

Journal of the American College of Dentists

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and leadership in dentistry

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- E. To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;
- F. To encourage the free exchange of ideas and experiences in the interest of better service to the patient;
- G. To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;
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Cover photograph: "Can you hear me?"

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FROM THE EDITOR

MORAL INCONTINENCE

Conscience is nothing more than the voices of those we respect being internalized as a guide.

My table partner at our school's Omicron Kappa Upsilon dinner was an urbane stepfather of one our outstanding grads. We chatted about his start-up computer company. I eventually worked my interest in ethics into the conversation. My acquaintance perked up immediately and asked what I thought about Dr. Harrington. "Dr. Who?" I mumbled. "You know that dentist in Oklahoma who infected all his patients for years with dirty equipment." He obviously knew more about this than I did, although we do not know yet the full extent of Dr. Harrison's conspicuous breaches of sanitary conditions.

Then the tough question: "You're an ethics professor. Tell me, if Harrington had wanted to, could he have stopped himself from practicing in an irresponsible way that put so many patients at risk? I know he knew he was doing something wrong. Is there such a thing as failure of will power?"

I had never thought of that either. But I knew right away what the answer is. I quickly ruled out ignorance, greed, and a perverse negative attitude toward humankind. Multiple years of careless mistakes did not sound right either. The dentist in question probably did not need to be taught ethics. He was just morally weak.

The technical term for this is incontinence. Unfortunately today, the term is used most often in connection with not being able to keep one's hands at home or bad bladder control. The full meaning

of incontinence is inability to manage urges one knows are inappropriate. It seems to be a common affliction among politicians these days. Smokers, overeaters, and some folks in the financial industry suffer from it.

The general view in ethics is that knowing what to do is sufficient. At least that is where our responsibility for others is too often thought to end. Our educational programs in ethics, our editorials, and our aspirational codes of conduct seem to work from this assumption. It would be so easy if all we needed to do to fix the problem was to name it. There has been a small army of academics hard at work on the naming project for several centuries.

Incontinence, in its many forms, is actually very common. Oscar Wilde and a few others get credit for the quote: "The only thing I can't resist is temptation." If I had any way to collect on this, I would wager that every reader has acted in a manner they knew was not quite right—today. Not big ones and not so as to be likely to be caught, but something here and something there we would like to take back if we were acting on our better natures. So we were going a bit over the speed limit, and if there had been an accident and the full facts came to light, we could be looking at manslaughter. But nothing happened. Yes, we left the grandchild in the bathtub while we stepped out for just a

second to get the phone, but everything was fine. This is called moral luck. And we all count on it.

I asked my well-informed table companion what he thought about Deamonte Driver. Now it was his turn to say “Who?” I explained that a boy had died in the Washington, DC, area from a virulent sinus infection of oral origin who might have been saved had he received timely treatment in either a private office or the safety net system. No response from my companion.

This started me to wondering. Deamonte Drive was a hot topic in the dental community for months. The oral surgeon near Tulsa is not. In my sample of one very savvy private citizen, the order of interest was reversed. What might be involved here? There have been no named victims in the most recent case. But perhaps there is more. In the case of Deamonte Driver there was no bad guy—it was the system that failed. It is easier to rage against the system. Many in the oral health community even used this as an opportunity to advocate for more resources. We are much slower to judge our colleagues.

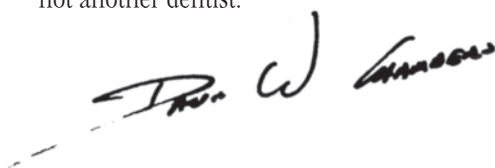
Incontinence is a feature of human nature, and one that seems to be resistant to education. Enforcement drives it underground. Yet it is obvious that it cannot be overcome by sheer will power. After all, that is what incontinence is—lack of will power.

The answer comes in recognizing that, individually, we are pretty much hopeless victims of incontinence. It does no good whatsoever to wag our fingers

at others and say they should have tried harder. Okay, it does some good—it makes us feel morally superior. The antidote is to admit that morality is not a private matter. There is something more than people just hearing about doing the right thing. We have to help each other do it.

Moral failing always involves others. If Dr. Harrington had not allowed unsterile conditions that placed patients at risk for infection (if he had just had bad thoughts about it), he would still have his license and I would not be writing this editorial. Falling down on our professional responsibilities is always a community matter that has consequences for others. Perhaps protecting against incontinence is also a professional responsibility. We can help our peers. Conscience is nothing more than the voices of those we respect being internalized as a guide. Dr. Harrington might have welcomed some colleagues speaking out to build his conscience.

Combating moral incontinence is a public job. We must speak out and confront wrong when we see it. Failure to do so is also incontinence. Somebody had the courage to stop a dentist in the suburbs of Tulsa before he exposed more patients to unknown and unnecessary severe health risks, but it appears it was not another dentist.



The dentist in question probably did not need to be taught ethics. He was just morally weak.

Writing off Copayments

Roberto Amato

ABSTRACT

Professions are accorded respect and autonomy by society in exchange for their willingness to enforce their own professional standards. A case is discussed where an associate discovers that the principal dentist is routinely not collecting the 20% copayment required by insurance contracts. Analysis shows that this practice is unethical, illegal, and unprofessional. Practical advice is offered for how such an issue should be addressed.

Regardless of personal feelings, society has a tendency to place labels on individuals. One specific label, which is often sought by many is a professional title. In a broad sense, a professional is one who has gained in-depth understanding and knowledge of a particular topic that is unattainable to the masses. The level of comprehension, that the professional has obtained is verified by a governing body. Once this title is obtained, the public has a sensible reason to believe that the professional is well trained in their designation and will perform their duties for those who seek their expertise with integrity and compassion and in an ethical manner. Dr. Jos Welie, professor at the Center of Health Policy and Ethics at Creighton University Medical Centre, Omaha, Nebraska, explains that the title of professional is ultimately granted by the public; therefore, each professional must exist to serve the public's interest (Welie, 2004).

Based on this definition of professionalism, dentists are potentially deserving of the professional status. Dentists are oral health doctors focused on diagnosing, treating, and preventing a wide range of disorders of the oral-facial complex. Additionally, in order to practice in Canada, one must be licensed in full accordance with the regulations, thus proving merit of the dentist's professional title. Within any profession, there are bound to be situations that require ethical and moral reflection, and dentistry is no exception.

THE ISSUE: REPORTING INAPPROPRIATE Writing Off of Copayments

Throughout the course of one's career it is reasonable to assume that ethical or professional dilemmas will arise. When an actual predicament arises, ethical or professional issues must be confronted. One particular prominent issue which plagues dentistry involves the collection of copayments.

For the purpose of this essay, the following issue will be examined: A recent dental graduate becomes a new associate at a dental practice. The financial terms of the verbal agreement with the principal dentist to provide the associate with 40% of the fees collected from the patients. However, after many months the associate notices a paycheck which does not reflect the anticipated amount. It is discovered that the office is not collecting the 20% copayment and routinely writing off the balance. This essay will identify the professional, ethical, and legal issues involved for oral healthcare providers from a Canadian



Mr. Amato is a student at the Schulich School of Medicine & Dentistry, University of Western Ontario. This essay was awarded the Ozar-Hasegawa Prize for student ethics writing in 2011. Readers may wish to compare this perspective from a student with the views of three dental ethicists on the same case that appeared in this journal in the second issue in 2011.

viewpoint and present a professional solution for the associate dentist.

WHY WRITING OFF COPAYMENTS IS ETHICALLY WRONG

The Royal College of Dental Surgeons of Ontario (RCDSO) outlines core values and a code of ethics for all Ontario dentists to follow (RCDSO, 2004). The major ethical and professional issues involved in this scenario are autonomy, beneficence, nonmaleficence, justice, and integrity.

The autonomy of the patient is being compromised since the front desk is regularly writing off copayments without making an honest attempt to collect the remaining balance from insured patients. If patients are not being told to pay their portion of the fees, they are not given an option to make their own decision to pay or not to pay. It may be that patients do not understand their insurance coverage and are being misled to believe that they are 100% covered for treatments.

When the copayment is not collected it saves the patient money and the principal dentist views this as an act of beneficence. He or she may justify this action as relieving some of the financial burden to patients. Therefore, they will remain content and return for further treatment. The beneficence to patients is quite large in this circumstance since they can always receive the best treatment available without having to worry about the financial burden of top-notch health care. However, the short-term benefit to the patient is not without consequence.

Harm is being caused to other dentists in the community, the associate, the

insurance company, and uninsured patients. Therefore, the principal dentist is displaying acts of maleficence. Additionally, by causing harm to those groups and individuals the principal dentist is responsible for the injustices which are occurring. Other dentists in the area, who follow the guidelines, may be falsely portrayed by patients as selfish and “money hungry.” The associate in this scenario is not being properly compensated. Unfortunately, without a written agreement or a discussion of practice philosophies, misunderstandings such as these are likely to occur. The harm to society may materialize downstream with increased dental fees and higher premiums resulting in dental plans being overly costly for employers. Additionally, uninsured patients are presumably paying 100% of the dental fees while the dentist only collects 80% from insured patients.

Ultimately, the principal dentist is exhibiting a lack of integrity. This behavior is not trustworthy because it deceives both the insurance companies and the associate. Furthermore, he or she is displaying lack of fairness towards uninsured patients. One may make the claim that it is not the primary intention of the principal dentist to cause any harm; yet, as a practicing dentist, it is his or her responsibility to be aware of the implications of such actions. In this particular scenario, there is no justifiable excuse since the office is routinely writing off copayments.

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WHY WRITING OFF COPAYMENTS IS LEGALLY WRONG

Although the principal dentist is behaving in an unprofessional manner, causing an injustice to others, he or she is also legally liable for the actions. In Ontario, according to the Dentistry Act, 1991, under the RHPA (Regulated Health Professions Act), this is professional misconduct (RCDSO, 2005). The failure of the principal dentist to attempt to collect the copayment from the patient violates Section 2, Paragraph 34 of the Dentistry Act, 1991, and as such, the dentist is subject to investigation and possible legal action. Under this act, “the fee charged is to be the fee that the dentist expects to collect.” Hence, the legal obligation of the dentist is to inform the insurance company that he or she is willing to accept 80% of the fee as full payment for those specific procedures.

It is evident there is no reasonable attempt to collect the copayment. Therefore, in addition to professional misconduct, the dentist is also committing insurance fraud. When a dentist commits an act of this nature he or she is subject to disciplinary action by the RCDSO which may include complete loss or temporary suspension of dental registration and legal action by the insurance companies for committing insurance fraud (Ontario Dental Association, 2010).

Additionally, the associate is legally required to report the principal dentist for professional misconduct as outlined in the RHPA Dentistry Act of 1991 (RCDSO, 2004). Therefore, the associate may be subject to similar disciplinary actions as the principal dentist for being aware of this misconduct and not following the mandatory regulations.

WHY WRITING OFF COPAYMENTS IS UNPROFESSIONAL

The RCDSO recognizes that society has granted a certain level of trust to all dentists. Therefore, the RCDSO has devised a code of 15 ethical principles which hold Ontario dentists to a professional level of ethical conduct. In this particular scenario, the principal dentist is in major violation of codes 2 and 6 and minor violation of code 11.

- Code 2: Be truthful, obey the law, and provide care with respect for human rights and dignity and without discrimination.
- Code 6: Provide unbiased explanation of options with associated risks and costs, and obtain consent before proceeding with investigations or treatment.
- Code 11: Accept responsibility for the care provided by authorized dental personnel.

Code 2 clearly states “obey the law.” By routinely writing off the copayment, the principal dentist is in direct violation of the Dentistry Act of 1991 as previously explained. This is professional misconduct and insurance fraud. The RCDSO can subject the dentist to disciplinary action and the insurance company can pursue legal action since the dentist misrepresented the full amount which he or she intended to collect. Also, Code 6 is being broken since the dentist is not providing an unbiased explanation of the true costs. Given that the dentist is not collecting the copayment from certain patients, the true costs is only 80% of what is claimed.

Code 11 requires the principal dentist to be fully aware of any acts of misconduct which take place in his or her office. Technically, it is not clear whether the front desk is writing off the 20% copayment with or without the principal dentist’s knowledge. Nevertheless, according to Code 11, the principal dentist is still liable for these actions.

THE OBLIGATION TO ACT

When any dilemma or ethical situation arises, all members involved have a choice to make: to act or not to act. However, before jumping to any conclusions, a careful ethical analysis must first take place. A practical decision-making tool for such ethical dilemmas is the UCLA Decision Making Model (Atchinson & Beemsterboer, 1991). The following steps are involved: (a) identify the ethical problem, (b) collect information, (c) state the options, (d) apply ethical principles to the options, (e) make the decision, and (f) implement the decision. The main ethical dilemma involved is justice versus beneficence. By not collecting the copayment, a great injustice is being suffered by many parties as previously outlined, and this must be weighed against the beneficence to patients who are not being fully billed. The associate ought to be absolutely certain as to any wrong doings which are actually occurring. If the front desk is consistently writing off the 20% copayment, this must be verified prior to proceeding with any action. In the associate’s particular position the fundamental choices are to do nothing, report the principal dentist to the RCDSO immediately, speak with the principal dentist in a professional manner regarding this discovery, or any combination of these actions.

One can reasonably assume that the associate, as a recent graduate, has little business experience. It would be quite easy to not act on the information recently discovered and to turn a blind eye to the situation. This would avoid conflict with the principal dentist, along with possible legal hearings in which the associate may be called to testify. The risk of future tension in the dental community may be a problem the associate does not wish to experience.

According to the RHPA Act, 1991, there are mandatory reporting guidelines in place which require professionals to inform authorities when they have reasonable knowledge of a colleague who is displaying professional misconduct. By the letter of the law, in Ontario, the associate has 30 days to file a report with regard to the professional misconduct involving the principal dentist. The Procedural Code ensures that no action can be taken against the associate for filing the report with honest intentions. Although this option of immediately reporting the principal dentist is following stringent adherence to the law, it is not necessarily the best, primary option. Being part of the dental profession comes with a sense of camaraderie; therefore, one must be fairly certain of all of the facts before acting.

The approach I would follow, and recommend for the associate, involves an initial private discussion with the principal dentist. The principal dentist deserves the respect of being spoken to before any further action is taken with regard to this particular scenario. After all, it may be possible that the principal dentist is unaware that the front desk is normally not attempting to collect the copayment. The best approach is to have a rational, calm, and informative discussion with the principal dentist, explaining the professional implications, as well as the legality of the principal dentist's actions, the downstream implications to dental insurance, the cost to patients, and the associate's wage. The principal dentist has an obligation to uphold the RCDSO code of ethics and follow the Dentistry Act of 1991 under the RHPA. If the principal dentist is a reasonable person, he or she will understand the associate's concern for justice and realize the ramifications of these faulty actions. In the event that the principal dentist is unreceptive to the associate's concern the associate should

respectfully explain to the principal dentist that there is no choice but to file a report per the mandatory reporting requirements of the RHPA Act of 1991. After careful analysis of the ethical issues involved, the actions of the principal dentist are unfair to all parties involved and outweigh the beneficence to selected patients.

The outcome of the associate's decision is dependent on the receptiveness of the principal dentist. Assuming the principal dentist is unreceptive to the associate's concerns and the report is filed, the associate's professional career should not be in jeopardy. The associate is assured immunity upon filing a report in good faith. Yet there still may be some consequences for this action. The principal dentist may make life miserable for the associate in hopes that he or she quits. Also, the principal dentist may make known the associate's actions, which may deter other dentists from hiring that associate in the future. Conversely, the associate may be lauded for these actions by honest dentists as news travels of the integrity and courage involved in standing up for justice. Sincere dentists who have pure intentions want what is best for their patients and the profession. Hence, future dentists should be proud of the associate for upholding the integrity of their profession since all patients, regardless of their oral health provider, have the right to be treated fairly. The principal dentist, on the other hand, will most likely not reciprocate this sentiment and may harbor uneasy feelings toward the associate. It is fair to assume that their professional relationship may be forever tarnished. Additionally, there

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In the event that the principal dentist is unreceptive to the associate's concern the associate should respectfully explain to the principal dentist that there is no choice but to file a report per the mandatory reporting requirements.

may be some dentists who are disturbed by the fact that the associate reported the principal dentist; yet if they feel this way, it is possible that they are guilty themselves of committing similar acts.

The main driving force behind the rationale to speak with the principal dentist and ultimately file a complaint stems from the Principle Approach according to O'Toole (2006). The Principle Approach aims to reach a solution to benefit all parties involved while simultaneously being fair or just. The associate has a duty to bring justice to this situation since many are being treated unfairly, including uninsured patients, the insurance company, other dentists, and the associate. The principal dentist is displaying a complete lack of regard toward others simply by not collecting the copayment. Hence, it is unreasonable to expect these individuals to suffer simply because the principal dentist is writing off the copayment. Using the Principle Approach to convince others of a particular viewpoint is ineffective against individuals who are not concerned with the consequences of their actions. The principal dentist has most likely been writing off copayments long before the associate arrived. He or she has yet to see any consequences of these actions and has most likely enjoyed some of the benefits from the increasing patient base. By primarily arguing from the viewpoint that it is "unjust" to behave in this manner, it may seem unthreatening to the principal dentist. Therefore, the associate would have to emphasize the downstream consequences, in the form of legal action, lower insurance coverage for patients, and poor publicity, to get through to the principal dentist.

Ethical dilemmas can be overlooked when dentists do not follow a formal decision-making process. However, if

one acts with honest intentions of upholding the core values of the profession then they ought to be deserving of the title "professional." Being part of any profession should be viewed as an honour. Dentists have a social contract with society to display certain core values which should not be compromised. Approaching each moral dilemma through the UCLA Decision-Making Model will aid one in making better decisions. The privilege and respect which comes with the title of dentist is one which must primarily be upheld by those who follow the professional values that define our profession. Although some dentists may not see the harm in writing off the copayments, it has been made evident, through a careful analysis of the professional ethics at play, that serious unprofessional consequences are indeed probable. ■

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DOMESTIC VIOLENCE DILEMMA IN THE DENTAL CLINIC

Sapna Lohiya, DDS

ABSTRACT

A case is presented where a dentist recognizes physical abuse of a patient. Although legally the dentist must report such cases, the patient asks that this not be done. Statistics are presented regarding the prevalence and consequences of abuse, and one potential response is suggested.

Despite the heavy downpour of rain, a true anomaly in the normally sunny city of Los Angeles, All Smiles Dental Clinic had opened its doors at the usual 9 a.m. hour. Dr. Jan Freest had expected a slow morning—most of her appointments had been cancelled as many of her patients had opted to stay indoors on such a stormy day. At 10:30 a.m., however, Dr. Freest's office staff informed her that an emergency patient has arrived. With her newly cleared schedule, Dr. Freest asked her dental assistant to escort the patient into the operatory while she reviews the patient's dental and medical history.

Mrs. Maria Alvarez is a 29-year-old Hispanic female with a history of sporadic visits to the dentist. Her last visit was 18 months ago when she was seen for a fractured tooth. Dr. Freest's notes indicate that the patient said she had fallen down and that she also presented with bruises on her hands. Mrs. Alvarez was pre-hypertensive.

After reviewing the chart, Dr. Freest enters the operatory and greets Mrs. Alvarez. Her elder brother, Mr. Santos, has accompanied her. Dr. Freest immediately notices several scars on the patient's face and bruising along her arms. After performing the extraoral examination, Dr. Freest notes that the patient has tenderness upon palpation around her neck. The intraoral examination indicates moderate mobility on tooth #8 and #9. Her lateral incisor and canine (#10, 11) are both chipped. When Dr. Freest asks Mrs. Alvarez about the nature of her injury, she responds: "I fell

down and hit my front teeth." Dr. Freest is immediately suspicious of this response. Her patient's injuries, in conjunction with the bruising, seem to suggest physical abuse and not simply a fall. After Dr. Freest compiles the most appropriate treatment plan for her patient's dental issues, she discusses her suspicions with Mrs. Alvarez: "Your injuries are severe and do not seem to be merely caused by a fall. Could this possibly have been caused by another reason, perhaps abuse?" Mrs. Alvarez remains quiet and instead looks at her brother. Her eyes seem to yearn for support. After a moment, Mr. Santos tells his sister: "Go on, you can tell the doctor." Mrs. Alvarez clears her throat and then explains in a quiet voice: "Yes, my husband is generally a very loving husband. Sometimes he gets mad though, and yesterday he hit me several times." Dr. Freest knows that she is obligated to report this, but before she can tell them that, Mr. Santos interrupts: "We know how this sounds, but please don't tell anyone else. Our elder sister reported her husband for domestic violence and the government kept her safe for a little while. But after his time in jail, he found her and beat



Dr. Lohiya wrote this paper while a student at the University of California, Los Angeles School of Dentistry. It is the 2011 winner of the Ozar-Hasegawa prize for student ethics essays sponsored by the American Society for Dental Ethics.

Women who leave their batterers are at a 75% greater risk of being killed by the batterer than those who stay.

her terribly. She became disabled and had to flee to Mexico. Please, for Maria's sake, don't tell anyone. At least she has me here. Our elder sister has no one in Mexico." Dr. Freest looks at Mrs. Alvarez and sees her patient's eyes pleading with her to also turn a blind eye.

Dr. Freest has been challenged with an ethical dilemma. She must look out for her patient's overall safety and well-being. At the same time, she is legally obligated to report cases of domestic violence. Should she risk losing her patient's trust and potentially put her in more danger by reporting this case? Or should Dr. Freest stay quiet and face the legal repercussions and the certainty that her patient will get hurt again?

CONTEXT

Domestic violence is defined by the National Center for Victims of Crime as the "willful intimidation, assault, battery, sexual assault, or other abusive behavior perpetrated by one family member, household member, or intimate partner against another." The staggering statistics associated with domestic violence mean that it is almost inevitable that we as health professionals will be faced with ethical dilemmas similar to that confronting Dr. Freest. In fact, researchers have found that one in every four women will experience domestic violence during her lifetime. In the United States of America, a woman is beaten by an intimate or former partner every 15 seconds. Women who leave their batterers are at a 75% greater risk of being killed by the batterer than those who stay. Furthermore, every year, domestic violence leads to 100,000 days of hospitalizations, almost 30,000 emergency department visits, and approximately 40,000 visits to a health professional. For these reasons, the reality of domestic violence must be acknowledged by health professionals. We must become cognizant of its dynamics so that we can provide the best care for our patients.

Although domestic violence shows no bias for gender, race, or socioeconomic level, victimized patients can often be identified by their demeanor and physical appearance. These patients may have frequent injuries that they say have been caused by "accidents." In the case of Mrs. Alvarez, she attributed her injuries to accidental falls until further questioned by Dr. Freest. These individuals also may wear long-sleeve shirts and pants in order to hide their bruises. They may be depressed, withdrawn, or anxious when they come into the dental clinic. During Dr. Freest's encounter with Mrs. Alvarez, the patient was quiet; she required the extra support from her brother to reveal the true nature of her injuries. It is essential to recognize such signs of abuse in all patients and to listen carefully for any clues they may reveal so that these cases are not overlooked.

Once a victim has been identified, understanding the pattern of domestic violence provides invaluable insight into the victim's plight. These behaviors have often been referred to as the cycle of violence: abuse → guilt → excuses → honeymoon → fantasy and planning → set-up → abuse. The abuse phase refers to the violent incident that leads to physical and dental injuries. This is when health professionals, family members, and friends first get involved and urge the victim to seek help. This phase, however, is quickly followed by abuser guilt and excuses, where he is worried he may get caught; he therefore rationalizes his behavior by blaming the victim. The victim experiences self-doubt and begins to believe her abuser. The honeymoon phase starts next and is characterized by the abuser attempting to keep the victim in the relationship by showering her with gifts and affection. The victim often believes that the abuser has changed for the better and therefore rejects profes-

sional help and intervention. The abuser then plans for his next attack, and the cycle of abuse begins again. In Dr. Freest's case, Mrs. Alvarez described her husband as a loving partner. She may feel this way because of the honeymoon period that follows such periods of abuse. As the cycle of violence dictates, however, another abusive incident will likely occur in the future.

RESPONSE

Dr. Freest uses this information to resolve her dilemma. Dr. Freest knows she must act with great care to ensure her patient's safety. She must express concern and offer help. Dr. Freest also must weigh the principles of autonomy and beneficence in determining how to best proceed. Autonomy refers to Mrs. Alvarez's right to make an informed decision about her situation. Beneficence, however, requires Dr. Freest to act in a way that serves the best interest of her patients and to ensure that they remain in good health. Per the Professional Ethical Decision Making Model described by Ozar and Sokol (2002), Dr. Freest identifies the alternatives and weighs what is professionally at stake against what else is ethically at stake. She then determines what ought to be done. Since Dr. Freest is inexperienced in handling incidents of domestic violence, she realizes that the National Domestic Violence Hotline will be better equipped to deal with complicated cases like that of Mrs. Alvarez. She expects that they may respond appropriately and take the precautions necessary to guarantee her patient's safety. Dr. Freest informs the Hotline by calling 800-799-SAFE (8233). During the call, Dr. Freest explains Mrs. Alvarez's concern for her personal safety because of her elder sister's domestic violence experience. After hanging up the phone, Dr. Freest discusses her decision to report with Mrs. Alvarez and provides her with resources to seek help on her own. The patient understands

that she is now being protected and is ultimately satisfied with her doctor's decision. Dr. Freest then proceeds with her treatment plan and provides the dental care needed to stabilize the patient and restore aesthetics. Mrs. Alvarez thanks Dr. Freest and promises to make more regular dental visits to her so that both her dental and overall health can be monitored.

Dr. Freest's ethical dilemma is one that many dental professionals will face. In fact, dentists may be in a unique position to identify domestic abuse cases as victims often seek dental care before treatment by a physician. Researchers found that 16.7% of women seeking medical care for rape injuries, and 9.2% of women seeking care for domestic violence injuries visited their dentists. It was also determined that 68% of women battered by their partners suffer head and neck injuries (Love et al, 2001). Dentists may play an important role in recognizing these wounds as potential markers for domestic violence during their intraoral and extraoral examinations. For these reasons, it is important for dental professionals to become more educated on this topic so that they can assess a situation like Dr. Freest's and take appropriate action. By getting involved, dental professionals can improve their patients' emotional and physical health. As evidenced by the case of Dr. Freest and Mrs. Alvarez, this is truly invaluable.

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CULTURALLY DIVERSE PATIENTS AND PROFESSIONALISM IN DENTISTRY

Athena deBrouwer

ABSTRACT

A case is considered in which the father of an adult patient from another culture requests that only limited care be provided his daughter. Additional indicated treatment was declined. The patient appeared to defer to her father as a cultural norm. Various ethical principles and the conflicts among them are considered in light of cultural competency.

THE CASE OF THE UNHAPPY DAUGHTER

A cheerful 25-year-old woman comes to the dental clinic complaining of pain in her maxillary left central incisor. This tooth presents with a deep carious lesion, slight mobility, and swelling over the apex consistent with a diagnosis of a necrotic pulp. Her oral hygiene is quite poor and other deep carious lesions are visible on the other anterior teeth. The dentist recommends radiographs of the affected teeth and an examination. The patient requests her father come in, and they speak in a foreign language. After a brief conversation in their own language, the father responds to the dentist in English with “just take care of the tooth that is bothering her today. We don’t want any X-rays, but if you have to take a picture of this one tooth so that you can extract it, then go ahead.” The daughter sits quietly avoiding eye contact with both the dentist and father and she looks very unhappy (Donate-Bartfield & Lausten, 2002).

THE IMPORTANCE OF CULTURE

According to Fearon (2003) in the *Journal of Economic Growth*, Canada and the United States rank first and fifth in the western world respectively for cultural diversity. Furthermore, the proportion of minority individuals in these populations is expected to rise throughout the coming years (Formicola et al, 2003). As a result, culturally

sensitive situations are common and highly relevant to dental professionals practicing in Canada and the United States. Therefore, as an example of a culturally sensitive case, The Unhappy Daughter is worthy of this essay’s critical examination of the ethical responsibilities and conflicts of the dentist in this case, given the status of dentistry as a profession.

“Culture is the set of values, beliefs, and behaviors shared by a group of people and communicated from one generation to the next” (Olson et al, 2008, p. 271). This definition is a reminder that culture has a strong impact on ethical decision making; culture determines the emphasis its members place on specific values. The hierarchy of values becomes so embedded in the lives of a culture’s members that it comes to seem natural; the hierarchy of values comes to seem like an absolute truth, universal to all people (Bhikhu, 2000). As a result, unless a person has recognized the workings of his or her culture on the hierarchy of values, interacting with people from different cultures can be problematic. In contrast, the culturally competent practitioner is aware of his or her cultural values and attitudes, resists

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stereotyping, and allows patients to communicate their views.

Because dentistry is a profession, the ethical aspects of The Unhappy Daughter and similar culturally diverse situations warrant careful consideration. I see truth in the assertion of Welie (2004a, 2004b, 2011), Hilton and colleagues (2005), and others (Cruess & Cruess, 2000; Chandratilake et al, 2010) that a profession is created by the existence of a social contract. As such, I agree with Welie's resulting definition of a profession as "a collective of expert service providers who have jointly and publicly committed to always give priority to the existential needs and interests of the public they serve above their own and who in turn are trusted by the public to do so." I therefore define professionalism as the values, actions, and goals that demonstrate commitment to serving the "existential needs" of the public, regardless of the implications of this service to the "expert service provider." In this way, professionalism requires that dentists act ethically in all situations, upholding the ethical principles of beneficence, nonmaleficence, justice, and autonomy.

SOME BASIC ETHICAL PRINCIPLES

The ethical principle of autonomy, which requires dentists to respect the decisions of each patient, must be carefully considered in the case of The Unhappy Daughter. This is because autonomy includes the "patient's right to retain his or her own cultural orientation in interchanges regarding dental

care" (Donate-Bartfield & Lausten, 2002). As a result of this patient's particular cultural orientation, the implications of the principle of autonomy are altered in this case. The patient is above the age of majority (older than 18 years) and therefore has full authority to enter into financial agreements, such as dental fee payment (Willes & Willes, 2006). However, autonomy must also be considered in the sense that it is the daughter's choice to have her father handle her dental care decisions. As such, in this case, the principle of autonomy requires the dentist to involve the patient's father in the treatment process out of respect for the patient's culturally-based decision.

In order to act ethically, the dentist must also display beneficence by providing competent delivery of dental care with due consideration to the needs, desires, and values of the patient. Competent performance of the treatment the father has authorized is one way that beneficence is involved in this case. If a more comprehensive treatment plan could be agreed on for the patient, through approaches considered later in this analysis, there is potential for even greater beneficence.

Upholding justice, which entails fair treatment of all patients, will require particular effort in the case of The Unhappy Daughter. It would be unfair to

The culturally competent practitioner is aware of his or her cultural values and attitudes, resists stereotyping, and allows patients to communicate their views.

It would be unfair to allow cultural differences between the patient and dentist to negatively affect the quality of this patient's treatment.

allow cultural differences between the patient and dentist to negatively affect the quality of this patient's treatment. In order to avoid this injustice, a thoroughly considered, sensitive approach must be used, requiring cultural competence on the part of the dentist.

Nonmaleficence involves avoiding harming the patient. In the case of *The Unhappy Daughter*, treating the central incisor with the necrotic pulp will prevent harm to the patient by reducing risk of infection and other complications and relieving the patient's pain. Nonmaleficence is more uniquely involved in this case through respect for her culture, which will prevent the dentist from harming the patient emotionally and psychologically.

WHEN PRINCIPLES COLLIDE

Although dentists must strive to respect beneficence, justice, nonmaleficence, and autonomy, ethical dilemmas sometimes preclude universal adherence. An ethical dilemma is a situation in which commitment to one of the core ethical principles results in another of the principles being violated or compromised to a degree.

In the case of *The Unhappy Daughter*, an ethical dilemma exists between beneficence and autonomy. The best interests of patient care will not be served (beneficence) if only the central incisor is treated, but it is also necessary to respect the autonomy of the patient by accepting her father's decision. Therefore, unless the dentist can influence the father's decision, the patient will experience either a lack of respect for her autonomy or a compromised level of beneficence.

Justice and nonmaleficence are also in conflict in this case. This patient deserves as high a standard of care as all other patients (justice), but suggesting

that the patient go against her father's wishes would be an act of maleficence on the part of the dentist through disrespect of the patient's culture.

The social contract that creates a profession not only calls on dentists to act ethically (i.e., to pursue beneficence, justice, and respect for autonomy) but also allows dentists the privilege of self-governance. Self-governance of Ontario [Canada] dentists is achieved through the Royal College of Dental Surgeons of Ontario (RCDSO), which is charged by the Regulated Health Professions Act (RHPA), the Health Professions Procedural Code, and the Dentistry Act of 1991 with the responsibility of protecting the public. The RCDSO has created a Code of Ethics, which provides more specific guidance to the dentists of Ontario than the ethical principles discussed above. The principles of this code are helpful in the case of *The Unhappy Daughter* and are enforceable by law. Violations of these principles may be reported to the Inquires, Complaints and Review Board or the Health Professions Appeal Board and later the Discipline Committee, if necessary. If the Discipline Committee finds that a dentist has violated one or more principles of the RCDSO Code of Ethics during patient treatment, the committee has the authority to revoke a dentist's right to practice in Ontario, impose limitations on the dentist's certificate of registration, reprimand the dentist, or require the dentist to pay a fine to the government of Ontario.

Principle 1 of the code states that "the paramount responsibility of the dentist is to the health and well-being of the patients." Involvement of Principle 1 was established above, during discussion of the role of beneficence in this case.

Similarly, adherence to Principle 15 was covered in the above discussion of autonomy, which established that, in this case, autonomy includes respect of the patient's wish to include her father in her treatment decisions. Principle 15 of the RCDSO Code of Ethics asserts dentists' duty to protect the confidentiality of the personal and health information of patients." Clearly, the patient would need to give the dentist permission to include her father in discussions of her dental care.

Principle 2 is particularly helpful for the present case and entreats dentists to be truthful, obey the law, and provide care with respect for human rights and dignity without discrimination. Therefore, according to the RCDSO, it is the duty of the dentist in the case of The Unhappy Daughter to be mindful of the cultural orientation of the patient and to provide treatment of the highest standard, regardless of cultural differences between the dentist and patient. To fail to do so would be an act of discrimination. However, the dentist must also be aware of the facts of diverse cultures approach life with a different set of expectations, values, and interpretations and that their approach can be as satisfying and as rich to them as any other culture is to any other person. Therefore, the highest standard of treatment for a given patient is a function of that patient's culture, among other factors, and should be individually tailored as such.

The RCDSO's Code of Ethics Principle 6 requires that dentists provide unbiased explanations of options with associated risks and costs and obtain consent before proceeding with investigations or treatment. This principle has a unique meaning in the case of The Unhappy Daughter where it is imperative that the information required to generate informed consent is given to the father as well as the patient, given the father's

role in deciding which treatment his daughter will consent to. In a similar way, Principle 12 can only be achieved by conscientious consideration of the patient's cultural orientation, as it states that dentists should only provide compromised or unconventional treatment with full disclosure or consent from patients. Since the patient has placed authority with her father, the full disclosure process should include the patient's father if the compromised treatment they have requested is to be justified.

OPTIONS FOR MANAGING THE CASE

In the situation of The Unhappy Daughter, the dentist involved has four options. The dentist could respond by doing nothing, refusing to treat the patient and sending the daughter and father to another dentist. Acting in this way would violate the professional values that underlie the ethical principles discussed above, especially those of compassion and integrity, which call the dentist to help this patient, despite the complexity of her case.

The dentist could also respond by doing exactly as the father has requested and treat the painful tooth but do nothing further. This response would demonstrate a broken commitment to informed consent: it violates RCDSO Code Principle 12, pertaining to disclosure and consent for compromised treatment. In this case, informed consent has not truly occurred, because the decision maker (the father) has not been fully informed. In addition, even though the father's unique role in consent has been accepted (out of respect for autonomy), it should be noted that the patient has not yet communicated her agreement with her father's treatment decision. Consent has not been given, and further

communication is required before any treatment is performed.

A third possibility is to ignore the father and discuss the patient's condition and treatment plan with the patient only. However, this would be a form of discrimination, violating RCDSO Code Principle 2 by failing to respect the patient's cultural orientation. This approach also disregards the patient's autonomy, which requires that the dentist strive to create what Ozar and Sokol (1994, p. 126) refer to "as interactive a relationship with the patient as possible," which cannot be achieved by forcing her to adopt an interaction model involving the patient and dentist only.

The dentist's final option is to take the patient's culture into account and (with the patient's permission) address advice to both the patient and her father in recognition of the evident importance of paternal authority in their culture. The dentist would review all relevant information, including the options of the patient, associated consequences of each option, and probability of each consequence with the father. With receipt of this information, the father would be capable of making an informed decision about his daughter's care.

I would select this final approach in the situation of The Unhappy Daughter. I find this course of action ethically preferable because it ensures that the daughter's rights to consent and autonomy (cultural orientation) are respected and that the cultural values of the father

and the daughter are incorporated into the information process to achieve truly informed consent. It is hoped that informing the father will lead to a treatment plan that more fully addresses the patient's issues, which would constitute justice by achieving a standard of treatment that is as high as possible for the patient. Furthermore, this approach could optimally lead to family support for improved patient oral hygiene practices in the future and therefore prevent harm to the patient (achieving nonmaleficence).

To further improve this course of action, the role of intercultural communication should be taken into account, since "information-based communications [which are used by dentists in the process of informed consent] are effective when they present strong evidence or compelling arguments that there will be positive consequences associated with accepting the recommendations in the message," but often, "people of different cultures find different evidence or arguments compelling" (Olson et al, 2008, p. 270). Therefore, the dentist in the case of *The Unhappy Daughter* should take into account the fact that cultural differences could render the treatment plan explanation less effective, decreasing the likelihood that the patient will consent to the treatment and thereby limiting the beneficence achieved by the dentist. Therefore, the dentist in this case should attempt to use culturally relevant lan-

guage and treatment options in order to improve both the quality of informed consent given by the father and the level of compliance of the patient.

Intercultural communication is one component of cultural competency, a larger skill set essential in culturally sensitive patient-dentist interactions. In fact, as Donate-Bartfield & Lusten note "a number of studies have suggested that if health professionals are intercultural competent and skilled in recognizing and working with patient/client values and beliefs, the client response is enhanced" (2002, p 1007). Cultural competence can be developed by dentists through one or several of the following strategies, which include, "(a) self-awareness through introspection, (b) [acquisition of] knowledge of the health beliefs and practices of cultures most likely to be served, (c) taking courses in intercultural communication, (d) learning a second language, (e) [acknowledging] patient's interpretation of condition, [and] (f) presenting direct advice in a familiar manner" (Galvis, 1995, p. 1103). By interacting with people of many cultural backgrounds, future dentists can become aware of the preferences, practices, and values of cultures that they were not born into (O'Toole, 2006). This will give the dental student some idea of appropriate and effective ways to interact with people of these cultures once they begin practicing dentistry. Exposure to diverse cultures can be acquired through travelling to foreign countries, volunteering in community outreach programs, and even through friendships with classmates. In my class at Schulich, we have members of many different cultural groups, making socialization with classmates not only recreational, but an educational opportunity. It should also not be forgotten that classmates will remain important members of a practicing

dentist's life and can be an important way for dentists to discuss culturally and nonculturally based ethical dilemmas. Furthermore, classmates that share a culture with a given dentist's patient may be able to offer valuable advice on the most sensitive and appropriate approach for caring for that patient.

The ethical analysis above was performed using the principle approach, which is the approach most commonly used in dental ethics. O'Toole defines a principle as, "a general normative standard of conduct, holding that a particular decision or action is true or right or good for all people in all times and all places" (2006, p. 1153). Although those that employ the principle approach for all situations can be perceived as intractable, I believe it is an especially useful in culturally sensitive situations, where the ethical action may be particularly unintuitive due to the bias created by the practitioner's own culture. In these cases, principles give the dentist firm guidelines that can be used confidently because they are uninfluenced by culture. The relative importance placed on each of these principles should be adjusted according to the individual patient, however, especially in cases involving cultural diversity.

In conclusion, a social contract exists between dentists and patients, bequeathing dentists the trust of the public, binding dentists to the service of their patient and society, and qualifying dentistry as a profession. As a result of this contract, dentists are called to analyze culturally sensitive situations like *The Unhappy Daughter*, in order to identify and work through the ethical dilemmas such cases can contain. The ethical principles of beneficence, justice,

nonmaleficence and respect for autonomy can guide dentists through these ethical dilemmas. Codes of ethics developed by dental associations and regulators like the RCDSO can also be helpful. In the case of The Unhappy Daughter, both the core ethical principles and the RCDSO Code of Ethics indicate that cultural competence and communication are important skills for ethically navigating culturally diverse patient-dentist interactions. ■

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An ethical dilemma is a situation in which commitment to one of the core ethical principles results in another of the principles being violated or compromised to a degree.

COLLEGE STUDENTS PRACTICE DENTISTRY IN THIRD-WORLD COUNTRIES

Lisa P. Deem, DMD, JD, FACD

ABSTRACT

Increasingly, applicants to dental schools are reporting experiences providing dental care on third-world mission trips. Perhaps they do not know that this behavior is unethical and illegal, but those directing and sponsoring these programs could not so easily claim to be unaware that what they are doing is wrong. Policy statements and informational campaigns by professional organizations may help curb this abuse.

International dental mission trips are increasingly popular among college students aspiring to become dentists. In an attempt to demonstrate the desire to attend dental school and a commitment to community service, increasing numbers of college students are participating in international outreach efforts. Unfortunately, the level of participation extends to the actual practice of dentistry. Applicants are so unaware of the ethical and professional obligations to patients that they proudly disclose their activities on dental school applications. "By the second week, I had successfully administered an inferior alveolar block and extracted my first tooth on a boy named Jonathan."

Jonathan is an orphan in Costa Rica. Jonathan's "oral surgeon" is a college student on a dental outreach mission. Stunning activities like this are occurring throughout some international outreach efforts, advertised specifically to pre-dental students. The dental team experience for pre-dental students, as advertised on one Web site, includes "dental exams, teeth cleaning, extractions, and fillings." College students are administering anesthesia, performing extractions, placing sealants, preparing teeth, and otherwise practicing dentistry in all capacities on the world's most vulnerable populations.

As an admissions officer at one of the largest dental schools in the country, I have the opportunity to read too many personal statements detailing

the escapades of college students that are frightening: "Utilizing my elevator, I loosened the periodontal ligament around #12 and after lightning-fast minutes, I held a premolar in my hand that represents the culmination and validation of years of anticipation, perseverance, and sacrifice." Whose sacrifice?

The activities described above are disturbing on several levels. In an attempt to address the disparities in health care in third-world countries, activities such as these actually define disparate treatment of people from underserved, impoverished nations. Supervising dentists and eager students equally share in the responsibility of treating patients from third-world countries in a way that would not only be inconceivable in developed countries, but illegal. The scenarios described should give all of us pause.

The dentists who accompany students on the outreach trips facilitate and ultimately condone the behavior by teaching technical procedures and allowing care to be rendered. While those dentists may contend they are



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doing “good,” potentially they may be doing harm. Extraction of teeth by untrained personal has been practiced for centuries. However, in this century we understand the potential complications and long-term harm that could result from this practice. The students, our future healthcare providers, demonstrate questionable ethics, poor decision making, and a lack of understanding of the profession. They are working under a misguided ethical and professional understanding of the field of health care. They presume that any care is better than no care. In many cases, no care is indeed better than harmful care. The orphans and others who line up for miles in pain, waiting in sweltering heat in underdeveloped countries for desperately needed health care wait for competent, experienced “foreign” or American dentists. They may not be informed that they are being used to provide experience for a college student who intends to apply to dental school to become a dentist. They are not given a choice. It is our duty to ensure that all people are treated with the same professionalism, compassion, and standards of care as the most prominent patient in the wealthiest country.

International humanitarian outreach activities are an excellent way for the most fortunate to give back to the underserved. Dentists who participate in outreach efforts in risky, often uncomfortable, situations should be commended for their beneficence. However, some dentists are willing to

disregard their ethical obligations to patients and the practical aspects of improper training, as soon as they cross the borders. Dentists must recognize the value of a dental education and take no part in enabling the practice of dentistry without one. Undervaluing the requirement of a dental education in the profession in the name of access to care has become increasingly common. Procedures that have been historically within the sole domain of highly educated, well trained dentists are being delegated to other, less qualified oral healthcare team members in an attempt to address the needs of the underserved. It appears that the slippery slope continues all the way to college students practicing dentistry on orphans in third-world countries because treatment delivered below the standard of care must be better than no care at all.

In order to solve the increasing problem of college students practicing dentistry in undeveloped countries during dental missions, we must first educate the dentists who are supervising the practice. While those dentists facilitating the unacceptable practice of dentistry are in the minority, those who allow the behavior exist in large enough numbers that many applicants from across the U.S. report practicing dentistry during dental missions on their dental school applications.

College students are administering anesthesia, performing extractions, placing sealants, preparing teeth, and otherwise practicing dentistry in all capacities on the world’s most vulnerable populations.

The dentists who accompany students on the outreach trips facilitate and ultimately condone the behavior by teaching technical procedures and allowing care to be rendered.

For most dentists it is self-evident that showing a college student how to perform extractions and supervising the activity are problematic. For those who do not have a personal or professional problem with the concept, organized dentistry could take the lead by reminding dentists who participate in dental outreach of their ethical obligations to their patients whether at home or abroad. Similarly, the American College of Dentists could post a policy statement on the issue, which reflects its mission of advancing excellence, ethics, professionalism, and leadership in dentistry.

Additionally, continuing education classes on ethics and professionalism could include the issue as a component in the course. Finally, state boards of dentistry should notify licensees that delegating duties to a person that is known not to be competent is considered unprofessional conduct and disciplinary action can be taken against the license.

The high value that dental schools place on community service in considering applications may be, in part, the cause of college students stretching their service to include the actual practice of dentistry. Applicants think that international outreach activities serve them as being demonstrative of both their altruism, as well as their newly acquired dental skills. However, some schools are rejecting otherwise academically

qualified applicants based on the questionable ethical integrity and self-serving behavior of outreach participants.

College students must be informed of the unacceptable act of practicing dentistry without training. The students must be educated in the ethical principles of the profession. This can be accomplished through a policy statement published by the American Association of Dental Education, which is actively discussing the topic. Additionally, the National Association of Pre-Health Advisors has been notified of the activities of their students and has reached out to dental school admissions officers for advice.

Addressing access to care issues, minimizing health care disparities and serving the poor are missions that we should adopt personally as health care professionals. As dentists, we have rich opportunities to give back to society, both locally and globally. We assume a position of trust in the communities we serve within our borders and beyond. It is our responsibility to ensure that the trust we enjoy from of all members of society, especially those from the most vulnerable populations, is not misplaced.



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ETHICAL CONSIDERATIONS OF RANDOMIZED CONTROL TRIALS WITH HUMAN PARTICIPANTS IN DENTISTRY

A REFLECTIVE ANALYSIS

Eric Chen

ABSTRACT

A potential conflict is built into the roles of dentists and researchers with regard to ethical principles such as beneficence, nonmaleficence, respect for autonomy, and justice. The practitioner has an obligation to do what is believed to be best for the individual patient: the dentist as researcher has an obligation to use rigorous experimental methods, including randomized control trials (RCTs) to discover what is best for patients generally, including the investigation of experimental modalities. This is the equipoise problem—how can a professional be assured of offering the most beneficial treatment available if only using approaches that have worked in the past? This essay explores the ethical foundations for this challenge and proposes a groundwork for balancing ethical obligations to patients and the needs for scientific and public health advances.

In 2006, clinicians from the Division of Oral and Maxillofacial Surgery at the University of Texas Southwestern Medical Center asked a common question of the dental and medical professions: What can we do to ensure the best health outcome for our patients? Specifically, these clinicians wanted to know if the administration of postoperative antibiotics would be beneficial in reducing infection in patients with open mandibular fractures. They conducted a prospective randomized trial to investigate the effectiveness of—and thus necessity for—postoperative antibiotic regimens in the treatment of 181 patients who presented with open mandibular fractures (Miles et al, 2006).

While all of the patients received preoperative antibiotics and intraoperative antibiotics on the day of surgery, they were randomly placed into two groups to determine whether or not they would receive postoperative antibiotics. Within the eight-week follow-up period, eight infections occurred in the group that received postoperative antibiotics, and 14 infections were found in the group that did not receive postoperative antibiotics. Despite this disparity, statistical analysis yielded no statistically significant difference. Therefore, the clinicians concluded, based on their study that no statistically significant benefit was found in the administration of postoperative antibiotics in their patients with mandibular fractures (Miles et al, 2006).

A baby born today will live a longer life on average than any other human being in history (Centers for Disease Control and Prevention, 1999; Caspari & Lee, 2004). Thanks to advancements in biotechnology, improvements in public health, and substantial gains from drug testing in human patients, human health is better than it has ever been before. Despite the fact that we have yet to find cures for a host of diseases, and that the final years of life are plagued by



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diseases that diminish quality of life, some argue that any obligation to discover cures for these conditions must not include potential harm to human subjects in research trials. Especially for placebo-controlled randomized control trials (RCTs), observers question the ethical permissibility of using human participants if a novel treatment might be statistically ineffective.

Indisputably, human experimentation involves important and ultimate questions about personal dignity and the inviolability of persons. What differentiates human experimentation from *in vitro* drug testing is that artificial substitutes designed specifically for the purpose of the experiment are no longer used; rather, we are using human beings, and this fact alone makes RCTs far more complex and unnerving.

Animal research has similar limits. While it is true that other organisms can serve as proficient substitutes for human research, there are innate biological differences between *Homo sapiens* and *Drosophila melanogaster* and even between humans and our closest primate relatives. To assess the true efficacy of a drug regimen designed for *Homo sapiens*, it seems clear that human subjects must, at some point, be used for absolute validation of medical research.

This paper will explore various ethical and moral views related to the conduct of randomized control trials with human subjects in dentistry, generating a dialogue of increasingly complex arguments in favor of *in vitro* human research. An assumption of this paper is that primary inviolability (that life can-

not be violated) and sanctity of life need no justification whatsoever. However, this philosophical principle does not contribute to the discussion of RCTs with human subjects in that it categorically dismisses RCTs as morally unjustifiable and is thus not useful in the present discussion (Merritt, 2005). Therefore, in order to justify the infringement of primary inviolability—to justify the usage of human beings as research subjects with subsequent potential harm or even death from treatment—certain values must be asserted that exceed the values threatened by RCTs. This paper strives to substantiate the notion that randomized control trials with human participants in dentistry and oral medicine for the purpose of clinical research and the advancement of human health is ethically and morally permissible.

THE RESEARCHER

By definition, clinical research is medical research conducted with human subjects to ascertain, for example, the efficacy of novel medications and treatments. The investigator's goal is to scientifically and empirically establish the best treatment. But the main issue here concerning clinical trials is that the only way for the investigator to conduct a fruitful study is to have some of the subjects bear medical burdens or risks that are not reasonably expected to bring direct benefit to them (Merritt, 2005).

For instance, in a 2009 randomized placebo-controlled study at the Department of Thoracic/Head and Neck Medical Oncology at the University of Texas Anderson Cancer Center, researchers randomly assigned patients with high-risk oral premalignant lesions to receive a high dose of green tea extract, a low dose of green tea extract, or a placebo (Tsao et al, 2009). With epidemiologic data supporting the notion of oral cancer prevention by means of green tea extract through the reduction of the angiogenic stimulus,

tumor stromal vascular endothelial growth factor A, the study's methodology required that the placebo group patients receive the equivalent of no formal medical treatment. Consequently, the placebo-controlled patients were not expected to receive the purported benefit of oral cancer prevention, and thus they bore a medical burden. Ultimately, the study did not yield statistically significant differences between patient cohorts that received a high dose of green tea extract and those that received the placebo. However, the study did show a dose-response effect when higher amounts of green tea extract were administered. Resultant oral cancer prevention thus supported future long-term clinical testing of green tea extract in patients with high-risk oral premalignant lesions (Tsao et al, 2009).

As seen in this example, it is imperative in a clinical trial that researchers adhere to the strict methodological procedures of research with professional integrity to validate the study and to justify human participation. Otherwise, to allow human subjects to participate in a poorly executed trial lacking sufficient statistical strength is to expose people to medical burdens and risks without the realistic hope of adding any valuable information to the established knowledge base (Merritt, 2005). Thus, to complete the clinical trial to produce scientifically valid data and to share this new information with the dental community becomes an absolutely essential criterion in ensuring that subjects are not exposed to medical risks in vain. Just as prominently, the relationship between the patient and the investigator is grounded by the shared understanding that the subject voluntarily and willfully agrees to partake in the clinical study for the purpose of aiding the scientist in this medical investigation. Further, an

ultimate aim of the researcher is the progress of dental medicine—and in this one example, the prospect of a common and affordable supplement in oral cancer prevention.

THE ORAL HEALTHCARE CLINICIAN

Moral considerations also come into play, and here we consider the oral healthcare clinician, the healer. The clinician's duty is to place the needs of the patient above all and to protect the patient's health in the face of everything else, which may include protection from research participation that involves the hardship of medical burdens or risks. This is an ethical and moral obligation, particularly for a trained dental professional. With regard to dental medicine, clinicians are governed by the moral considerations of beneficence—improving a patient's condition—and nonmaleficence—removing or mitigating harm such as refraining from providing false treatments (Beauchamp & Childress, 2001). These two principles, along with patient autonomy, justice, and veracity in the form of truthfulness, establish the fundamental ideology that governs the professional ethics of dental medicine (American Dental Association, 2012).

However, the following is the innate conflict between the oral healthcare clinician and the researcher. From the clinician's standpoint, the needs of the patient override the fact that a patient may indeed be a research subject. From the researcher's standpoint, however, the needs of the patient may not be the immediate priority; instead, the point is the testing of a novel treatment such as green tea extract against a placebo to prevent oral cancer for the advancement of scientific and clinical knowledge. Thus, the dichotomy between clinician and researcher, between caregiver and scientist, between healer and investigator is stark with regard to answering to the needs of the patient. In the case of RCTs, however, both obligations—that of

the clinician and that of the researcher—cannot be equally and concomitantly fulfilled. This raises the question: When can both obligations be fulfilled? Or more specifically, when is an oral healthcare clinician simultaneously allowed to be a researcher?

PRACTITIONER EQUIPOISE

To first evaluate the role transformation from clinician to researcher within the context of human research, consider the broad case of practitioner equipoise, the balancing of essential factors. In a given clinical scenario, it is true that a dental clinician may not always know the best treatment. For instance, given the physical body of evidence and symptoms, the clinician may have no reason to choose one treatment over another. Thus, the clinician is in a state of equipoise. Given the evidence, procedure A seems neither significantly better nor worse than procedure B; therefore, the dentist may just as well flip a coin to select one procedure over the other. For example, a clinician may have no reason to favor the use of a conventional denture over an implant prosthesis in a particular patient. Equivalently, with respect to placebo RCTs where some patients are randomized to receive no treatment and others are randomized to receive treatment, a clinician is in equipoise with regard to what will be of greater benefit to the patient. As a result, perhaps RCTs simply formalize and highlight a dentist's individual state of equipoise by means of a clinical trial. By eliminating selection bias in randomly controlling the trial, a dentist is in equipoise (uncertain if one procedure or agent is better than the other) and thus ethically permitted to conduct RCTs.

There is an obvious flaw here when we consider everyday clinical situations. An individual dentist is often in a posi-

The relationship between the patient and the investigator is grounded by the shared understanding that the subject voluntarily and willfully agrees to partake in the clinical study for the purpose of aiding the scientist in this medical investigation.

tion with sufficient evidence to deduce which treatment is best suited for the patient. Even if a dentist does not have sufficient evidence to be certain which is the best treatment, the dentist at least has more evidence one way or another. Thus the delicate evidential balancing act required for equipoise rarely occurs in clinical practice. By this same reasoning, an oral healthcare clinician cannot justify placing patients in RCTs based solely on individual practitioner equipoise.

Clinical Equipoise—DENTAL AMALGAM

Now take a step farther and examine clinical equipoise as opposed to individual equipoise. If there is genuine uncertainty in the dental community as to whether one treatment is better than another, then by definition the dental community is in clinical equipoise (Miller & Brody, 2003). Due to disagreement over the preferred treatment, the matter cannot be settled as oral healthcare clinicians reach differing conclusions given the same body of evidence. In contrast to an individual dentist choosing between two procedures based upon practitioner equipoise, the entire profession is at clinical equipoise, which produces the need for RCTs. Dentists who first suspected amalgam as a potentially hazardous filling material in comparison to resin composites were dutifully concerned about the potential harm. As such, many RCTs grounded upon clinical equipoise were conducted across the world resulting in controversial results. (Bellinger et al, 2006; Woods et al, 2007).

In 2006, researchers at Harvard Medical School conducted a randomized

clinical trial with 534 children between the ages of six and ten to investigate potential neuropsychological and renal effects of amalgam restorations as compared to children who received composite restorations (Bellinger et al, 2006). The study found no statistically significant adverse neuropsychological or renal effects within the five-year follow-up period for those children with amalgam restorations. However, a different RCT with 507 children conducted over a seven-year follow-up period found a strong, positive correlation between mercury exposure from amalgam restorations and urinary mercury excretion. The mean mercury urine concentrations of the amalgam cohort was more than double the composite resin cohort – 3.2 g/L vs. 1.5 g/L (Woods et al, 2007). In light of clinical equipoise, genuine uncertainty in the dental industry (as shown by the great number dental amalgam studies) is a valid argument for the use of RCTs to explore this question.

As long as the treatments and testing procedures satisfy the requirements of clinical equipoise, then clinician investigators are able to satisfy their therapeutic obligation to patients within the context of RCTs (Miller & Brody, 2003). Here, RCTs are not only scientific experiments designed to produce knowledge that can help enrich patient care, but also treatments administered by oral healthcare clinicians who preserve fidelity to the ideology of beneficence and nonmaleficence that govern the ethics of dental medicine. This makes it ethically permissible for clinician investigators to conduct RCTs without forfeiting therapeutic obligation by imparting treatment consistent with scientifically validated measures of care. Given genuine lack of consensus of preferred treatments (as seen in the prominent case of dental amalgam use) along with effective informed consent, it is ethically permissible for clinicians to

conduct RCTs with human participants in institutional settings.

ARGUMENTS AGAINST RANDOMLY CONTROLLED TRIALS

It is important to acknowledge the greater implications of RCTs with human participation, as moral philosophy provides the basis of medical and dental ethics. Hans Jonas, the twentieth century German philosopher and pioneer in the field of bioethics, presented several interesting cases regarding why human subjects should not be used for medical research. One of his strongest arguments is that “no complete abrogation of self-interest”—or in other words, sacrifice—can be found in the social contract, and thus human sacrifice towards the benefit of society can neither be obligatory nor morally justified (Jonas, 1969). Specifically, the theory of the social contract refers to seventeenth century political philosophical thought as propounded by Thomas Hobbes’s *Leviathan* and John Locke’s *Second Treatise of Government*. The citizens of society as depicted by these authors consent to relinquish some of their rights to the governance of society in exchange for guarantee of enforcement of their remaining freedoms (Harrison, 2002).

Jonas argues that the good of society alone cannot justify the potential sacrifice of the individual. However, Jonas agrees that at times the rights of the individual can be trumped by the rights of society, but only in cases of utmost emergency. Specifically, Jonas draws upon the state of war when the needs of society temporarily supersede individual citizen’s right. Only in such an extreme case can society call upon its members to engage in combat and risk their lives (Jonas, 1969).

In RCTs, however, the cause for members of society to engage in medical

research and risk their lives is a matter of improving and not rescuing society—dental advancement is not war. Jonas would argue that it would not be the end of society, for instance, if a certain percentage of oral cancer patients continue to die. Similarly, decreasing mortality rates from a disease like oral cancer or increasing quality of life through novel direct restoration treatments of caries based on RCTs does not make it morally permissible to use human beings as research subjects. “Progress,” Jonas claims, “is an optional goal, not an unconditional commitment,” and thus sacrifice by means of human participation in RCTs goes above and beyond what should be asked of any human being (Jonas, 1969).

REFLECTION

Jonas’s use of the word “sacrifice” may be too strong and even deceptive when claiming that RCTs with human subjects are impermissible due to the absence of complete abrogation of self-interest in our social contract with society. While no one, not even society, can ask others to sacrifice themselves as a victim in the name of science, no one is a complete victim of medical research through RCTs purely for the public good. On the contrary, there are potential and concrete gains as postulated by the investigation of scientific inquiry and maintained by the supervision and compassionate care of clinicians. Much more would be at stake if society were not allowed to conduct RCTs. In particular, there is no more extreme risk to individuals voluntarily participating in RCTs than if RCTs were never conducted in the first place.

Furthermore, Jonas is wrong to say that medical research via the social contract would result in the complete abrogation of self-interest. Consider the fact that many individuals suffer from oral cancer and subsequently experience significantly decreased quality of life

or worse. According to a recent 2012 epidemiologic review of oral and pharyngeal cancers, there are approximately 30,000 new cases of oral and pharyngeal cancers diagnosed annually in the United States alone, with five-year survival rates as low as 27.6% for African Americans (Saman, 2012). It is therefore justified to proceed with RCTs for continued research for the countless patients suffering from oral cancer.

Subsequently, if the argument for continued human research is not for overall good, it can be argued strongly in favor of individual self-interest so as to increase the quality and extent of life.

CLINICIAN TRAINING

Consider the analogy of the duty to accept the situation in which dentists-in-training treat patients that may reasonably be considered “experimental subjects.” It is in society’s interest (as well as the self-interest of students) to train dental clinicians. How else would periodontal disease be treated or impacted third molars extracted if there were no trained oral healthcare clinicians? It is also true that dentists-in-training must treat patients a first time. On what moral basis can someone insist that someone else must accept treatment from clinicians-in-training so that they themselves can avoid it? Each of us bears a shared responsibility to train future clinicians. If not, we bear a greater burden—that is, there will be no oral healthcare clinicians to treat our oral health concerns.

Although we are all permitted to decline personal treatment from student dentists, we ought to accept it. We do so for reasons of self-interest and societal benefit in the continuation of the dental professions.

As members of these societies, if we each receive the fair share of benefits, then fairness demands that we experience the fair share of burdens, as well.

Although we are all permitted to decline personal treatment from student dentists, we ought to accept it. We do so for reasons of self-interest and societal benefit in the continuation of the dental professions. Thus, the grounds of self-preservation upon which to reject care from a clinician-in-training are similar to those upon which to reject participation in a clinical trial for the same self-preservation, which in this light seems rather foolish. One of the strongest arguments against RCTs with human subjects—that citizens have no obligation in the social contract to subject themselves to research and endure potential risks—is flawed. Opponents such as Hans Jonas argue that the good of society cannot justify the harm of the individual. Human participation in medical research is rather a matter of fairness, as will be explained next.

RAWLSIAN FAIR PLAY

In the case of Rawlsian fair play, RCTs must be examined in light of the certain societal obligations in relation to American philosopher John Rawls's veil of ignorance. Rawls's best-known work, *A Theory of Justice*, popularized the veil of ignorance—an approach to investigating the morality of an institution or action based upon the thought experiment of randomly redistributing societal roles without knowledge of the assigned role (Rawls, 1999). Imagine that you could have been born into any social position in life; rich or poor, talented or not, and of any ethnic group. Consequently, we can debate the way a particular issue will impact each member of society through the lens of impartiality. To begin, as citizens of the United States we have certain obligations

to social contracts. Dentists and students must also abide by certain regulations as members of the professional community. We have consented to these obligations implicitly rather than explicitly. As members of these societies, if we each receive the fair share of benefits, then fairness demands that we experience the fair share of burdens, as well.

In accordance with the veil of ignorance, one might easily be born as an individual with syndromic cleft lip and cleft palate or occlusal caries on tooth number 19. We have all benefited from experienced clinicians in dentistry by virtue of their educational experiences in school. Someone else, also a member of the society to which we each have tacitly consented, bore the burden to train the clinicians from whom we benefit today. These instructors bore this burden because someone before them shouldered the identical burden in training a previous generation of clinicians.

Therefore, as free and uncoerced beneficiaries of trained clinicians, respecting the principle of fairness under the veil of ignorance (where one may or may not be in dire need of oral care), the moral permissibility of subjecting oneself to the same burden begins to take form. In fact, fairness in the form of justice, alongside autonomy, beneficence, nonmaleficence, and veracity constitute the dogma that governs dental medicine. Although the ADA Code states that “the dentist has a duty to treat people fairly,” its corollary—that we should be expected to be treated fairly ourselves—rings true in light of accepting clinicians-in-training under the veil of ignorance.

With regard to human participation in RCTs, we are simultaneously considered beneficiaries of clinical research from other members of society who were once subjects and bore this previous burden. Bone graft procedures to establish dental implants and inferior alveolar nerve blocks in dental anesthesia, for

instance, are specific procedures arising from clinical studies with human subjects in dentistry and oral health (Esposito et al, 2006). As a matter of fairness in relation to Rawls's veil of ignorance, RCTs with human subjects for the purpose of research in dentistry is in fact ethically and morally permissible.

Public Health

The significance of population needs through public health is equally important as fairness examined through the veil of ignorance. Jonas's claim that progress is an optional goal of society may not be applicable in this light. Recall the dentists who first suspected amalgam as a potentially hazardous filling material and were concerned with the public health implications of using mercury in dental fillings. As a result, many RCTs were conducted across the world resulting in controversial results, (Bellinger et al, 2006; Woods et al, 2007). Although dentists today still maintain conflicting views on amalgam use, it is important to recognize that RCTs have been appropriately conducted to address worldwide dental public health concerns. RCTs must have sufficient statistical power to provide both useful and reliable knowledge for the dental community and enhance the good of society via enhanced public health. Understandably, this knowledge must be of valuable and meaningful concern such as the potential risks of amalgam use, and be applied with due diligence towards prospective improvements not only for the advancement of the dental field, but also for the promotion of public health and safety.

From the greater public health standpoint, both the research and clinical communities have a prevailing responsibility to safeguard the world population from threats to health and enhance quality of life. Our ethical obligation as dental professionals to

cultivate ample data regarding the efficacy and safety of innovative treatments before they are made publicly available is crucial, and this is where RCTs provide the best measure for ensuring such progress. As Franklin Miller of the Department of Bioethics at the National Institutes of Health rightly argues, "It is socially irresponsible to hasten new pharmaceutical products to market or validate new medical or surgical procedures if a conservative burden of proof has not been met and reasonable doubts persist about their therapeutic merit" (Buchanan & Miller, 2006). Fortunately, and after myriad trials over decades of research, the scientific burden of proof has been met regarding the safe and effective merit of dental amalgam in the United States.

Conclusion: Justice

Ultimately, it is unjust to discount legitimate public health concerns when conducting RCTs with human participants in the study of novel treatments and procedures in dentistry. As previously discussed in the case of dental amalgam and potential renal effects from mercury exposure, and in the case of administering green tea extract in oral cancer prevention, RCTs provide the most powerful methodology to assess the development of novel health interventions for patients' self-interest and public health. Harkening back to the first RCT case regarding the administration of postoperative antibiotics in patients with mandibular fractures, that particular study concerned not only the necessity of an additional round of antibiotics, but also the implicit cost. It is imperative that we, as dental professionals give due consideration to the greater ramifications of research and vigorously invest in valu-

able, cost-effective dental interventions that exceed the scientific burden of proof.

If we briefly consider a society without randomized control trials, how would its people benefit from—and learn to trust—novel treatments and procedures? Most importantly, how would such a society be fair towards its people if no strict methodology were used to determine the efficacy and safety of innovative healthcare interventions before making them publicly available? The public health concern is more of a matter of justice. This is ultimately a matter of allocating resources and responsibilities fairly as examined through John Rawls's veil of ignorance, particularly in meeting the healthcare needs of the socially disadvantaged. It is justice that champions the development of viable interventions and worthwhile solutions to positively affect the health of the world's underprivileged.

Above all, as dental professionals, we bear the professional and clinical responsibility not only to honor our patients with respect to autonomy, beneficence, nonmaleficence, veracity, and justice, but also to provide them the best empirically tested care possible. And it is by virtue of randomized control trials with human participants that we can provide our patients with the most scientifically just, clinically sound, and ethically fair methodology in the development of novel health interventions for their self-interest as well as for the interest of population and public health.

RCTs must have sufficient statistical power to provide both useful and reliable knowledge for the dental community and enhance the good of society via enhanced public health.

Empowered by the trust of our patients and the societies in which we serve, we must—as dental professionals—honor the invaluable contributions of our forebears, including that of research subjects, impart our patients with the best standard of oral health care possible, and always uphold a sensitivity to the ethical complexity of serving in our esteemed yet humble profession. ■

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THINKING IN A STRAIGHT LINE

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ABSTRACT

Rational human discourse is not as common as we imagine or as we would like it to be. Sometimes it is necessary to use fallacies and fabrication to get to the point we favor. This essay is an illustrated list of 33 handy tools for avoiding thinking straight.

I am an avid reader of editorials and letters to the editor. I also take notes in meetings. I review papers in the fields of dentistry, education, management, and philosophy. I watch the televised broadcasts of our city council and the water board.

I am a student of public thinking. Generally what draws my attention is the marvelous capacity of a group of humans to start from a common point in fact and end, in a few deft steps, in a full symphony of divergent conclusions, many of them pretty wobbly. The mind works in such wonderful and mysterious ways. Thinking straight is often not one of them. From the famous “motivated misunderstanding”—“I don’t see what you are getting at”—to naked name-calling, we muddle it when given a reasonable chance.

There is an entire realm of secondary considerations. “I was going to make this point, but since Wishywashy brought it up already, I need to go in a different direction or my contribution may not be recognized as ‘distinctive.’” “If I speak last I will have a chance to look like I am contributing the piece that leads to action.” “Well, I see that Flabbergast is going to argue for X. He’s a turkey, so I will start loading my gun to get him.” These are not flaws in reasoning. They are traits of human nature—and there are many more—that predispose us to bent logic.

I sat down a few hours ago to make a short list of human slips in logic and

argumentation. This essay will mention and illustrate the first 33 that popped into my mind. Except for the final one, the Fallacy Fallacy, they are listed in alphabetical order because they tend to be pressed into use randomly, or “as needed,” rather than in any structured fashion.

AD HOMINEM

“You can’t believe everything you read in a supplement to *JADA* because they are financially supported by the companies whose products are featured in the ‘research’ reports.” “Who would believe him? He can’t even think in a straight line.” “It’s just another crazy idea from inside the Beltway.” “Chambers is a pointy-headed intellectual. What would he know about dentistry?”

The thrust of an *ad hominem* argument is at the person who is making the claim, not the merits of the claim itself. It is generally true that stupid people say stupid things, but the unsupported position, not the person, should be the target of refutation. There is no logical reason, for example, that a dental product that is touted by an expert who has a financial stake in the firm that sells the produce is not in fact a superior product.

In its kindest form, the *ad hominem* argument is a corrective to the argument from authority that was common

through the dark ages and the middle ages. Thinkers seldom looked behind an argument if it had a famous name on it. This is the origin of the misconception that *primum non nocere* (first do no harm) is part of the Hippocratic Oath. It is not. As is obvious from the Latin phrase, this is a much later position (probably crafted by a lawyer for the plaintiff who wanted to give it a little weight by attributing it to the Father of Medicine).

A more familiar term for *ad hominem* argument is “name-calling.” Kids learn this technique early in life. In some cultures, notably the Chinese, name calling is a public admission of the weakness of one’s own argument. It translates “I know I have lost the argument, but I am just so angry.”

ADJECTIVES AS ARGUMENTS

“Based on careful consideration of the best evidence, some of the nation’s most respected experts at the prestigious Hokum Institute have prepared a fair-minded proposal that should please all rational patriots.” On the other hand, “It is rumored that some individuals of unknown background, allegedly connected with the so-called Humbug Institute, are furtively circulating a hastily contrived and pretty scary set of ‘unconventional’ ideas.” If we remove the adjectives from these two sentences what we are left with is little more than: “We have two proposals: one from the Hokum Institute and the other from the Humbug Institute.”

The more adjectives in a sentence, the less power it has. It is also annoying

when others offer us the results of their thinking rather than the material they began with.

AFFIRMING THE CONSEQUENCE

“The best materials and careful techniques reliably lead to worthy results. The examples in the CE speaker’s slides are truly outstanding clinical results. Therefore, the clinician is careful and uses good materials—and I could expect the same.” “Unethical people give evasive answers and are afraid of transparency. She said she would rather not explain why she approached the matter the way she did. It begins to look like her motives could be questionable.” “If it quacks like a duck...”

This one was a classic teaching device among the sophists—the precursors to lawyers in Aristotle’s time. It is a perversion of the very sound logical tool called *modus ponens*. If A then B. A, therefore B. That is good logic. If A then B. B, therefore A is lousy logic. The rule might prove the result, but the result does not prove the rule. Like so many of the “thinkos” that follow, part of the process is sound: If A then B might be evidence-based from top to bottom. The conclusions of EBD can still be dangerously wrong, even when the evidence is ironclad.

ANCHORING

“I have heard of dental students who are \$700,000 in debt for their education. What do you think the average student debt is?” “I don’t know the exact statistics on suicide among dentists, but it wouldn’t surprise me to hear five or ten in a thousand, or more.” “We have been talking about how Americans are less trusting of their neighbors, or of professionals, and especially of politicians.

Before we get into this mess, let me tell you a personal story...” “I remember something that actually happened.”

Have you ever wondered why the guy selling refrigerators starts with the top of the line or why executives of a company associated with an industrial disaster avoid guessing or guess low? They are attempting to “anchor” a number in your mind.

All humans are susceptible to this anchoring bias. Its use is as ubiquitous as the Ginsu Knife salesman who names a price and then systematically lowers it and piles on benefits so that the bargain is compelling even at twice what you might have had in mind to begin with. In some experiments by Nobel Prize winner Daniel Kahneman, people were told to write down the last two digits of their social security number and then asked how many African nations there are in the U.N. The guesses about countries very closely tracked the random number issued by the U.S. government. More men will opt for heart surgery when they know that it has a 90% success rate than if they are told that there is a one in ten chance of fatality. Anchoring depends very weakly on veracity—an anchor value can be a long way from the truth and exert a powerful pull. What matters most is that the anchor is concrete. Saying that the debt incurred in purchasing or establishing a dental practice is “pretty high” will be limp. Suggestions that it might be as much as a million dollars (or even stating the irrelevant fact that corporate jets for oil executives might range as high as \$4 million) will move the needle.

ARGUMENT FROM IGNORANCE

“There is no conclusive evidence that fluoride is safe.” “How do you know that the speaker really did all the work that way and that these aren’t just the three best cases out of a couple dozen?” “I have been using the sledgehammer technique

for years. You have not bothered to look at ALL of my results, have you?" "You don't know everything."

There is a very clever sleight of hand in the argument from ignorance. It works like this: "If you do not have proof positive that I am wrong, you had better keep your opinions to yourself. I am right unless you can demonstrate otherwise." This is the "reasonable doubt" defense, but without overstressing the "reasonable" part. The correct logic is that a claim for which there is not conclusive evidence one way or the other is neither known to be true or false—depending on one's preferences. The argument from ignorance places an inappropriate burden of proof on the denier. The burden should be on the person making the claim. That is how we get so many folks believing in Big Foot, flying saucers, and 15% guaranteed return investments. There is no irrefutable positive proof that it might not be so. All scientific claims are vulnerable to this challenge because it is impossible to prove the nonexistence of anything (except logically).

ASSUMING A POSSIBLE OUTCOME AS CERTAIN

"I don't think either of us could live with ourselves if we voted this down and somebody died." "Think of what might happen if you are wrong." "Somebody should have known about the risks at the embassy, somebody should have known that this thing about the wire-tapping would get out, somebody should have check out Snowden. I want to get Somebody in front of our committee this week and I want some answers." "I told you so."

The most savvy individuals in America regarding how to make money are not the hedge fund operators. They are the lottery winners. Megamillions on

a few dollars. Warren Buffet, eat your heart out, piker. The odds are better than 50:50 that at least every two months in this country a single individual will win TWO million-dollar-plus jackpots. Of course the chances of you or I winning like this are infinitesimal. What's wrong with us?

Sometimes this is called "hindsight bias." But it cuts a bit more deeply and is somewhat more treacherous. When we base our before-the-fact decisions on assumed after-the-fact data we are on turf we are not entitled to.

BEGGING THE QUESTION

"Let's start with a straightforward premise. Everyone here wants better oral health. My plan promotes oral health. It seems to me that no one could be against my plan without being hypocritical." "If we could only find a candidate as honorable and noble as Dr. Clayfeet, our program would be certain to advance." "How can we stop young dentists from being unethical?" "Here is my recommendation for how to use diet to live a long, healthy life: eat spaghetti with lots of garlic for 100 years."

Begging the question is a trick question. It is not pointing out that an answer must be given. "Calling the question" is a parliamentary procedure intended to end discussion and move to a vote. "Begging the question" means presenting an argument in the form of a question that contains the answer one is seeking. It is Trojan horse argument. Once the question has been let into the discussion, the outcome is prejudiced. "Have you finally stopped beating your wife" is the classic.

The conclusions of EBD can still be dangerously wrong, even when the evidence is ironclad.

More men will opt for heart surgery when they know that it has a 90% success rate than if they are told that there is a one in ten chance of fatality.

There are two good defenses against a question that is being begged. First, and politicians are getting good at this now, “I do not believe I would characterize the matter just the way you have...” Second, “Man, there are a whole lot of consequences and considerations that follow from what you just said. What a great question. Let’s see if we can lay out all the implications here.”

When the speaker steps to the podium at the begging of a talk and asks, “Can everybody hear me?” He or she is begging a question. Anyone who answers on behalf of “everyone” heard the question but did not understand it.

COMMITMENT TO LOST CAUSES

“Look, we have gone so far, it would be a shame to turn back now.” “I have no intention of letting anyone make me look like a fool.” “I really could have gone either way on this, but as long as you are going to take that attitude, I think you need to know...” “It has been tails five times in a row. It only stands to logic that the odds are now much greater that it will be heads.”

Commitment to lost causes is a quaint human characteristic. These authors were all considered unpublishable during the early part of their careers: Margaret Mitchell, Herman Melville, J. K. Rowling, Beatrix Potter, H. G. Wells, Ayn Rand, Rudyard Kipling, Shel Silverstein, John Grisham, and Agatha Christie. I am glad they were persistent. The very much more numerous nameless ones who pestered editors

with real trash deserve the fame they do not have. Commitment to a lost cause is a sneaky form of fallacy.

Technically, there may be nothing wrong with any single decision in the argument. Where the danger comes is the serial sequence of decisions. The nature of the decision fails to appropriately consider previous attempts. Some people cannot stand to lose even a small argument or to be thought wrong about a minor point. They play double or nothing in hopes of covering these losses. This is something like the sunk cost fallacy in business. When considering whether to proceed with an investment, the previous costs are irrelevant. One should start from scratch at each decision point and ask whether the additional funds to be invested now justify the currently expected outcome.

DISJUNCTION

“He’s an academic. You know it’s a fact that many of them have rusty clinical skills through disuse. A lot of them favor mid-level providers. The rate of ADA membership is depressed in the schools. He probably is a non-ADA member with lousy clinical skill who favors mid-level providers.” “I read in the literature that the odds of having X condition are 20% for those from Group A and 5% of having condition Y. I know the chances of having both are less than 25%, maybe 22 or 23%.” “When it starts to go bad, it goes bad all the way.”

This is one of the most famous little fallacies in the literature. The legendary example is called “Linda.” It goes like this. “Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations.” Respondents are asked to read this description and then rank order the

following descriptions of Linda from the most to the least likely: (a) elementary school teacher, (b) works in a bookstore and takes yoga classes, (c) active in the feminist movement, (d) psychiatric social worker, (e) member of the League of Women Voters, (f) bank teller, (g) insurance salesperson (h) bank teller and active in the feminist movement. There is no right or wrong answer because there is no Linda. But what is interesting is the fact that 85% of Stanford graduate students believe it is more likely that Linda is (h) a bank teller who is active in feminist causes than that she is (f) a bank teller.

It is logically impossible for the combination of two events to be of greater likelihood than either of the events occurring alone. It is not a matter of this being unlikely; it just cannot be. We naturally, but erroneously, sum across probabilities instead of multiplying them. We fashion stereotype buckets and then throw everything that looks close into the buckets. The messy fact is that more details make the picture fuzzier, not clearer. Don't pile on.

DON'T MESS WITH SUCCESS

"The characteristics that made dentistry great in previous generations are exactly the characteristics that will keep it great." "The way we do dentistry around here works fine for us and it should work fine for you too. If you know what I mean." "If it ain't broke..."

All true claims are relative to the environment in which they are expected to work. It is just as pig-headed to try to force others to change because a new idea worked in one location as it is to cling to outdated notions when the world has moved on. The key to finding

the difference has little to do with the quality of the idea or the evidence itself. We must become talented at reading the context.

FALSE ANALOGY

"Using Wonder Stuff makes you a virtuoso of the dental art." "Holding dental educators responsible for the clinical competence of their graduates is like setting the fox to guard the henhouse." "What we need is a war on poverty."

You know an analogy is coming when someone uses words such as "that reminds me of" or "this is just a case of." Sometimes analogies are buried in homey stories; sometimes they are advertising slogans. The point of using an analogy in an argument is that it calls to mind a stereotypical prior pattern with an implication that we either already know how to handle these or what dangers to look out for. A good analogy is useful for highlighting some of the key features of an issue. A bad one is dysfunctional because it misclassifies the situation. This would be a case of saying that all faulty arguments are like the blind leading the blind.

FALSE CONTINUUM

"Let's not consider the radical surgery because there are always varying degrees of danger." "The problem with you is that you make everything black and white. There are always shades of gray." "No, I think I'm just a little bit pregnant."

Decisions—commitments to action—are dichotomous. We buy a luxury car or an economy car. We cannot buy an inexpensive luxury car. Not seeing all the features we want in one package or not being able to detect a big, bright boundary line predisposes us to take no action. A good way to block an action one resists is to begin pointing out the porous edges, the unclear distinctions,

and the impossibility of getting exact measures. Usually a call for further study is a motion to kill by appointing a committee to document the vagueness of the idea.

FALSE DICHOTOMY

"Either he is a conniving scoundrel or he is a fool." "You need to have that tooth restored with an amalgam or a composite filling. Since amalgams show metal, we should probably go with the composite (or alternatively, since composites tend not to last as long, we should use amalgam)." "Time is running out. We have to make a decision one way or the other." "If you really love me, you will take me to see pro wrestling." "I think we should go for plan A because it only costs \$50,000. I'm sure there are those who could figure out how to spend \$75,000. Don't you think it is good to save \$25,000?"

Part of this is very good logic: Either A or B, not A, therefore B. Air tight! So what is wrong with the false dichotomy? It is either good logic or it is not. The problem is that the major premise may not adequately describe the situation. In many cases where A and B are at issue, there is also a C or even a D. Perhaps the best choice is not even on the table yet. Perhaps there really are only two, but they are A and E. False dichotomy is often attempted when an individual sees that Plan A, which is distasteful, is headed for adoption. If the matter can be reframed between Plan B or Plan C, the antagonist to Plan A will have pulled a fast one.

When you hear ultimatum language such as “either,” “must,” or “well, which is it?” immediately ask whether there are other alternatives that have not been considered yet.

INCONSISTENT CRITERIA

“I know I said a while ago that I don’t put much stock in government statistics, but in this case I think they have it exactly right.” “We have always been doing it this way for no particular reason, but it would only be prudent to demand a very high standard of evidence if we were to consider making changes.” “All we have to do is make a generally plausible case.” “Beat your plowshares into swords... [Joel 3:10] Beat your swords into plowshares [Isaiah 2:4]”

It is unnecessary to give any stronger reasons for one’s position than we would expect of others. Ralph Waldo Emerson’s advice about the hobgoblins of small minds only applied to “foolish inconsistencies.” If we never changed our minds about how to think, none of us would have gotten out of kindergarten. But trying to maintain both sides on an inconsistent position at the same time will be a sure signal to our friends that we need to tighten some of the bolts on the mental equipment.

THE J-SHAPED CURVE

“As I recall, the first committees were formed in the 1960s and they were not this organization, but some of the officers who are also with a different group.” “If we check the records I think you will find that I am right about this.” “Most people in this room know a lot less than they think they do.”

The human memory is a shaky foundation for grounding decisions. The foundational difficulty is that we overestimate how secure the foundation is. Research shows that we claim to

know 98% of the facts on typical tests of general knowledge, but we actually are accurate about 80% of the time. Or something like that. There’s a danger in acting on that gap. Actually, we sometimes underestimate our general factual knowledge as well. That is the meaning of the J-shaped curve. We underestimate how much we know of the easy stuff and overestimate how accurate we are with the difficult material. (If we plot confidence on the vertical axis and difficulty of the material—as a function of how many others get it right—on the horizontal axis, the scatter of the points forms a J.)

The lesson is clear: if you are unsure, look it up. And if it really matters, make absolutely sure to look it up. [Griffin, D. & Tversky, A. (1992). The weighing of evidence and the determinants of confidence. *Cognitive Psychology*, 24 (3), 411-435. I was wrong. When subjects know 80% of the facts, they claim to know 99% of them—on average!]

MISSING PREMISE

“All things are possible to those who believe. Perhaps you weren’t believing hard enough just now.” “I can explain that, we just have to assume...” “The reason you cannot see examples of ESP is that disbelievers have traces of that knowledge erased.” “You cannot be expected to be in touch with the true feelings of young dentists because you are an old one, and they are not going to let you in on their secrets.”

The missing premise is a universal cure-all. It is the trump card in reasoning. If one comes up short, all that is needed is to hypothesize the existence of one more fact that would explain the

discrepancy. This might seem to be nothing more than a holding tactic, but wait... If you get good at this sort of thing, it can really work. “Do you have any bullet-proof evidence that every conceivable test for toxicity of amalgam has been tried? Aha!” Even better is the missing premise that cannot be verified. “The reason that I cannot prove the efficacy of thalidomide is that the government has banned research on it.” The latter kind of argument is called a self-sealing missing premise. It is good to carry a few of these in your wallet in case of emergencies.

MOVING THE GOAL POSTS

“Well, of course everyone is happy that the Deltas have agreed to cut back on the types of cases they are going to review, but it doesn’t go nearly far enough,” “Sure, there are a few studies that show, under very particular circumstances, that ARC is safe and effective, but there is nothing like a demonstration that such would be the case generally.” “You show me your best evidence and I’ll tell you whether I think it is good enough.”

The description “moving the goal posts” is not quite right. The goal remains the same for those who take cover under this trick. They always have and always want to maintain their general claim. To do so they must rule out any evidence to the contrary. If the evidence itself cannot be faulted, perhaps it can be ruled out of court as not addressing the deepest concerns. What has changed is their public price for surrendering their position. One suspects that this price is really infinite and the real purpose in moving the goal posts is getting others to quit the game.

NON SEQUITUR

“I know we have been talking about a dues increase, but I would like us not to lose sight of changing membership

profiles.” “We have been talking so much about my research funding. I’d like to hear a little about your views. What did you think of my latest research paper in *JADA*?” “The consensus is that the evidence places candidates A or B at the top of the list, but I don’t really like either, so I suggest we go with C.” “As a dentist, he is one marvelous clarinet player.”

Non sequitur means “it does not follow.” That can include everything from just drifting off in the meeting and coming back in on the wrong page to faulty logic of any type to changing the topic inappropriately to substituting one’s own definition of the issue under consideration for the common understanding others have been working with. If a rational person who has been tracking the argument up to that point is surprised by what you say next, there is a very good chance that you have just pulled a *non sequitur*. It is not so much muffed ratiocination as poor listening.

NO TRUE SCOTSMAN

“All Scotsmen have a chip on their shoulder and are willing to defend their honor at the drop of an insult. Well, McPherson seems like an easygoing fellow. But he’s not a true Scotsman.”

“Because recent grads are so much in debt for their dental education, they tend to cut corners, overtreat, and join corporate dental practices. There may be exceptions, but the rule still holds.” “I have been treating all my patients with X for years. Never a complaint, except for a few sorta strange folks.”

The No True Scotsman argument is simply a matter of refusing to credit examples that run counter to one’s favorite generalization. This dodge keeps the generalizations intact. In fact, I cannot think offhand of any plausible exceptions to this.

PARTIAL REASONS

“Small businesses create jobs, so whatever is good for small business is good for the country.” “The research evidence is overwhelming that sealants are a cost-effective means of lowering caries rate, therefore every dentist should perform this procedures on all patients for which it is indicated.” “Hey, Mikey likes it!”

How could anybody be against a sound argument? This one is scary because a lot of deer have been run over while transfixed by the light of perfectly clear statements. The misstep comes in equating a sound reason for the best reason. An argument may be entirely true, but some other arguments might also be true and more to the point. If Mikey likes whatever cereal, he should eat it (not me), but only if there is nothing better available for breakfast. It is important to get all the considerations on the table early to avoid the trap of investigating the veracity of an ambiguous but unimportant claim, finding that the claim is either true or false, and making the entire decision on the outcome of the investigation. The claim may not have been pivotal to begin with, even if there was heated debate about whether it was defensible. Beware unreasonable narrowing of the question.

Groups are especially vulnerable to “the trap of the debatable second-best argument.” Dr. Easyanswer proposes a patchwork way forward. The committee balks. Dr. Easyanswer offers to prove that his system is at least free from the objections that have been raised. After a thorough investigation, it is determined

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that Easyanswer's method is not fatally flawed by the original arguments raised against it. The pressure to go Easyanswer's way must be resisted. Although a lot of psychic energy went into a battle that Easyanswer won that does not mean other paths might not be better.

Incidentally, it is true that small businesses create the most jobs. It is also true that they create the most unemployment. They churn.

POST HOC ERGO PROPTER HOC

"Have you ever noticed how the odds of something unfortunate happening always seem to go up when we try new ideas?" "We have a pretty successful membership promotion program. Each year we give a list of those who have not paid their dues to a few volunteers. I don't know what the volunteers do, but we always get some of these folks to come back." "I'm sure we won the World Series because a bunch of us made a promise not to change our underwear until we had."

The Latin translates roughly: "After the fact, therefore because of the fact." The fallacy is to attribute a causal relationship to a temporal coincidence. It is true that causes always precede their consequences, but it is not true that everything that precedes a consequence was part of the cause.

A form of this fallacy that is dear to the hearts of so many statisticians is called regression toward the mean. It works like this. Begin with a pool of subjects, programs, or other items that can be arranged from the best to the worst and find the average value. Now pick the bottom 10% and do nothing

else. Measure the bottom 10% again and you will find that their scores have improved on average. I guarantee it! They have regressed toward the mean. This is not magic. It is just a result of having misclassified a few of the folks in the bottom group because the original measurement system was not perfect. The same will happen at the top—they will drop toward the middle on subsequent measurement. Sometimes the placebo effect gets credit for nothing more than inexact initial diagnosis. Some pretty strange remedial programs have received high praise for just happening to be hanging around when faulty data were gathered.

Red HERRING

"Gun registration makes no sense because crazy people need mental health help." "There is little value in courses on ethics in dental school because students have formed their ethical values during childhood, if they are going to have any." "Before we get too deep in the merits of the proposal, I want to explore a completely irrelevant matter."

There was a time when riding to the hounds became too tame. True gentlemen wanted to give the foxes a more sporting chance. They sent the staff out early in the morning to drag dead fish around the park to mask the scent of the foxes and thus challenge dogs a little. The most typical fish used for this purpose was a red herring. The point of this deflected straight thinking is to substitute a faux issue for the real one. You know you are about to enjoy a dinner of red herring as soon as you hear "But I think the real question is..." Red herrings become very plentiful when one party wants to avoid a course of action and the other party has an effective but compromised solution. The strategy is to note that solving a different problem would produce much more favorable results, but since the more

attractive solution is not workable, we had best just not do anything. Red herrings are abundant in the Potomac River and can be studied to one's great benefit by looking in the *Congressional Record* under the heading of "poison pill amendments."

RESEMBLANCE

"It is certainly more likely that a daughter will have blue eyes if her mother does than that a mother will have blue eyes if her mother does." "There are probably more murders each year in Detroit than there are in Michigan because Michigan has a high overall rate of literacy." "I can recall a lot more studies that show the superiority of X than Y." "Most newborn babies look like Winston Churchill."

We exaggerate the familiar. We recall our successes. We overestimate the dramatic. The term "like," as in looking like Winston Churchill, is a relative term and safe because there will always be some positive examples. So many people died needlessly following 9-11 because they were afraid to fly. They drove instead, and because driving is more dangerous, the deaths while traveling between cities increased. Confirmation bias is an example of resemblance. We see what we expect to see, and remember what is useful to our purposes. Research studies with statistically significant results are more likely to be published. And the chances of a mother and daughter having any inherited characteristic are exactly symmetrical.

Because of resemblance we tend to solve the problem we are familiar with rather than the problem we actually face. Here is an example: A bat and ball cost \$1.10. The bat costs one dollar more than the ball. How much does the ball cost? Hint: if you said ten cents, stay out of the stock market or poker games. You are a mark.

SELECTIVE USE OF EVIDENCE

"All women are bad drivers, or at least those I know well are." "I finally found a television station that gives me the news straight—Was it CNN or PBS?" "You just have to hear Dr. Pontificator or read the *Journal of Fabulous Results*." "Whatever you do, don't look at their Web site."

This one is so obvious that there is really only one side of the issue...or... We need to have a consistent point of view as a basis for starting our critical appraisal of any issue. When we cruise around with a completely open mind, things fall out. But there is always a chance of fooling ourselves and trying to fool others by privileging selective sources of information. This problem can become self-reinforcing. We naturally look for and listen better to information that reinforces our existing beliefs than to those that challenge them.

Here is an approach that might be of some use. Learn one perspective and learn it well. Then look for what you believe might be the strongest contrary point of view. Combine them based on their relative merits. Of course your original perspective will still predominate, as it should. Find another perspective that differs from both you have considered. Integrate it. Continue the process until additional information seems to be contributing little to your understanding of the issue.

Here is another strategy. Ask that all opinions (actions not arguments) be laid on the table. Identify the one that irritates you the most. Try to paraphrase it so that its proponents agree that you have understood it. Continue the process.

Finally, when stating your conclusion, mention the strengths of other positions

you have explored. If you have not looked at other positions or cannot accurately characterize them, say so (and watch folks push back from the table). Remember you are looking for a better position. "Better" is a relative term and is vacuous unless you have made the relevant comparisons.

SLIPPERY SLOPE

"Well, I don't know. It sounds like we might be establishing an undesirable precedent here." "First it's going to be just a few little things, and then there will be more, and before you know it we will have agreed to give away the farm." "This one change seems fine, but who knows where it will all end?"

Slippery slope is based on a very sound psychological principle. Habituation is the natural process of letting our standards drift to accommodate the new reality. The Victorians were right to be worried about letting women show their shoes in public. If they had only been a bit firmer, we would have been spared Lady Gaga. Never mind the bare bosomed women of fashion in the late eighteenth century. That was a slope in the other direction.

I am sympathetic to the slippery slope argument because there are cases where small concessions lead to abuse. It is not, however, a generally valid form of argument. If it were, there would be no human progress. Most reasonable change should be incremental. To throw out gradual change is to kill innovation. What is needed is willingness to make the hard judgment calls about how much change is appropriate at the moment and not hide in an imaged future. We must all trust the leaders who follow us to make the hard judgment calls of their day. The slippery slope argument fails when we make our

choices easier today by usurping the choices future leaders will have to make in their time.

SPECIAL PLEADING

“I appreciate the fact that research shows the superiority of approach X, but perhaps we shouldn’t be hasty. I have personal experience with this.” “Speed limits are fine for most people, but they should not always be enforced.” “There are lies, damn lies, and statistics.”

Special pleading is about dealing oneself an exemption. It is soothing because no effort is made to challenge the facts or the principles presented. “We all agree in theory...” One just sidesteps the matter by saying that the rule may not apply in inconvenient cases. One of the all-time virtuoso cases of special pleading concerns King David. He seduced a married woman named Bathsheba. Then he arranged to have her husband disposed of by placing him in the front lines of a battle. The priest Nathan confronted him by recounting a story of a rich man with many sheep who stole the only sheep of a poor man. David blustered that he would kill that scoundrel if Nathan would be kind enough to reveal his identity. David got the bad news but made a special pleading to the king (himself) and that is why King Solomon, the son of Bathsheba, was allowed to build the temple and his father was not. You know it is time to reach for your “special pleading bib” when someone starts, “Well, I’m no expert, but ...” or “Are you certain that is always true?”

SPURIOUS CORRELATION

“The CIA has tracked income disparities in countries since the 1940s because greater wealth at the top is associated with and causes political instability.”

“The proportion of dentists who are women and the percentage of dentists who are members of the ADA are inversely associated, showing that women are less professional.” “We conclude that smoking causes cancer because thousands of studies have shown that the more one smokes the more one is likely to die of cancer.”

It is worth a few points at gatherings of researchers to casually mention that “correlation does not prove causation.” Mostly that is true. There are three classically accepted criteria for demonstrating causation. Co-occurrence (correlation is co-occurrence). The cause must also precede the effect and there should be no other factors that could have affected the relationship but have escaped notice. The latter is a high bar. When there are other factors that might be working, that is called a serious correlation. The tobacco industry tried that one: there might be genetic or environmental factors that cause cancer and also cause people to smoke. They even tried to say that cancer causes smoking. I subscribe to the argument of some researchers who want to see a fourth standard for claiming causation. There should be a plausible theoretical account of the mechanism of operation.

Incidentally, proof of the causal relationship between smoking and cancer has finally been demonstrated using correlational methods. After all, RCTs in this area are strictly out of the question on ethical grounds. But good statisticians with multiple regression techniques have assembled overwhelming evidence.

The danger of relying on correlations in decision making when there is a risk that the association is spurious is that time, money, and effort will be invested

in the null variable. Changing the factor that is along for the ride rather than the one that is driving the phenomenon will be a waste of resources.

STRAW MAN

“I think I have just shown conclusively that you are wrong on any plausible interpretation of your position.” “No one would hold a ridiculous position like that.” “I think the evidence is pretty substantial that school lunch programs have been a failure in reducing the incidence of obesity in America.”

The straw man is a substitute for the real antagonist. It is usually easier to poke holes in a position that no one actually defends. Getting a victory there is not a wasted effort; the other party—regardless of the strength of his or her true position—is now on the defensive trying to explain what the real issue was. In the last presidential campaign, billions of dollars were spent by each party telling us why one of two trumped-up dummies would be ruinous to the country. The folks in the attack ads were caricatures. The Supreme Court, by a vote of 5 to 4 in the Citizens United decision, declared the straw man to be the new American. Unlimited and undisclosed funds can be spent on political advertising, provided that the advertising does not actually endorse a candidate who is running. That only leaves bashing an effigy of the other guy.

TAUTOLOGY

“Reasonable people will see the wisdom of this position.” “We need to consider only those prudent actions that will advance the common good.” “I am doing this because I believe it is the right thing to do.” “I will get the material to you as soon as possible.”

A tautology is a claim that is true because of the meaning of the words, not because of the facts. Learning that our motion was defeated because the other side had more votes, does little to advance our understanding. Corporate literature is filled with this stuff. Companies do not apologize for failure of safety standards that have resulted in deaths; they issue press releases stating that their corporate policy is to promote the highest level of integrity and social welfare. It is not fallacious reasoning (both may be true); it is empty calories. Tautologies are red flags that bear careful monitoring. It is the sentence that immediately follows the true-by-definition claim that has the hook in it.

TRUE BECAUSE I WANT IT TO BE TRUE

“The evidence that DHATs can do some procedures safely and effectively needs to be replicated before it can be accepted. But we are opposed to conducting such studies because we do not believe that is right.” “We do not disagree. You just haven’t seen the wisdom of my position yet.” “Inconvenient truths are a pain in the anatomy.” “This is the only thing that makes sense to me. If you deny this, the whole system just does not seem right,” “I have my own reasons, and, trust me, they are good ones.”

This is likely the most pernicious of the fallacies. Georgetown bioethicist Edwin Pellegrino classifies this as a species of unethical behavior, not faulty reasoning. To make a public claim based on wanting it to be true, and hoping others will not counter it, certainly appears to be fishy. Proving that there is a bad-faith motive is impossible. Only we and our consciences know about these sorts of things. But in the spirit of open reasoning about public matters, all of the motives should be available for inspection. If a better argument can carry the day—hurrah.

WHAT IS UNEXPLAINED IS UNEXPLAINABLE

“The reason all patients cannot be brought to good oral health is that we cannot control human behavior—at least not other people’s.” “If we were supposed to be practicing preventive biological or genetic dentistry rather than mechanical repair of teeth someone would have found the evidence by now.” “Now would be the right time for folks who still believe in the safety of amalgams to produce their conclusive evidence. We can only assume that since they have not done so, there is no such evidence.” “You can lead a horse to water...”

It is one thing to know that something is impossible and another to note that it has not yet been done. “Impossible” ≠ “Unknown.”

There are some very famous “impossibility” or “indeterminacy proofs.” These are rigorous arguments that, starting from a plausible common base, certain destinations cannot be reached. Kurt Gödel proved that our understanding of common numbers can be either complete or consistent—but not both at the same time. Werner Heisenberg proved that, in quantum physics, we can know the location of a particle or its speed and direction, but not both at the same time. Kenneth Arrow proved that three people cannot agree on how to prioritize welfare benefits over more than two alternatives.

The missing premise is a universal cure-all. It is the trump card in reasoning. If one comes up short, all that is needed is to hypothesize the existence of one more fact that would explain the discrepancy.

We need to have a consistent point of view as a basis for starting our critical appraisal of any issue. When we cruise around with a completely open mind, things fall out.

You Too

“Bringing charges against me for having sex with an underage girl named Roxy is politically motivated.” “Your argument is about as old and moth-eaten as you say mine is.” “You have your expertise, I have mine; you think you see gaps in my logic, they clearly are not the flubs we have been hearing from you this afternoon.”

A good counterattack can draw attention away from a flimsy argument. Of course it is gummy logic. It does not make my argument true even if I prove that yours is false. This approach does gain a bit of traction when the same motive or even the same evidence is cited by both sides for diverse conclusions.

The high-brow denomination for this fallacy is *tu quoque*. The common moniker is “the pot calling the kettle black.”

THE FALLACY FALLACY

“Got ya!” “We are recommending against publication of your manuscript because the eigenvalue of the Varimax factor rotation has not been specified.” “Logical fallacies have broken loose and are running amuck in American. If I had to throw out every claim that I know is based on fallacious reasoning, there would be nothing left to believe.”

Yes, there really is a fallacy fallacy. Philosophers mention it from time to time in order to add gravitas to their papers. The fact that a position has been defended by a fallacious argument—recognized as such or not—does not mean that the position is false. Even a

blind pig finds a truffle every now and again. We should not get too uppity about fallacies.

Putting this as strongly and as positively as possible, the purpose of reasoned discussion is not to poke holes in others’ positions. Why we come together after studying the issues as carefully as we can is to find the solid arguments. We are after the good stuff. Although being bright about fallacies in reasoning is a handy and necessary tool in this process, no one ever reliably reasoned his or her way to the smart thing to do by making fun of others’ sloppy thinking. It would be fallacious to think so.

A SUGGESTION

Use this dictionary when reading the scientific literature, watching the news (especially the talking-heads shows), and at meetings. Make a photocopy and take it to your next committee meeting. I am pretty certain it will make you a better listener even if it does not make you the most popular person in the room. And remember, it is better to find your own faults in thinking than to let others do the job for you. ■



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