Pressures to "Measure Up" in Surgery

Managing Your Image and Managing Your Patient Social Pressures and Clinical Judgment

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Objective: To identify pressures created by surgical culture and social setting and explore mechanisms for how they might impact operative decision-making.

Background: Surgeons apply judgments within a powerful social context and are constantly socialized and influenced by communicative exchanges. In this study, the authors characterized the nature of the surgical social context, focusing on the interactions between external social influences and the cognitive ability of the surgeon to respond to uncertain, unexpected, or critical moments in operations.

Methods: The authors reviewed the sociological and psychosocial literatures to examine concepts in identity construction, socialization process, and image management literatures and synthesized a conceptual framework allowing for the examination of how social factors and image management might impact surgical performance.

Results: The surgeon's professional identity is constructed and negotiated on the basis of the context of surgical culture. Trainees are socialized to display confidence and certainty as part of the "hidden curriculum" and several sociocultural mechanisms regulating "appropriate" surgical behavior exist in this system. In the image management literature, individuals put on a "front" or social performance that is socially acceptable. Several mechanisms for how image management might impact surgical judgment and decision-making were identified through an exploration of the cognitive psychology literature.

Conclusions: Sociopsychological literatures can be linked with decision-making and cognitive capacity theory. When cognitive resources reach their limit during critical and uncertain moments of an operation, the consumption of resources by the pressures of reputation and ego might interfere with the thought processes needed to execute the task at hand. Recognizing the effects of external social pressures may help the surgeon better self-regulate, respond mindfully to these pressures, and prevent surgical error.

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Surgical error prevention has been placed high on the priority list among surgical educators and licensing bodies to ensure patient safety and maintain public trust in the surgical profession.[1] Emphasis has shifted away from individual causes of error toward structural issues leading to errors in the health care system.[2–5] Although this has led to significant improvements in patient care, we should not lose sight of the role the individual plays within the system. Current work on individual causes of error focuses largely on diagnostic error and cognition, with particular emphasis on cognitive error or heuristics and biases that lead to poor judgment or decision-making. The individual, however, is embedded within a complex sociocultural milieu, rarely operating in isolation or immune from the influences inherent in such a system.[6–10] We propose that exploring factors influencing decision-making in the naturalistic or real-world environment and understanding how they might impact the purely cognitive processes of the individual is the next essential step toward developing an understanding of the complex nature of medical and surgical judgment.

A recent study exploring the nature of surgical judgment in the operating room described a phenomenon "slowing down when you should" to capture the transition from a relatively routine mode of practice to one that is more effortful. It occurred when surgeons were confronted by critical or unexpected events or situations that involved uncertainty.[11] The phenomenon of "slowing down" was not only recognizable by surgeons themselves but was also observable to outsiders, as surgeons withdrew attention from other tasks (eg, dropping out of concurrent conversations, asking for the music to be turned off) to focus on the critical event.[12] The surgeon's ability to slow down appropriately by recruiting additional cognitive resources to manage these situations was suggested to be key to expert intraoperative performance. Reflecting on their operative performance, surgeons identified several social factors having an influence on their ability to respond during these critical, unexpected, or uncertain moments.[13] Many surgeons in this study discussed issues such as hierarchy, image, and "ego," and claimed that these affect day-to-day judgment and decision-making. For instance, 1 senior surgeon, insecure by his waning skill level and wanting to appear competent, said he was distracted by these interfering thoughts as the bleeding got out of control and he was reluctant to ask for help.

Although both cognitive factors (eg, cognitive heuristics,[12,14] fatigue,[11] and distractions[15]) and sociocultural factors (eg, surgical culture, socialization, hidden curriculum)[16,17] have been studied in the surgical setting, the interaction between them and how it affects individual performance has largely been neglected in the literature. Throughout this aforementioned study of surgeon judgment and decision-making, it became clear that there was a need to explore these external or "social factors" that seemed to affect the surgeon's ability to respond appropriately to these critical, unexpected, or uncertain moments.[13] Surgeons make decisions and apply judgments within a powerful social context working in the setting of a larger team and are constantly socialized and influenced by the social dynamics of that team. Yet, surgeons are often unaware of these influences or have an inadequate understanding of the nature of these forces and an insufficient language to reflect on them, describe them, or teach coping strategies to manage them. More importantly, the implications of this issue permeate far beyond interrogating the situated heuristics

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or cognitive processes of decision-making. The inattention within the surgical literature to the social and cultural context of surgery in which the individual surgeon lives and works has been cited as a key barrier to enacting changes within surgical education, evidence-based practice, and the effective practice of surgical teams in general.[10,18–20] We present this review of surgeon identity, the surgical culture, and the consequent social pressures experienced by surgeons in the course of their daily activities as a way of moving toward an understanding for how these factors may impinge upon surgical decision-making in particular. This article brings together relevant literatures from the psychosocial and sociological disciplines and provides a conceptual framework for understanding how judgment might be affected by sociocultural factors. It provides further background to an existing research program pursuing the nature of and factors that influence surgical judgment.[11,13,21–23]

To begin, we explore how surgical identity and surgeon behavior is constructed and negotiated within the surgical culture. We review the socialization process in surgical training and the institutional environment in which the trainee is inculcated, focusing on the "hidden curriculum" where trainees learn to display confidence and certainty. We also examine the sociocultural mechanisms of regulating "appropriate" surgical behavior existing in surgical environments. Finally, we examine the consequences of these regulatory mechanisms through a description of the impression management literature that describes how individuals put on a "front" or social performance to create a certain image of themselves that is socially acceptable. Although we focus specifically on *surgical* identity issues in this article, the link between sociocultural pressures, medical judgment, and error are no doubt relevant to a broader medical audience.

IDENTITY CONSTRUCTION AND THE IMPORTANCE OF CONTEXT

The underlying assumption of sociological and social psychological approaches is that identity, and thus behavior, is *constructed*, *reconstructed*, and *negotiated* during communicative exchanges between individuals and their social environment.[24–27] Social identity theories outline how individuals adopt shared attitudes and identify with social groups. Social identity is an aspect of an individual's self-concept that derives from the individual's membership in a group.[28] An individual might hold multiple identities throughout life, some acquired and others newly formed, including sex, ethnicity, social class, family role, and profession, which may synergize or be activated in different situations.[29]

Professional Identity

The professional identity literature builds upon social identity theories to understand how individuals with primary personal identities (eg, gender, ethnicity, class) take on professional status. Workplace organizations produce cultures that, despite continuous change, often remain unwelcoming to outsiders, so that new members must conform to succeed. Professional identity formation has been described by Dryburgh as a 3-stage process involving adaptation to professional culture, internalization of professional identity, and demonstration of solidarity with other professionals.[30]

The Surgical Identity

In the surgical culture, members have long prided themselves in fitting the stereotype of the "archetypal hero," characterized by "boldness of action" and "a take-charge machismo" in the operating theater.[31] Adjectives that are generally used to describe surgeons include quick, decisive, active, certain, heroic, and optimistic.[31] Ideal-type descriptions of the surgeon have influenced our selection and training processes for many years. For example, "type" approaches have been informally and often subconsciously used to screen candidates for surgical programs and to informally guide teaching approaches favoring the perpetuation of these characteristics in training programs. This "hidden curriculum" is based on the principle that these attributes are *adaptive* for mental determination in one's ability to carry out complex surgery and for making rapid, critical decisions in the face of uncertainty and time pressure.[8]

Typically, the surgical education literature has approached surgical identity from a psychological perspective, which focuses on the identification of fixed traits that make up surgical identity and contribute to surgical competency. Some investigators have attempted to characterize "the surgical personality" and have found that surgeons form the most distinct and consistent group among physicians, with 60% to 70% sharing similar temperament and personality profiles.[32–35] However, it is worth noting that in the social psychology literatures, theories on identity have shifted away from stable and fixed "traits," toward the prevailing view that the characteristics that make up an individual's self-concept and image are acquired in a context-dependent manner.[24,25,27] For instance, new members take their place among the fellowship of surgeons by acting like other surgeons—perhaps even exaggerating it—to belong.[36] This poses challenges for all trainees but especially for those who are not part of the mainstream (cultural/religious minorities, women in predominantly male environments, visible minorities in predominately white settings).[29,37–39] For instance, gender issues and identity dissonance might arise for some women in surgery when the qualities traditionally praised in a surgeon are culturally associated with masculinity: power; hardness; invulnerability; independence; hierarchism; and an intense, narrowly focused drive.[17] It is reasonable to postulate that social pressures to conform to mainstream ideals and practices might be amplified among individuals experiencing identity dissonance within the surgical culture. Furthermore, although it could be argued that the increased prevalence of women in surgery may be contributing to culture shifts in mainstream notions of what constitutes an ideal surgeon, there is also evidence that surgery is still a profession that values and promotes "masculine" type qualities and behaviors of quickness, certainty, and boldness of action.[16,17] The ongoing valuing of these characteristics suggests that an increase in female participation in a given profession is not enough to counter or eliminate historically entrenched gendered processes.[40–43]

SOCIALIZATION AS A PROCESS

The concept of the "hidden curriculum"—what is taught in a curriculum implicitly or silently that is not part of the explicit curriculum—is well documented. A brief overview is presented here as an integral piece of the larger sociological lens contributing to our understanding of external social influences on the individual surgeon's cognition. Socialization refers to the process whereby people new to the group gradually learn the attitudes, values, and behaviors consistent with the desired qualities of the group through constant interaction.[32,44,45] For instance, in professional socialization, trainees are broken down and remade into the image of the organization.[39]

Surgical socialization typically stresses certitude, decisiveness, and confidence.[46] Mechanisms of socialization during medical education include rewards for displaying certainty and criticism when students display a lack of certainty.[16,47] Haas and Shaffir conclude that the process of professionalization involves, above all, the successful adoption of a "cloak of competence" even when students do not feel competent, to mask uncertainty and consolidate status.[48] Individuals learn to walk, talk, and "do surgeon" and this posturing is essential for the assertion of professional authority consistent with the culture. At the same time, this gradually changes their own self-perceptions[36,46] and possibly encourages the movement toward a self-fulfilling prophecy where one "becomes" the identity they are

performing.[49] Broadhead[50] explained that exemplification of professional identity qualities occurs as a result of frequent experiences of engaging in a confident display during medical training until these characteristics are internalized.[50] Also, Erickson[51] found that trainees model the communication behaviors displayed by their preceptors[51] and are highly influenced by the chiefs of surgery who are most responsible for establishing a specific cultural style.[16] This operates as a hidden curriculum where surgical characteristics are promulgated through the structural context of the apprenticeship system,[10,19] the implications of which are the possible reproduction of surgical identities rather than the production of "new" surgical identities. Later, career progression and rising in the surgical hierarchy likely emphasize the display of valorized surgical behaviors.[38] Indeed, the demands on a surgeon to exhibit certainty increase with responsibility and reputation.[16]

Ongoing pressures from the surgical culture offer informal, yet powerful mechanisms of self-regulation motivating surgeons to avoid disesteemed reputations. A system of rewards and penalties reinforces behavior expectations.[37–40] The fear of penalty,[52] the pressure of public opinion,[53] the fear of losing face,[54] and the threat of embarrassment serve to maintain cultural norms and to constrain social behavior.[55] Belonging to a fellowship of surgeons involves surgeons monitoring, comparing, and judging one another's competency.[56] Representation of colleagues' behavior and misbehavior spreads through gossip, snide remarks, and casual comments in the operating rooms, wards, hallways, and change rooms accentuating and enforcing group standards.[16] The surgical image is communicated through jokes with themes glorifying themselves as "decisive, powerful, and 'masculine'" while mocking the less interventionist internists as "indecisive, weak, and 'feminine.'"[31] Also, members of the profession can be awarded desired reputations (eg, the exemplary surgeon, the "go-to guy," the "surgeon's surgeon") or labeled with disesteemed characteristics (eg, the incompetent buffoon, the hesitant surgeon, the hack).[16] These informal social exchanges serve as powerful motivators moving people toward admired behaviors and away from those that are disapproved.

IMAGE MANAGEMENT

Actions and behaviors are determined by a combination of "what we think of ourselves" and "what we think others think of us."[29] The former is an internalized identity developed through group membership and the socialization process described earlier. The latter is relevant to external social pressures in the moment to manage one's image and impression on others, which will be the focus of our discussion here.

Goffman, in his book *The Presentation of Self in Everyday Life*, underscores the importance of performance in identity formation.[57] He describes how any face-to-face interaction can be interpreted as a theatrical performance, using the metaphor of "front stage" and "back stage" to make this point. Individuals can be considered "actors" playing roles in social situations, learning to follow expected social scripts for behavior in different situations. When an individual or social actor takes on an established social role, usually a particular "front" has already been established.[57] A "front" can be defined as a social performance intended to impress others. Image management involves the actor providing the audience with an impression consistent with his desired goals, by manipulating the information he wants to convey.

To be skilled in image management, we must monitor the responses of others to the identity or image we are projecting. Cooley, who coined the term "looking-glass self" describes how we project an image toward an audience and in turn are able to see impressions of ourselves reflected back through the reactions of others.[58] We then interpret how others view us and often manipulate behavior to confirm what we think others think of us. In this way, we might not distinguish between a public image held by others and a private image held by ourselves. Indeed, Higgins et al[59] have argued the private standards we hold ourselves to are little more than the internalized opinions of meaningful others.[59]

From the literature, then, we more clearly see that the effects of sociological and social psychological forces are informal, often implicit, and part of a "hidden" curriculum.[60] Although largely hidden, it is a powerful pedagogical phenomena that instills certain qualities into trainees and professionals at every stage of their career. For surgeons, these socialization influences can take place on 2 levels—forces that are "internalized" and forces that are "situational."[29] Internalized standards of certainty and decisiveness "taught" and enforced during surgical training can influence actions across a variety of situations. A surgeon in the face of uncertainty in the operating room might feel pressure internally to be certain, having witnessed "good" and respected surgeons emulate this behavior in their past. Anxiety that comes with "identity dissonance" might be experienced, as they feel uncertain in their ability to adequately deal with the situation. Second, the presence of others in the immediate social context and the interactions between surgeon and "other" might create situational and temporary pressures to perform a certain way—confident and certain. This pressure perhaps increases determination to "perform" and succeed, but might make it more difficult to admit uncertainty and call for help. In the face of uncertainty then, there likely exists a tension felt by the surgeon between needing to "appear" certain and actually "being" uncertain.[61–63] The implications of this tension and how it might impact surgical judgment and decision-making are explored in the following section.

IMPLICATIONS

With a recognition that pressures such as those described earlier exist for surgeons, the next step is to explore how these pressures might impact surgeon judgment and decision-making and the possible mechanisms of this interaction. As a first step, we will introduce to the reader the relevant cognitive psychology literature to understand the basis for how surgeons think in the course of their daily practice.

A well-recognized theory in the psychology literature is the capacity model of attention. Each individual functions with a limited amount of attention or a limited capacity for paying attention.[11,64] It is not possible, therefore, for an individual to pay attention to all external things in his environment. According to this cognitive capacity theory, once a threshold is reached, individuals are unable to attend to new stimuli or are required to recruit cognitive capacity or attention from existing activities to reinvest in the new stimulus. An individual's ability to not only attend to pertinent stimuli but also comprehend their meaning both in the present and in light of future goals is key for expert performance and is termed "situation awareness."[65] This state of maintaining an accurate picture of the environment increases the likelihood that surgeons will respond to changes or critical events as necessary, transitioning from a routine mode of functioning to a more effortful mode of functioning—slowing down when they should.[11] Failure to accurately monitor one's environment—an effortful activity-–or failing to detect a cue because of lack of capacity, might lead to a failure of slowing down and surgeon error. A fatigued surgeon with decreased cognitive capacity,[64] for example, may fail to recognize an important cue during a procedure in the operating room. Or, a surgeon may be cognitively "tricked" and lose situation awareness believing that a structure she comes across during a gall bladder procedure is the cystic duct when in fact it is the bile duct, a structure that should be preserved.

Many activities performed by surgeons, through years of training and practice, have become automatic, falling under the routine mode.[64] Operations and activities that once took a substantial amount

of effort and attention as a trainee and junior surgeon can be done with minimal effort for experts. It is not uncommon in this routine mode to see the surgeon multitask as he operates, engaging in active conversations, teaching, and listening to music throughout the procedure.[22] However, the ability of the surgeon to transition into the more effortful mode—managing his attentional resources and focusing his attention on the important activities when necessary—is crucial and this maintenance of situation awareness is an effortful activity.[11,13,21,23,64] Furthermore, thoughts, feelings, and emotions during any given moment "eat up" a portion of this attention leaving less cognitive reserve or spare capacity available to deal with the immediate event or anticipate future events.[64,66] Therefore, aside from the impact that sociocultural pressures might have on the surgeon's willingness to admit uncertainty or call for help, a further mechanism by which the surgeon's judgment might be affected by the socio-cultural pressures is through competition of their attentional resources by the emotions, thoughts, and feelings evoked by those pressures associated with reputation. As 1 participant surgeon in the aforementioned "slowing down" study stated, "my efforts during these moments of crises were consumed with the anxiety I was feeling and intermixed with feelings of inadequacy, uncertainty, reputation and ego."[67] When cognitive resources are reaching their limit during these critical, unexpected, and uncertain "slowing down" moments, further consumption of resources by the internal and external pressures brought on by the sociocultural factors might interfere with the thought processes, the monitoring activities, and the action execution of the task at hand. Together, the literatures on identity construction,[58] socialization,[16,32,44,45,47] and impression management[58] provide a valuable addition to the previous literatures on expertise, attention, effort, and situation awareness for informing further the phenomenon of "slowing down" in the context of expert practice.

Although an understanding of the maladaptive effects of surgical culture is necessary, it is also likely that this has been socialized for a reason; there are likely adaptive effects of feeling confident that enable surgeons to perform effectively.[68,69] Surgeons operate in stressful situations and do major invasive procedures, some with high risk. The belief that they can be successful contributes to their being successful in the positive feedback loop of self-efficacy.[68,70] As self-efficacy or the belief in one's capabilities to perform increases, so does successful execution of the task. High levels of self-efficacy cause more perseverance in the face of obstacles. Yet, with an understanding of both the sociological and the psychological literatures, we can further explore why social pressures to perform exist, how and what constitutes social pressures in-context, what these pressures feel like, what the effects look like in clinical practice, and how surgeons can (and often do) achieve balance between confidence, uncertainty, image, and performance. Uncertainty is inherent within any professional practice and will always remain.[47] Recognizing the effects of surgical socialization and pressures of image management may help the individual surgeon self-regulate their responses in the face of such pressures.[66,71,72]

Awareness of these social pressures and their effects on individual judgment and decision-making promotes an activity referred to as "mindful practice." Epstein defines this as a "conscious and intentional attentiveness to the present situation—the raw sensations, thoughts, and emotions as well as the interpretations, judgments, and heuristics that one applies to a particular situation."[73] It has been suggested that engaging in mindful practice in surgery can promote an appropriate and mind-present *response* to critical events rather than an inappropriate and scattered *reaction* driven by anxiety.[66] Freeing up cognitive capacity from the anxieties of uncertainty, reputation, ego, and inadequacy might allow cognitive resources to be fully directed toward a resolution of the complex case at hand. Further exploration of these issues in our profession is required as we seek to develop a framework for understanding what factors—both internal and external[13]—contribute to the surgeon's ability to self-regulate and remain safe in operative practice.

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