competent when they are not, and are otherwise unaware that communication has not functioned as it was intended.

There are many types of medical error and many types of communication failure in responding to such errors.<sup>13-16</sup> But the process of disclosure itself has only recently received significant attention in the research literature.<sup>17</sup> Patients tend to report that they prefer mistakes and errors be disclosed, and report likelihood of greater satisfaction and likelihood of returning to the same physician.<sup>18-20</sup> Apologies are extraordinarily complex and brittle speech acts.<sup>21-23</sup> Given the ability to engage in *non-apology apologies*, research indicates that apologies are more likely to be viewed as competent to the extent that they occur in

an intimate or satisfying relationship, and are perceived as sincere, acknowledging wrongdoing, remorseful, responding to a less intentional or more accidental transgression, and offering compensation.<sup>24</sup> These features of an apology and its effects present two important implications. First, the speech act of an apology is far more complex than asking whether or not an apology was offered. Second, asking *was an apology offered* is likely to be far less important a question than *how competently the apology was performed*.<sup>25</sup> Indeed, in a study of the verbal and nonverbal enactments of health professionals responding to disclosure scenarios, *physicians disclosed their errors in skillful ways in only half of the interactions... in almost half of the encounters, they chose not to be completely honest, did not convey empathy, and failed to accept responsibility for their error*.<sup>26</sup>

The complexities of communication in these two sentinel types of medical interactions, handoffs and error disclosures, illustrate the importance of competent communication. In these contexts, errors can be introduced, and aggravated, by incompetent performance, or minimized and repaired by competent performance. As such, the impression of the health care professional's communication competence becomes a significant moderator or mediator of the outcomes of such encounters. A conceptual framework toward communication competence is introduced next, which has significant implications for the assessment and training of communication in the context of health care interactions.

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## The importance of communication competence

The interdisciplinary Palo Alto school of scholars articulated some time ago that *one cannot not communicate*.<sup>27</sup> Although much debated within the field of communication, this is a sensitizing assumption – it draws attention to the idea that regardless of a communicator's intention to send a message, people interpret and assign meaning to that communicator's behavior. A nurse may simply intend to be efficient, but a patient may read such behavior as communicating a lack of empathy, concern or sociability. That is, the nurse was just going about business, but the patient interpreted the *meaning* of that nurse's behavior as something else. All observable verbal and nonverbal behaviors are part and parcel the constituents of communication, and any or all such behaviors can, and generally do, contribute to people's interpretation of any given encounter.

This axiom leads to several fundamental corollaries. First, *communication constitutes relationships*.<sup>28</sup> Whether strangers or lovers, kin or colleagues, informal or institutional relations, communication is the *sine qua non* of relationships. There is no such thing as a relationship without communication.

Second, *relationships are vital to quality (and quantity) of life*. Research has examined this proposition from a variety of perspectives. The most common is examining social networks (*e.g.*, social integration, frequency of interaction in a social network, number of social ties, etc.) or social support. For example, despite societies investing billions to influence people to quit smoking, lose weight, exercise more, reduce exposure to pollution, and so forth, competent achievement of social relationships in the form of social integration, social networks, and social support are more important to reducing mortality.<sup>29,30</sup> More competent patterns of communication are significantly related to cardiac health,<sup>31</sup> viral and immune resistance,<sup>32</sup> cancer survival,<sup>33</sup> stress reduction,<sup>34</sup> health-promoting behavior,<sup>35</sup> overall health,<sup>36</sup> and the avoidance of management derailment,<sup>37</sup> medical errors and their complications and costs.<sup>38,39</sup> The deductive conclusion of corollaries one and two resolves as a third: therefore, *communication is vital to quality/quantity of life*.

Fourth, *the greater the competence of communication, the greater the quality of relationships*. Competent (*i.e.*, higher quality) communication has been extensively linked in empirical research to more satisfying personal relationships and more satisfying and productive occupational relationships.<sup>40-43</sup> The importance of communicative competence to relationships has been emphasized explicitly in regard to the relationships between health providers and their patients.<sup>44</sup>

Fifth, *the greater the quality of relationships, the greater the quality of life*. Aside from all the pathologies and morbidities noted above, interpersonal skills and competence have been linked to well-being and the avoidance of daily stresses, and depression.<sup>45,46</sup> It follows deductively, therefore: *the greater the competence of communication, the greater the quality of life*.

One of the most surprising aspects of this set of syllogisms is that the vast majority of people seem pluralistically ignorant of this competence paradox – because we communicate every day of our lives, we tend to assume that we are reasonably competent, and yet, we are acutely aware of how often the problems of life depend on, and suffer because of, inadequate communication. Part of this irony is displayed as a fairly fundamental bias that limits motivations for self- and institutional improvement: the self-enhancement bias, also known as the *Wobegon effect* or the *better than average effect*.<sup>47,48</sup> Most people view themselves as *above average*, which of course, is statistically impossible. So people generally do not perceive much need to improve their own communication. Yet, numerous studies indicate that sizeable percentages of the U.S. population lack fundamental literacy and communication abilities. Research indicates that people commonly encounter problems in their communication and social relationships.<sup>49</sup> Research across a variety of approaches to operationalizing competence suggests that about 7-25 percent of the adult population is interpersonally incompetent<sup>1</sup> or debilitated by social anxiety and/or social isolation.<sup>50,51</sup>

The available evidence indicates that there is substantial need for, or at least, substantial room for, better interpersonal skills among a significant proportion of the populace. While there is evidence that good communication experiences outnumber bad communication experiences in everyday life,<sup>52</sup> the less frequent negative communication encounters appear to disproportionately outweigh positive events in their consequences.<sup>53</sup> Thus, communication is vital, ubiquitous, and is the fundamental foundation of everyday human activity. Yet, despite its ubiquity, it is often far from optimally performed or experienced. It follows, therefore, that it would be valuable to pursue better understandings of the process of competent communication. To establish a better understanding requires first the development of a further set of communication axioms specific to communication competence.

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## Axioms of communication competence

Scholars have attempted to conceptualize models and characteristics of good communication since at least the time of Plato and Aristotle.<sup>54,55</sup> Tracing the paradigmatic, theoretical, ethical, and empirical literature from then until now, Spitzberg and Cupach and colleagues have attempted to formulate a flexible integrative perspective toward competent communication.<sup>56-59</sup> The explication of this perspective will proceed through its grounding assumptions and rationale, resulting with an articulated model, along with a consideration of its heuristic value.

By way of introduction, a broadly held presumption must be overturned. The term *competence*, like its synonym *ability*, is commonly assumed to have an objective set of referents. Instead, competence must be reconceptualized as an inherently subjective concept. The grounds for this radical reformulation follow along a series of claims.<sup>60,61</sup>

First, communication processes are equifinal and multifinal (*communication is systemic*). *Equifinality* means that there are many paths to the same end or outcome. *Multifinality* means that any single given path may result in multiple possible outcomes. A fear appeal to a patient may work with one patient resulting in therapeutic compliance, whereas it may aggravate or disillusion another patient, resulting in noncompliance. In contrast, there may be multiple different ways of structuring a message that will result in greater patient compliance (e.g., fear appeal, gain frame, narrative evidence, statistical appeal, counter-argument inoculation, etc.).<sup>62,63</sup> As an example, although apologies are often prescribed as a standard communication competency in mistake disclosure situations, Mazor and colleagues found that for some patients experiencing mistake disclosures, the apology was not sufficient to restore trust or to return to that professional's care.<sup>64</sup> Certainly, in such contexts, *apology alone was not considered a sufficient response to incompetence*. It is little surprise, therefore, that forgiveness varies from one type of mistake account to another.<sup>65</sup>

Second, communication skills are curvilinear to evaluation (*communication is curvilinear*). There can be too much of a good thing, and almost any behavior, no matter how normatively positive its evaluation, is likely to result in negative evaluations to the extent that it is used excessively. We are commonly told to engage in eye contact, yet staring or glaring is considered rude. We are told to ask questions, but a barrage of questions can seem like interrogation or uncertainty or deference. Even social support and positive affect can be excessive.<sup>66</sup> In almost all circumstances, there is the possibility of enacting too little, or too much, of a communication skill.

Third, communication skills are evaluated differently by different people (*communication is perspective-dependent*). Whether communication is being evaluated by self or by other is referred to as the locus of perception. Research demonstrates that communicators do not perceive themselves in the same way as others perceive them. There is typically between 0.25 and 0.50 correlation between an interactant's self-assessment and others' perceptions of that interactant.<sup>67,68</sup> A meta-analysis of medical students' ability to self-assess their own abilities, in particular, including communication abilities, correlated 0.22 to other measures of their performance. A study comparing patient with physician ratings of the physician's respect behaviors found that 45% of the patients overestimated physician respect, and 16% underestimated the physician's level of respect.<sup>69</sup> Blanch-Hartigan found that on average, medical students' self-assessments of their ability correlated only 0.21 with independent criteria of their abilities.<sup>70</sup> In another study, multiple interns' ratings of a given intern's handoff communication skills relate at only 0.18 on average.<sup>71</sup> Analogue patient satisfaction correlates to real patient satisfaction in similarly modest ways, although correlations increase when certain restrictions of range are constrained.<sup>72</sup> Perhaps the most insidious prospect is that biased self-assessment is itself a marker of communicative incompetence – that those whose self-perceptions are inflated are the most likely to be communicatively incompetent.<sup>73,74</sup> Research on core communication contexts in emergency healthcare contexts found that patients tend to interpret their illness in a normal narrative rationality sense, whereas health professionals often interpret medical situations in a technical rationality sense. Thus, when patients are reconstructing the rich story of their incoming history, health professionals are deconstructing extracted symptoms as a routine checklist and treatment recipes.<sup>75</sup> These distinct interpretive perspectives yield different perspectives on the extent to which a patient feels attended to. It is apparent that any single perspective is subject to biases, and that multiple assessment loci are preferable.

A particularly potent exemplar of the implications of this axiom is found in the research on assertiveness training. In the 1970s and 1980s, training people in assertion skills was widely viewed by psychol-

ogists as a set of skills that would enhance a person's social competence and mental health. They found they could teach such skills, and that such skills elicited impressions of competence from third-party raters, usually comprised of professionals and counseling graduate students. Eventually, however, researchers began asking what the conversational *partners*, those who received such assertiveness, thought about the assertive person. These partners tended to perceive such assertive behaviors as *effective*, but *not very likable or appropriate*.<sup>57</sup> This illustrates the hazards of presuming either that any one *locus* of perception is sufficiently informative, or that skills alone are a sufficient concern for instruction and investigation.

Fourth, communication skills are evaluated differently in different contexts (*communication is contextual*). A smile tends to mean very different things when telling a story or a joke, as compared to disclosing bad news. Asking *What's going on?* has very different communicative implications when asked casually of a coworker passing in the hallway than it does in the middle of open heart surgery. Different physical, cultural, relational, and functional situations elicit different sets of expectations and criteria for evaluation of people's behavior.<sup>76,77</sup>

Fifth, the competence of communication skills is an inference (*competence is an inference, not an ability*). Traditionally and historically, competence has generally been defined as a set of abilities or skills. An *ability* is generally defined as a potential trait through which a person can perform a task. To the extent that this ability is learnable, intentionally or goal-directed, repeatable, and capable of improvement, it can be considered a *skill*. In any given context, the behaviors a person engages in do not *constitute* their competence. They constitute the person's abilities and skills, but whether or not those abilities and skills are *competently performed* is always a contextualized judgment applied to the adequacy and relevance of those behaviors for that particular activity and that particular context. Competence, therefore, does not inhere in the ability to perform a behavior *per se*, but in the social evaluation of the behavior by a given perceiver in a given context. This distinction is obscured by most models of communication competence in the health setting, such as the early model by Kreps or Hannawa in which competence tends to be conceptualized as comprised by skills, rather than inferences about the quality of those skills.<sup>78,79</sup> Competence is an impression, or an evaluative inference, rather than an ability or set of skills or behaviors *per se*.

This radical reformulation is important, so it will be restated as bluntly as possible. In a simple case of closing a suture or diagnosing an X-ray, there may be an important sense in which competence is precisely *whether or not* a set of specific, correct behaviors and decisions are made at all. But even in these cases, issues of probability and *levels of proficiency* arise. In the case of *communication behavior*, it is never the case that competence can be understood strictly as the ability to *do something* behaviorally. Instead, competence is always contingent upon social evaluations of a set of behaviors in a social (e.g., cultural, relational, situational, functional) context. It is therefore this evaluation, and *not the skill itself* that constitutes competence, and it is this evaluation that will mediate, or at least moderate, the role that the specific, objective skills have on the outcomes of that communicative episode. As such, the evaluation of skills becomes an essential part of assessment and conceptualization, and who is conducting those evaluations becomes an essential priority in the understanding of how a given set of skills produce a given set of outcomes. That is, the skills of communicating are only one part of the puzzle, and often not even the most important part.

Sixth, communication accomplishes things (*communication is functional*). The assumption that competence is an inference or judgment, rather than an objective set of skills, does not deny the importance of skills – it simply gives them a different, and more conceptually useful, role in a model of competence. Specifically, the relevant question of competence changes from *What skills comprise communication competence?* to *what skills best predict impressions of competence?* Although

competence is an evaluation and not a skill, the evaluation is likely to be systematically related to skills. Certain skills are more likely to predict impressions of competence across given types of societal and cultural contexts than others. That is, behaviors *function* to produce impressions of the competence of those behaviors. It is expected that in contextually (culturally, relationally, situationally, functionally) homogenous episodes, the relationship between certain behaviors and certain competence impressions will be systematic, and therefore, predictable.

Seventh, conversational skills can be understood at different levels of scale (*communication skills vary in hierarchy and abstraction*). A person's communication skills can be perceived, and evaluated, at various different levels. Skills can be evaluated and assessed at multiple levels of inference and judgment, varying along a continuum of abstraction, from very specific (molecular) to very abstract (molar). The more specific the skills assessed, the more informed diagnostics, instruction, and intervention can be. This assumption becomes particularly important in the development and validation of assessments of competence. It is common to examine any given assessment of communication competence and see items cast at very different levels of abstraction. For example, an instrument may have an item or competency assessing a medical student's *asking of questions regarding the patient's condition* right next to another item assessing the student's *made a professional impression*. Asking questions is a relatively objective *molecular*-level behavior or skill, whereas professional impression is a high-level *molar*-level inference based on numerous potential molecular behaviors, and other personal biases, stereotypes, and beliefs. If competence is an impression or inference about a person's quality of communication, then *skills* must be separated from the *evaluation* of those skills, which means that assessments must be designed to separate these types of judgments – what skills (behaviors) were performed, and to what extent were these behaviors performed *competently*. If competence is a judgment, what kind of judgment is it? It is a judgment of quality.

Eighth, communication skills are subjectively evaluated (*communication competence is a judgment of quality, best anchored by appropriateness and effectiveness*). The impression of competence is optimally defined by two judgments of quality: appropriateness and effectiveness. Most other relevant evaluative criteria (e.g., clarity, understanding, satisfaction, efficiency, attractiveness, etc.) are substantially subordinate to or overlapping with appropriateness and effectiveness. *Appropriateness* is the degree to which a person, or a person's behavior, is perceived as legitimate, acceptable or fitting to the context. *Effectiveness* is the degree to which one or more relatively preferable outcomes are achieved in that context.

A person's behavior can be evaluated as both inappropriate and ineffective (minimizing), appropriate but ineffective (sufficing), inappropriate but effective (maximizing), or both appropriate and effective (optimizing). These are distinguishable evaluations in regard to communication behavior but they are also closely interrelated.<sup>80-83</sup> It is important to note three additional features of these criteria. First, appropriateness is not the same as conformity to the normative rules of a situation. There are times when behavior must violate existing rules in order to negotiate and establish new rules. A doctor crying with a patient after delivering bad news may violate normative rules of the relationship, but it is not out of the question that there could be times when such behavior would be understood as changing that rule. Second, effectiveness is not the same as goal achievement. There are no-win situations, in which any action will result in harm or dissatisfaction. There may be few if any ways of discussing ending life support, harvesting organs, or disclosing a medical error that are considered satisfying, but clearly there are more and less competent ways of engaging in such discussions. In such cases, effectiveness consists of engaging in the *least costly or harmful* course of action. Third, these are complexly interrelated criteria. Behaving inappropriately often will jeopardize the ability to be effective, as people reject the relationship or seek other avenues of goal pursuit. Likewise, engaging in

ineffective behavior, allowing others to have their way, may be viewed as inappropriate if confident or assertive decision-making actions are expected.

Ninth, subjective evaluations of skills vary from low to high levels (*competence judgments are continual, not dichotomous*). Judgments of quality (i.e., appropriateness + effectiveness) are most naturally arrayed along a continuum, from lower levels to higher levels of competence. Indices of competence, therefore, need to be at least minimally ordinal to interval in nature. As such, our language allows judgments of others as *incompetent* or *competent*, but such dichotomous terms are actually anchored along a continuum ranging from *extremely incompetent* to *extremely competent*, with shades of gray populating the range between such anchoring judgments.

Tenth, different people evaluate communication skills differently (*judgments of competence and their locus vary in utility*). Judgments of quality in general, and appropriateness and effectiveness in particular, are not equally relevant and important to all parties in a communication encounter. Although multifinality and equifinality mitigate any universal generalizations, it seems reasonable to conjecture that a communicator is the best judge of his or her own effectiveness, and the other communicators in that context are the best judge(s) of that person's appropriateness. Specifically, only I can know if I achieve goals or outcomes that seem relatively advantageous (or relatively less costly). However, consistent with the Wobegon effect, I am likely relatively unaware of the extent to which I come across as rude, off-putting, awkward, or inappropriate to the others in the encounter. Thus, even though communicators will judge both self and others in the encounter in terms of their appropriateness and effectiveness, these criteria are weighted differently across self and others.

Eleventh, successful communication depends on the subjective evaluation of communicators and their communication (*competence impressions moderate and mediate communicative outcomes*). Research on conflict in interpersonal relationships demonstrates that positive relational outcomes such as trust, power sharing, liking, and satisfaction are mediated by the impression of competence (i.e., appropriateness and effectiveness).<sup>84</sup> This means that research and assessment need to separate the actions involved in a particular communicative task or function, the communicative manner in which those actions are performed, and the relationships of those actions to both professionals' and patients' impressions of the competence of those actions. If any given behavior may be considered a competent response in one context (whether cultural, relational, environmental, or functional) but not in another, then it is not the behavior that is intrinsically competent or incompetent. As illustrated by assertiveness training, any given skill in any given context, with any given perceiver, can be perceived as inappropriate and ineffective, appropriate but ineffective, effective but inappropriate, or appropriate and effective. It is therefore the evaluation of that behavior's appropriateness and effectiveness that index the competence of the behavior in any given context. As such, the question is whether or not the skills that are being taught are the skills that patients will perceive as appropriate and effective.

Twelfth, communicative performances are evaluated through the expectations of others (*competence evaluations are moderated by valenced expectations*). Enculturation involves, among other processes, the development of a repertoire of experiences in a variety of social contexts. As such, over time an individual begins to formulate interpretive categories and models, or cognitive schemas,<sup>85</sup> which represent idealized features of contexts, relationships, episodes, encounters and types of individuals.<sup>86</sup> Not all expectations are created equal in function, however. In the event that a communicator can ascertain the *valence* of other people's expectations in an encounter, then positive expectancies should be fulfilled, whereas negative expectations should be unfulfilled or appropriately violated. For example, in a routine successful medical procedure,

people expect positive outcomes and are more prone to evaluate routine communication of such outcomes as competent. In contrast, however, one of the reasons that forthcoming disclosures and offers of apology and automatic remuneration may be viewed as competent is because they violate people's negative expectations that institutions and professionals to cover up their mistakes.

Given these axioms as a background, it is now possible to sketch the figure of a competence model. The model in Figure 1 illustrates in very basic form the concepts involved in accounting for competent communication. It is important to remember that competence is strictly only the appropriateness and effectiveness judgments at the *end* of the model. All the other components are proposed *predictors* of competence – they do not constitute competence.

## A theoretical model of communication competence

*Communication competence* can now be formally defined as *the degree to which meaningful behavior is perceived as appropriate and effective in a given context*. To the extent that a particular individual is perceived as consistently engaging in appropriate and effective communication, that individual is likely to be viewed as a *competent communicator*. A person may perceive self as a competent communicator, and not perceived as competent by others, and *vice versa*.

Impressions of a communicator's competence are not randomly formed. Instead, certain factors systematically predict the impression that a person, or that person's communication, is judged as appropriate and effective in any given context. Specifically, a common integrative conative model has proposed that competence is a subjective evaluation of communication quality that is a probabilistic function of a communicator's motivation, knowledge, and skills.<sup>87,88</sup> Motivation concerns the approach and avoidance orientation to communication.<sup>89</sup> Knowledge includes the cognitive content and procedural dynamics of action assembly.<sup>90</sup> Communication skills are the repeatable goal-oriented action sequences involved in message production and interaction.<sup>91</sup> Such a model provides a flexible conceptual framework within which assessment projects can be organized.<sup>92</sup>

In any given context, judgments of appropriateness and effectiveness (*i.e.*, competence) are expected to be a systematic function of the combination of five broad sets of communicator factors. First, a communicator may fail to be viewed as competent because she or he is either too appre-

hensive, or not sufficiently motivated to pursue the goal of competence in a given conversation (*i.e.*, motivation). Second, a communicator may have sufficient motivation, and yet fail to be viewed as competent because she or he does not know the appropriate or effective behaviors to enact in a given conversation (*i.e.*, knowledge). Third, a communicator may be both motivated and knowledgeable, and yet in a given conversation poorly enact behaviors in accordance with this motivation and knowledge (*i.e.*, skills).

Fourth, the appropriateness and effectiveness of a communicator's behavior(s) may be constrained, or facilitated, by features of the context.<sup>93</sup> Contexts occur along a matrix of dimensions, including the following core facets: cultural (*i.e.*, the intergenerational rites, rules, rituals, beliefs, and values of an identifiable group), chronological (*i.e.*, the uses of time in synchronizing, initiating, ending, and coordinating mutual behavior in an encounter), relational (*i.e.*, the personal sense of connection, attachment, or role interdependence with another person), situational (*i.e.*, the physical environment, along with its props, artifacts and space), and functional (*i.e.*, the task or objectives of an encounter or relationship).

Fifth, motivation, knowledge, and ability are manifest through communication skills. Unfortunately, it is difficult to know a priori *which* skills are most likely to be viewed as competent in a particular context. For example, in reviewing the interpersonal communication skills comprising communication competence in general, and in predicting marital satisfaction, and in constituting intercultural communication competence in particular, Spitzberg and colleagues have identified over 100 skills in each investigation.<sup>94-96</sup> In these reviews, however, the authors also proposed that there are not really hundreds of different skills, but merely hundreds of different labels for many of the same underlying abilities. After categorizing factors that had been mislabeled skills into the motivation, knowledge, context, and outcomes categories, the remaining skills in each case could be categorized into four clusters of a moderate-level abstraction structure: attentiveness, composure, coordination, expressiveness.

*Attentiveness* skills display attention to, interest in, and concern for the other(s) in the situation. It includes all the verbal and nonverbal processes of listening, displaying empathy, allowing the other people's topics to be pursued, asking questions, and revealing the ability to track the other person's communication. *Composure* skills avoid anxiety (*e.g.*, dysfluencies, avoidance of eye contact, shaking or nervous twitches, uncomfortable posture, etc.) and instead, manifest confidence, control over one's communicative actions, and a willingness to assert one's opinions and agenda through respectfully yet assured message behavior. *Coordination* skills are the verbal and nonverbal management of the ebb, flow, timing and synchronization of the communication process. Coordination skills display appropriate use and balancing of time talking, interruptions, entering and departing a conversation, and initiating and transitioning from topic to topic, or person to person. *Expressiveness* skills are all those verbal and nonverbal ways in which people animate their communication, including facial expressiveness (*e.g.*, smiling, eye and eyebrow behavior, emotion displays, etc.), gestures, body movement, humor, narrative, and vocabulary choices.

Consistent with prior assumptions, these skills do not define or constitute competence. Research indicates, instead, that these skills are significantly predictive of self and other impressions of appropriateness, effectiveness, quality, and competence. Even though many approaches to communication skills training of health professionals include skills specifically adapted to particular contexts (*e.g.*, the medical interview, delivery of bad news, managing the communication of medical error, etc.), the competence with which these particular functions are enacted through communication behavior will depend significantly on the attentiveness, composure, coordination, and expressiveness with which such functions are performed. Further, any of these skills can be performed too little or too much (in duration, quantity, fre-

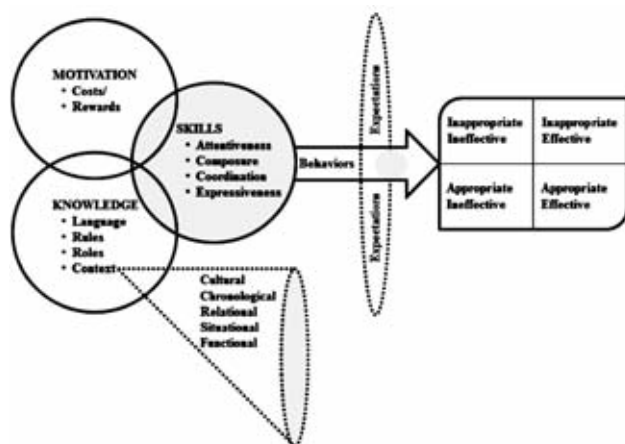


Figure 1. A model of communication competence.

quency, etc.), and this would show up in the form of lower appropriateness and effectiveness evaluations of these skills.

Sixth, although appropriateness and effectiveness constitute the primary outcomes of interest in assessing competence, other outcomes of the interaction are likely to influence judgments of competence, including primarily: efficiency, satisfaction, attractiveness, and clarity/understanding/accuracy. In emergency situations, tolerance for deviations from routine or normative expectancies is usually broadened as the structure of the situation evolves through the alternative tasks that have to be triaged and pursued, and efficiency trumps judgments of appropriateness. In hand-off interactions, clarity and accuracy of understanding are generally considered paramount, even though there are clearly likely to be more or less appropriate ways of achieving clarity and understanding.

Finally, the model is intended to be scalable. The competence model is theoretically open-ended. Additional conceptual components can be added to refine the five core components, or identify additional processes that enhance predictability of these components. For example, various theories of expectancy fulfillment or violation may elaborate the ways in which perceptions are formed of behaviors.<sup>97</sup> Specific task components or skills associated with a given health context or discipline can be folded into the skills component.<sup>98,99</sup>

Thus, to be competent, an interactant needs have the motivation to create a competent impression, and avoid being debilitated by anxiety. Further, an interactant needs to have the knowledge relevant to the context, topics, activity procedures, norms, and the like. Having motivation and knowledge, however, may not be sufficient if the person cannot demonstrate the actual interaction skills required to implement their goals and understandings.

## Applications to error disclosure

There are several implications of this model of competence for understanding the communication of error in health care contexts. Making use of error disclosure as an exemplar, Figure 2 displays some of the granularity implied in viewing this form of communication through the lens of this competence model.

Competence is a social standard, open to the prevailing subjective conceptions of propriety and efficacy. Further, because competence exists on a continuum (*i.e.*, from low to high rather than a dichotomy or discontinuous form), behavior is always competent relative to its perceived possibilities. This in no way diminishes the importance of skills and abilities; it only shifts their role in a comprehensive model of communication competence. Skills and abilities (*e.g.*, active listening, speaking fluency) may make the impression of competence more likely, but they do not guarantee such an impression.

At a very fundamental level, and with the exception of a variety of specific therapeutic endeavors, in the social realm we are seldom interested in the brute binary fact of whether or not someone can merely perform a behavior, or even a sequence of behaviors. The vast majority of the time, particularly in the realm of social action, the concern is how well a class or group of behaviors can be performed, and the standards of quality in this regard are intrinsically social and subjective in nature. To suggest a rather pointed illustration, few of us would be willing automatically to declare a blind person communicatively incompetent if she or he has difficulty establishing eye contact in the process of interacting. Instead, we would tend to adopt alternative criteria, such as how smoothly turns were managed, how well topical flow was developed, how satisfied the interac-

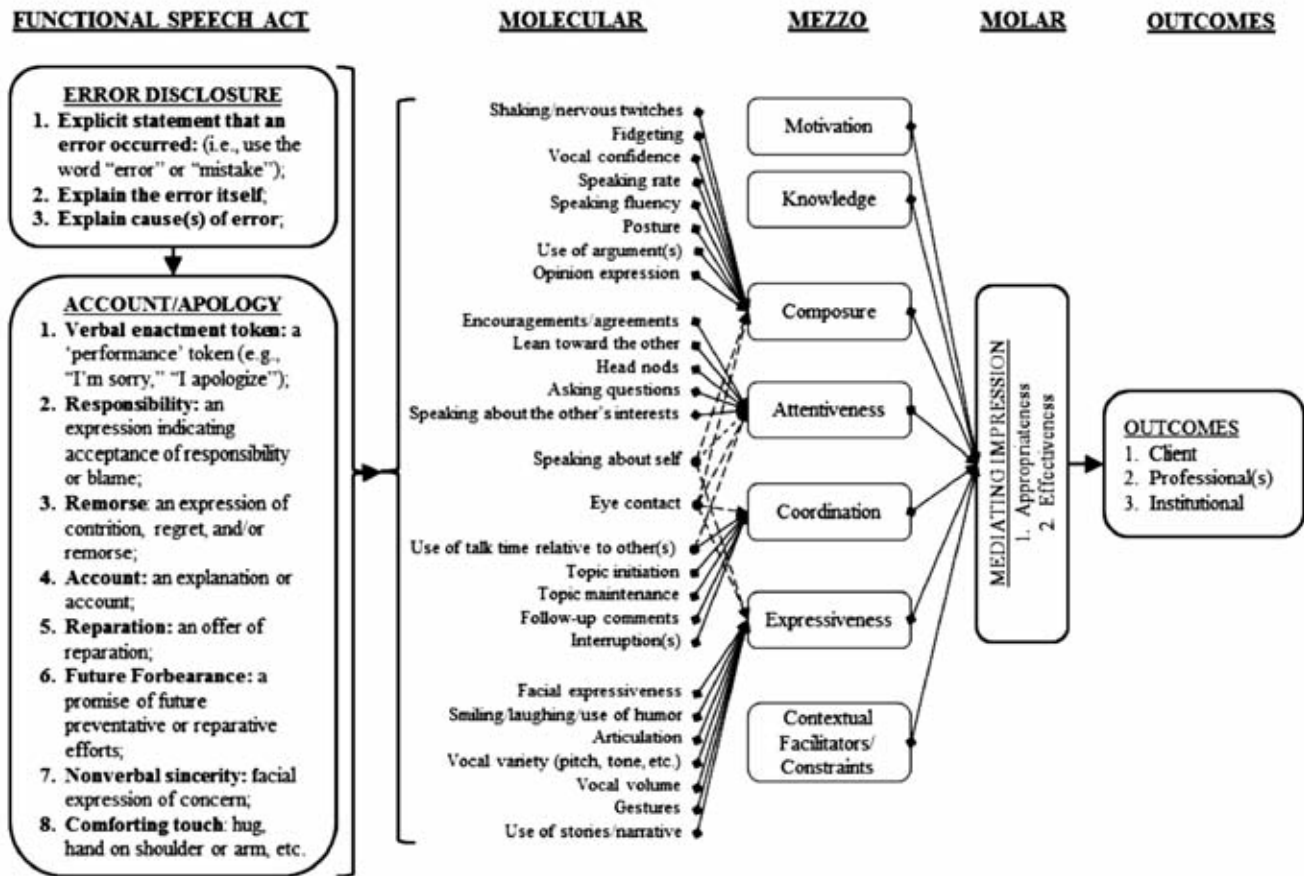


Figure 2. An exemplary abstraction continuum for analyzing error disclosure from a competence perspective.

tants were, and so forth. In a medical compliance context, there may be multiple ways of competently gaining compliance. In communicating a medical error, there may be several distinct skills involved, and each may reflect several potentially competent (or incompetent) approaches.<sup>26</sup> The standards for evaluating competence are subjective in nature. The question then, is how objectively such subjective standards can be incorporated into a measure of competence in a way that preserves the importance and relevance of objective performance and skills.

From the perspective of this model of communication competence, the study and assessment of error disclosure would proceed in the following way, which is illustrated in Figure 2. First, the best available research relevant to error disclosure and accounts and apologies,<sup>100-102</sup> and apology would be surveyed to identify the most likely skill component candidates for instruction and assessment.<sup>80</sup> Some of the prototypical components are identified as functional speech acts of error disclosure and apology in Figure 2. Once these acts are codified and taught, the communicative skills with and through which such speech acts are performed would be introduced as part of the curricula, illustrating that the process of communicating error is not just about the tasks or functions to fulfill, but the *ways* in which these tasks are communicated. Such skills are likely to be facilitated by motivation,<sup>103</sup> knowledge,<sup>104,105</sup> and by a context that facilitates disclosure and reconciliation, and lacks contextual constraints such as an institutional climate of retribution for mistakes. Assessment would focus on the extent to which professionals would be motivated and confident in regard to engaging the error disclosure process competently, their self-perceived knowledge and ability to engage the error disclosure process competently, and their perceptions of the contextual constraints and facilitators. Assessment of their skills would compare their own assessment to those of other professionals, standardized patients, and actual patients, of their skills in disclosure and apology, as well as their communicative enactment skills. Then, these same parties would rate the appropriateness and effectiveness of these skill enactments in actual contexts, whether role-played or in actual health care contexts. Key outcomes would include surveying patients regarding their impression of key outcomes, such as satisfaction with the encounter and with their health care experience, their likelihood of returning to this provider and professional. Key outcomes would also involve monitoring rates of legal consequences and costs, and success of error reduction interventions at reducing types of errors. Then, research would investigate the extent to which particular skill enactments and personal factors (*e.g.*, motivation, knowledge, etc.) systematically predict impressions of competence in consistent ways across parties, and in turn how these competence impressions do or do not mediate the effect of the skills on these kinds of key outcomes. Over time, programs of research would identify the most important skills predicting the most important outcomes, and these would in turn be folded into instruction, competency standards, curricula, and ongoing systematic assessments.

## On not making the same mistake twice

People can learn from their actual mistakes and they can be sensitized to the prospect of mistakes and how they can be handled.<sup>106,107</sup> No single approach to instruction, intervention, or assessment will be sufficient to assure professional competence,<sup>108-110</sup> although there are certainly some useful models for organizing more comprehensive approaches to assuring professional competencies,<sup>111,112</sup> as well as identified improvements that are needed in the research literature on communication skills training and transfer.<sup>113-115</sup> The relatively technical and technological fixes, such as checklists, system-wide code-scanning, and communication media offer significant potential for reducing errors and enhancing communication effectiveness.<sup>116-118</sup> Research in nonmedical contexts sug-

gests that i) communication about problematic communication scenarios, and ii) training that incorporates errors as exemplars in the process of learning, both tend to reduce the likelihood of errors and their adverse consequences.<sup>119,120</sup>

The model elaborated here could be translated into some curricular and assessment content, but it is important to recall the equifinality and multifinality axioms. Strictly defined performance standards tend to be narrowly constructed, and thereby result in numerous problems in application to the ineffable and infinite variegations of actual experience.<sup>121</sup> Thus, any curricular or assessment translations of this model will require subsequent research to establish the skills that most consistently predict preferred impressions of competence and outcomes. In the process, careful attention to different groups of patients, whether based on culture, age cohort, or other personal factors, may indicate preferences for certain types of disclosure enactments over others. Eventually the idea would be to allow the competence impressions to identify which behaviors are perceived as most competent, and identify the relevant factors decisions that might facilitate the provider's adaptations of enactments to that particular patient relationship and context.

Validly formulated programs of training and assessment will need to separate the motivation, knowledge, skills, contexts, and expectations elements of their performance roles, and then separately identify the criteria of evaluation and judgment considered most important for such performances. Then, by using the motivation, knowledge, skill, context and expectation factors as predictors, the most important factors in those contexts can be identified, operationalized into the assessments, and integrated into curricula and training. At that point, competent performance cannot be guaranteed, but it can be made more probable. This is a more responsible, and realistic, approach to pursuing a communicatively competent process of professional practice.

Correspondence: Brian H. Spitzberg, School of Communication, San Diego State University, San Diego, CA 92182-4560, USA.

Tel. +1.619.594.7097 - Fax: +1.619.594.704

E-mail: spitz@mail.sdsu.edu

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## References

1. Boon H, Stewart M. Patient-physician communication assessment instruments: 1986 to 1996 in review. *Patient Educ Couns* 1998;35:161-76.
2. Schirmer JM, Mauksch L, Lang F, et al. Assessing communication competence: a review of current tools. *Fam Med* 2005;37:184-92.
3. Iramaneerat C, Myford CM, Yudkowsky R, Lowenstein T. Evaluating the effectiveness of rating instruments for a communication skills

- assessment of medical residents. *Adv Health Sci Educ* 2009;14:575-94.
4. Klakovich MD, Dela Cruz FA. Validating the interpersonal communication assessment scale. *J Prof Nurs* 2006;22:60-7.
  5. Arora V, Eastment M, Bethea E, et al. Participation and experience of third-year medical students in handoffs: time to sign out? *J Gen Int Med* 2013;28:994-8.
  6. Rabøl L, Andersen M, Østergaard D, et al. Descriptions of verbal communication errors between staff. An analysis of 84 root cause analysis-reports from Danish hospitals. *BMJ Qual Saf* 2011;20:268-74.
  7. Hinami K, Farnan J, Meltzer D, Arora V. Understanding communication during hospitalist service changes: a mixed methods study. *J Hosp Med* 2009;4:535-40.
  8. Maughan BC, Lei L, Cydulka RK. ED handoffs: observed practices and communication errors. *Am J Emerg Med* 2011;29:502-11.
  9. Chang VY, Arora VM, Lev-Ari S, et al. Interns overestimate the effectiveness of their hand-off communication. *Pediatrics* 2010;125:491-6.
  10. Mistry K, Landrigan CP, Goldmann DA, Bates DW. Communication error during post-operative patient hand off in the pediatric intensive care unit. *Crit Care Med* 2005;33:A12.
  11. Maxfield D, Grenny J, Lavandero R, Groah L. The silent treatment: why safety tools and checklists aren't enough to save lives. American Association of Critical-Care Nurses (AACN), the Association of periOperative Registered Nurses (AORN), VitalSmarts; 2011. Available from: <http://www.silenttreatmentstudy.com/>.
  12. Nicotera AM, Mahon MM, Zhao X. Conceptualization and measurement of structural divergence in the healthcare setting. *J Appl Commun Res* 2010;38:362-85.
  13. Allard J, Carthey J, Cope J, et al. Medication errors: cause, prevention and reduction. *Br J Haematol* 2002;116:255-65.
  14. Hannawa AF, Roter DL. TRACEing the roots: a diagnostic tool for retrospective analysis of critical events. *Patient Educ Couns* 2013;93:230-8.
  15. Arora V, Johnson J, Lovinger D, et al. Communication failures in patient sign-out and suggestions for improvement: a critical incident analysis. *Qual Saf Health Care* 2005;14:401-7.
  16. Hannawa AF, Beckman H, Mazor KM, et al. Building bridges: future directions for medical error disclosure research. *Patient Educ Couns* 2013;92:319-27.
  17. Hannawa A. Negotiating medical virtues: toward the development of a physician mistake disclosure model. *Health Commun* 2009;24:391-9.
  18. Mazor K, Reed G, Yood R, et al. Disclosure of medical errors: what factors influence how patients respond? *J Gen Intern Med* 2006;21:704-10.
  19. Mazor K, Simon S, Gurwitz J. Communicating with patients about medical errors: a review of the literature. *Arch Intern Med* 2004;164:1690-7.
  20. Mazor K, Simon S, Yood R, et al. Health plan members' views on forgiving medical errors. *Am J Manag Care* 2005;11:49-52.
  21. Ferrin DL, Kim PH, Cooper CD, Dirks KT. Silence speaks volumes: the effectiveness of reticence in comparison to apology and denial for responding to integrity- and competence-based trust violations. *J Appl Psychol* 2007;92:893-908.
  22. Ohtsubo Y, Watanabe E. Do sincere apologies need to be costly? Test of a costly signaling model of apology. *Evol Hum Behav* 2009;30:114-23.
  23. Risen JL, Gilovich T. Target and observer differences in the acceptance of questionable apologies. *J Pers Soc Psychol* 2007;92:418-33.
  24. Exline JJ, Deshea L, Holesman VT. Is apology worth the risk? Predictors, outcomes, and ways to avoid regret. *J Soc Clin Psychol* 2007;26:479-504.
  25. Hubbard A, Hendrickson B, Fehrenbach K, Sur J. Effects of timing and sincerity of an apology on satisfaction and changes in negative feelings during conflicts. *West J Commun* 2013;77:305-22.
  26. Hannawa AF. Shedding light on the dark side of doctor-patient interactions: verbal and nonverbal messages physicians communicate during error disclosures. *Patient Educ Couns* 2011;84:344-51.
  27. Watzlawick P, Bavelas JB, Jackson DD. *Pragmatics of human communication: A study of interactional patterns, pathologies, and paradoxes*. New York: WW Norton; 1967.
  28. Gallagher T, Hartung P, Gregory S. Assessment of a measure of relational communication for doctor-patient interactions. *Patient Educ Couns* 2001;45:211-8.
  29. Holt-Lunstad, J, Smith, TB, Layton, JB. Social relationships and mortality risk: a meta-analytic review. *PLoS Med* 2010;7:1-20.
  30. Nyqvist F, Pape B, Pellfolk T, et al. Structural and cognitive aspects of social capital and all-cause mortality: a meta-analysis of cohort studies. *Soc Indic Res* 2013 [Epub ahead of print].
  31. Sanbonmatsu DM, Uchino BN, Birmingham W. On the importance of knowing your partner's views: attitude familiarity is associated with better interpersonal functioning and lower ambulatory blood pressure in daily life. *Ann Behav Med* 2011;41:131-7.
  32. Kiecolt-Glaser JK, McGuire L, Robles TF, Glaser R. Psychoneuroimmunology: psychological influences on immune function and health. *J Consult Clin Psychol* 2002;70:537-47.
  33. Weihs KL, Simmens SJ, Mizrahi J, et al. Dependable social relationships predict overall survival in stages II and III breast carcinoma patients. *J Psychosom Res* 2005;59:299-306.
  34. Floyd K, Mikkelsen AC, Tafoya MA, et al. Human affection exchange: XIV. Relational affection predicts resting heart rate and free cortisol secretion during acute stress. *Behav Med* 2007;32:151-6.
  35. Zolnierok KBH, De Matteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care* 2009;47:826-34.
  36. Gilbert KL. A meta-analysis of social capital and health. PhD dissertation. Graduate School of Public Health, University of Pittsburgh, 2008.
  37. Hogan J, Hogan R, Kaiser RB. Management derailment. In: Zedeck S, ed. *APA handbook of industrial and organizational psychology*. Vol 3. Maintaining, expanding, and contracting the organization. Washington, DC: American Psychological Association, 2011.
  38. Dare F. The high costs of nurses' communication challenges. Cisco Internet Business Solutions Groups; 2009. Available from: [www.cisco.com/web/about/ac79/docs/Nurses\\_Survey\\_Report\\_0923FINAL.pdf](http://www.cisco.com/web/about/ac79/docs/Nurses_Survey_Report_0923FINAL.pdf).
  39. Sutcliffe KM, Lewton E, Rosenthal MM. Communication failures: an insidious contributor to medical mishaps. *Acad Med* 2004;79:186-94.
  40. Arroyo A, Segrin C. The relationship between self- and other-perceptions of communication competence and friendship quality. *Commun Stud* 2011;62:547-62.
  41. Merrill AF, Afifi TD. Examining the bidirectional nature of topic avoidance and relationship dissatisfaction: the moderating role of communication skills. *Commun Monographs* 2012;79:499-521.
  42. Lievens F, Sackett PR. The validity of interpersonal skills assessment via situational judgment tests for predicting academic success and job performance. *J Appl Psychol* 2012;97:460-8.
  43. Wright KB, Banas JA, Bessarabova E, Bernard DR. A communication competence approach to examining health care social support, stress, and job burnout. *Health Commun* 2010;25:375-82.
  44. Query J Jr, Kreps GL. Testing a relational model for health communication competence and caregivers for individuals with Alzheimer's disease. *J Health Psychol* 1996;1:335-51.
  45. Jung E. Delineation of a threefold relationship among communication input variables, identity gaps, and depressive symptoms. *Southern Commun J* 2013;78:163-84.



46. Sahl JC, Cohen LH, Dasch KB. Hostility, interpersonal competence, and daily dependent stress: a daily model of stress generation. *Cogn Ther Res* 2009;33:199-210.
47. Alicke MD, Govorun O. The better-than-average effect. In: Alicke MD, Dunning DA, Krueger JI, eds. *The self in social judgment*. New York: Psychology Press; 2005.
48. Sedikides C, Gaertner L, Toguchi Y. Pancultural self-enhancement. *J Personality Soc Psychol* 2003;84:60-79.
49. National Center for Education Statistics. National assessment of adult literacy (NAAL): a first look at the literacy of America's adults in the 21st century (NCES 206-470). Washington DC: Department of Education; 2003.
50. Vangelisti AL, Daly JA. Correlates of speaking skills in the United States: a national assessment. *Commun Educ* 1989;38:132-43.
51. Hawthorne G. Perceived social isolation in a community sample: Its prevalence and correlates with aspects of peoples' lives. *Soc Psychiatry* 2008;43:140-50.
52. Duck S, Rutt, DJ, Hurst MH, Strejc H. Some evident truths about conversations in everyday relationships: all communications are not created equal. *Hum Commun Res* 1991;18:228-67.
53. Baumeister RF, Bratslavsky E, Finkenauer C, Vohs KD. Bad is stronger than good. *Rev Gen Psychol* 2001;5:323-70.
54. Spitzberg BH, Cupach WR. *Interpersonal communication competence*. Beverly Hills: Sage; 1984.
55. Spitzberg BH, Cupach WR. Interpersonal skills. In: Knapp ML, Daly JA, eds. *Handbook of interpersonal communication*. 4th ed. Newbury Park: Sage; 2011.
56. Spitzberg BH. Issues in the study of communicative competence. In: Dervin B, Voight MJ, eds. *Progress in communication sciences*. Vol. 8. Norwood: Ablex; 1987.
57. Spitzberg BH. The dialectics of (in)competence. *J Soc Pers Relat* 1993;10:137-58.
58. Spitzberg BH. The dark side of (in)competence. In: Cupach WR, Spitzberg BH, eds. *The dark side of interpersonal communication*. Hillsdale: Erlbaum; 1994.
59. Spitzberg BH. What is good communication? *J Assoc Commun Admin* 2000;29:103-19.
60. Spitzberg BH. Axioms for a theory of intercultural communication competence. *Annu Rev Engl Learn Teach* 2009;14:69-81.
61. Trower P. Toward a generative model of social skills: a critique and synthesis. In: Curran JP, Monti PM, eds. *Social skills training*. New York: Guilford; 1982.
62. Gallagher KM, Updegraff JA. Health message framing effects on attitudes, intentions, and behavior: a meta-analytic review. *Ann Behav Med* 2012;43:101-16.
63. Keller PA, Lehmann DR. Designing effective health communications: a meta-analysis. *J Public Policy Marketing* 2008;27:17-130.
64. Mazor K, Greene S, Roblin D, et al. More than words: patients' views on apology and disclosure when things go wrong in cancer care. *Patient Educ Couns* 2013;90:341-6.
65. Mazor K, Simon S, Yood R, et al. Health plan members' views on forgiving medical errors. *Am J Manag Care* 2005;11:49-52.
66. Mallinckrodt B, Armer JM, Heppner PP. A threshold model of social support, adjustment, and distress after breast cancer treatment. *J Couns Psychol* 2012;59:150-60.
67. Blanchard VL, Hawkins AJ, Baldwin SA, Fawcett EB. Investigating the effects of marriage and relationship education on couples' communication skills: a meta-analytic study. *J Fam Psychol* 2009;23:203-14.
68. Lanning SK, Brickhouse TH, Gunsolley JC, et al. Communication skills instruction: an analysis of self, peer-group, student instructors and faculty assessment. *Patient Educ Couns* 2011;83:145-51.
69. Beach M, Roter D, Wang N, et al. Are physicians' attitudes of respect accurately perceived by patients and associated with more positive communication behaviors? *Patient Educ Couns* 2006;62:347-54.
70. Blanch-Hartigan D, Andrzejewski SA, Hill KM. The effectiveness of training to improve person perception accuracy: a meta-analysis. *Basic Appl Soc Psychol* 2012;34:483-98.
71. Arora VM, Greenstein EA, Woodruff JN, et al. Implementing peer evaluation of handoffs: associations with experience and workload. *J Hosp Med* 2013;8:132-6.
72. Blanch-Hartigan D, Hall JA, Krupat E, Irish, JT. Can naïve viewers put themselves in the patients' shoes? Reliability and validity of the analogue patient methodology. *Med Care* 2013;51:e16-21.
73. Dunning D, Heath C, Suls JM. Flawed self-assessment: implications for health, education, and the workplace. *Psychological Sci Public Interest* 2004;5:69-106.
74. Kruger J, Dunning D. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. *J Personality Soc Psychol* 1999;77:1121-34.
75. Eisenberg EM, Murphy AG, Sutcliffe K, et al. Communication in emergency medicine: implications for patient safety. *Commun Monographs* 2005;72:390-413.
76. Spitzberg BH, Brunner CC. Toward a theoretical integration of context and competence inference research. *Western J Speech Commun* 1991;56:28-46.
77. Echeverri M, Brookover C, Kennedy K. Factor analysis of a modified version of the California Brief Multicultural Competence Scale with minority pharmacy students. *Adv Health Sci Educ* 2011;16:609-26.
78. Kreps G. Relational communication in health care. *Southern Speech Commun J* 1988;53:344-59.
79. Hannawa A. Negotiating medical virtues: toward the development of a physician mistake disclosure model. *Health Commun* 2009;24:391-9.
80. Garner JT. Making waves at work: perceived effectiveness and appropriateness of organizational dissent messages. *Manag Commun Q* 2012;26:224-40.
81. Nicotera AM, Steele J, Catalani A, Simpson N. Conceptualization and test of an aggression competence model. *Commun Res Rep* 2012;29:12-25.
82. Canary DJ, Spitzberg BH. A model of competence perceptions of conflict strategies. *Hum Commun Res* 1989;15:630-49.
83. Canary DJ, Spitzberg BH. Appropriateness and effectiveness in the perception of conflict strategies. *Hum Commun Res* 1987;13:93-118.
84. Spitzberg BH, Canary DJ, Cupach WR. A competence-based approach to the study of interpersonal conflict. In: Cahn DD, ed. *Conflict in personal relationships*. Hillsdale: Erlbaum; 1994.
85. Andersen PA. The cognitive valence theory of intimate communication. In: Palmer MT, Barnett GA, eds. *Progress in communication sciences*. Vol. 14. Stamford: Ablex; 1998.
86. Wish M, D'Andrade RG, Goodnow JE II. Dimensions of interpersonal communication: correspondences between structures for speech acts and bipolar scales. *J Personality Soc Psychol* 1980;39:848-60.
87. Spitzberg BH, Dillard JP. Meta-analysis, social skills, and interpersonal competence. In: Allen M, Preiss R, Dindia K, et al, eds. *Interpersonal communication: advances through meta-analysis*. Mahwah: Erlbaum; 2002.
88. Spitzberg BH. CSRS: the conversational skills rating scale: an instructional assessment of interpersonal competence (NCA Diagnostic Series, 2nd ed). Annandale: National Communication Association; 2007.
89. Morreale SP. *Assessing motivation to communicate*. 2nd ed. Washington DC: National Communication Association; 2007.
90. Duran RL, Spitzberg BH. Toward the development and validation of a measure of cognitive communication competence. *Commun Q* 1995;43:259-75.

91. Spitzberg BH. Methods of skill assessment. In: Greene JO, Burlison BR, eds. *Handbook of communication and social interaction skills*. Mahwah: Erlbaum; 2003.
92. Spitzberg BH. The Interactive Media Package for Assessment of Communication and Critical Thinking (IMPACCT©): testing a programmatic online communication competence assessment system. *Commun Educ* 2011;60:145-73.
93. Kreps GL. Relational communication in health care. *Southern Speech Commun J* 1988;53:344-59.
94. Spitzberg BH, Cupach WR. Interpersonal skills. In: Knapp ML, Daly JA, ed. *Handbook of interpersonal communication*. 3rd ed. Newbury Park: Sage; 2002.
95. Spitzberg BH, Cupach WR. *Handbook of interpersonal competence research*. New York: Springer Verlag; 1989.
96. Spitzberg BH, Chagnon G. Conceptualizing intercultural communication competence. In: Deardorff DK, ed. *The SAGE handbook of intercultural competence*. Thousand Oaks: Sage; 2009.
97. Smith-Lovin L. Impressions from events. In: Smith-Lovin L, Heise DR, eds. *Analyzing social interaction: advances in affect control theory*. New York: Gordon and Breach; 1988.
98. Venetis MK, Robinson JD, Turkiewicz KL, Allen M. An evidence base for patient-centered cancer care: a meta-analysis of studies of observed communication between cancer specialists and their patients. *Patient Educ Couns* 2009;77:379-83.
99. Smith S, Hanson JL, Tewksbury LR, et al. Teaching patient communication skills to medical students: a review of randomized controlled trials. *Evaluat Health Prof* 2007;30:3-21.
100. Bonnema R, Gonzaga A, Bost J, Spagnoletti C. Teaching error disclosure: advanced communication skills training for residents. *J Commun Healthcare* 2012;5:51-5.
101. Bachman GF, Guerrero LK. Forgiveness, apology, and communicative responses to hurtful events. *Communi Rep* 2006;19:45-56.
102. Exline JJ, Deshea L, Holeman VT. Is apology worth the risk? Predictors, outcomes, and ways to avoid regret. *J Soc Clin Psychol* 2007;26:479-504.
103. Kaldjian LC, Jones EW, Rosenthal GE, et al. An empirically derived taxonomy of factors affecting physicians' willingness to disclose medical errors. *J Gen Intern Med* 2006;21:942-8.
104. Flin, R, Patey, R, Jackson, J, et al. Year 1 medical undergraduates' knowledge of and attitudes to medical error. *Med Educ* 2009;43:1147-55.
105. Peters S, Young K, McCracken C. What do medical trainees think is so difficult about communicating with patients? *Patient Educ Couns* 2011;85:e150-4.
106. Ely, JW, Kaldjian LC, D'Alessandro D. Diagnostic errors in primary care: lessons learned. *J Am Board Fam Med* 2012;25:87-97.
107. Patey R, Flin R, Cuthbertson B, et al. Patient safety: helping medical students understand error in healthcare. *Qual Safety Health Care* 2007;16:256-9.
108. Hickson G, Pichert J, Webb L, Gabbe S. A complementary approach to promoting professionalism: identifying, measuring, and addressing unprofessional behaviors. *Acad Medicine* 2007;82:1040-8.
109. Street RL, de Haes HCJM. Designing a curriculum for communication skills training from a theory and evidence-based perspective. *Patient Educ Couns* 2013;93:27-33.
110. Query JL Jr, Wright KB, Bylund CL, Mattson M. Health communication instruction: toward identifying common learning goals, course content, and pedagogical strategies to guide curricular development. *Health Commun* 2007;21:133-41.
111. Fouad NA, Grus CL, Hatcher RL, et al. Competency benchmarks: a model for understanding and measuring competence in professional psychology across training levels. *Training Educ Prof Psychol* 2009;3:55-26.
112. Kaslow NJ, Rubin NJ, Forrest L, et al. Recognizing, assessing, and intervening with problems of professional competence. *Prof Psychol* 2007;38:479-92.
113. Berkhof M, van Rijssen H, Schellart A, et al. Effective training strategies for teaching communication skills to physicians: an overview of systematic reviews. *Patient Educ Couns* 2011;84:152-62.
114. Lane C, Rollnick S. The use of simulated patients and role-play in communication skills training: a review of the literature to august 2005. *Patient Educ Couns* 2007;67:13-20.
115. Smith S, Hanson J, Tewksbury L, et al. Teaching patient communication skills to medical students: a review of randomized controlled trials. *Evaluation Health Prof* 2007;30:3-21.
116. Lee C. Managing perceived communication failures with affordances of ICTs. *Comput Hum Behav* 2010;26:572-80.
117. Cook D, Brydges R, Hamstra S, et al. Comparative effectiveness of technology-enhanced simulation versus other instructional methods: a systematic review and meta-analysis. *Simul Healthc* 2012;7:308-20.
118. Stievano A, Jurado M, Rocco G, Sasso L. A new information exchange system for nursing professionals to enhance patient safety across Europe. *J Nurs Scholarsh* 2009;41:391-8.
119. Tazelaar MJA, Van Lange PAM, Ouwerkerk JW. How to cope with noise in social dilemmas: the benefits of communication. *J Personality Soc Psychol* 2004;87:845-59.
120. Keith N, Frese M. Effectiveness of error management training: a meta-analysis. *J Appl Psychol* 2008;93:59-69.
121. Mannion R, Braithwaite J. Unintended consequences of performance measurement in healthcare: 20 salutary lessons from the English National Health Service. *Intern Med J* 2012;42:569-74.