Forum

An introduction to "nudge science"

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ABSTRACT. Let's begin by addressing the most obvious question: given the vast number of books published on political science every year, why would the Association for Politics and the Life Sciences (APLS) and its journal *Politics and the Life Sciences* expend time, energy, and resources publishing a multiple-author analysis of a series of books that contain little (if anything) about the life sciences, Darwin, or evolution? The answer is that Cass R. Sunstein's recent research on "nudge science" provides an excellent opportunity for APLS to expand its commitment to interdisciplinarity, especially its long-standing interest in behavioral economics. Sunstein, a prolific author, has written many books and scholarly articles defending "libertarian paternalism." Libertarian critics have long argued that the conjunction of "libertarian" and "paternalism" is oxymoronic and that the "liberty principle" or the "principle of autonomy" excludes paternalistic intervention on behalf of rational, competent adults. Over the years, with varying degrees of success, Sunstein has addressed many, if not most, lines of criticism emanating from the political left and right. Like many scholars, his views have evolved over time based on that criticism. This introductory essay will focus on some of the more enduring elements of the conceptual framework and issues that underlie nudge science in the larger context of behavioral economics, including choice architecture, political bans and mandates, political nudges, ethics, and paternalistic intervention.

Key words: Sunstein, bans, mandates, nudges, ethics, influence

In recent years, the philosophical debate over "free will versus determinism" in the context of human decision-making has been usurped by the social and biological sciences. Cass R. Sunstein, a pioneer in the field of behavioral economics, has consistently argued that human decision-making is "framed" by "choice architecture," a set of causal variables that influence (if not determine) our ultimate decisions. We are not always aware of this framework, and therefore philosophers often confuse the "freedom to choose" with the "freedom to choose within architectural constraints." Given the vast number of architectural constraints that shape our ultimate decisions, one might still question, how much room is left for freedom of choice? For now, let's leave that metaphysical argument for those lingering prescientific philosophers.

For Sunstein, choice architecture refers to the variables that ultimately underlie our decisions. At least some of that architecture is contextual and therefore shaped by our own individual life history and/or unique genetic makeup. However, there is also collective choice architecture that permeates specific social, cultural, and/or genetic groups. "Nudge science" seeks to identify the (more or less) universal forces that shape human choice architecture. Sunstein and others argue that scientific knowledge of these universal mechanisms will not only improve our own individual decision-making by exposing our natural biases but also advance our individual and collective ability to influence the behavior of others (hopefully for the better), and perhaps even increase our own ability to resist unwanted interpersonal influence.

Today, philosophical analysis initially focuses on clarifying the meanings of key concepts embedded within arguments. In ordinary language, we use the term "influence" in many different contexts. In physics, scientists use it to indicate natural causal relationships

between nonliving things — that is, the sun "influences" the orbit of the earth. Biologists employ the same term to describe a wide variety of relationships between living things and their environment. Finally, in the human sciences, we use the term "influence" to designate a wide array of relationships between humans, but not without risking confusion between causality with influence.

Interpersonal influence can be exercised between individuals (family, friends, and/or strangers) or between collective organizations (businesses and/or governments). One way to explore the relationship between choice architecture and our ultimate choices is to analyze a few relatively simple, clear-cut examples. For example, we all agree that a decision about whether to go on a picnic on any given day will be influenced (or nudged) by the external physical environment, especially the weather. In short, "nature nudges."[1] However, there may be conflicting opinions about what constitutes good and bad picnic weather. My personal rule of thumb would be, the hotter the better. In the case of conflicting weather predictions, our would-be picnickers might "trust" one local forecaster more than another. If it turns out to be unexpectedly cold and/or raining on the day of the picnic, the availability of a picnic shelter may turn out to be highly influential, if not decisive.

Political bans, mandates, and nudges

Although nature and the external physical environment obviously influence many of our decisions, they do not necessarily determine those decisions. That is because our decisions may also be influenced by the external social and/or political environment. Our decision to picnic at any given park might be externally influenced by legal bans or legal mandates. Many public parks legally ban the consumption of alcohol or legally mandate that dogs be on leashes. Hence, consumers of alcohol and/or dog owners might choose one park over another based on legality. But all legal bans and mandates require monitoring and enforcement, which imply a costly, ever-vigilant police force and judiciary. Depending on whether a local government is willing and/or able to monitor and enforce these legal bans and mandates, those laws might be undermined by a "black market effect," whereby would-be picnickers might deliberately choose to violate those bans and mandates. In fact, many utilitarians agree with Sunstein and argue that it is often more cost-effective for political leaders to

nudge citizens rather than pay the costs of monitoring and enforcing legal bans and legal mandates.

While our choices are obviously "framed" by external physical and sociopolitical architecture, those choices are also shaped by internal, psychological forces. Psychologists now agree that human decisions are ultimately shaped by cognitive operations that have evolved over millions of years and are located in various regions of the human brain: front-back, left-right, and inner-outer. System 1 cognitive operations are "fast, automatic, and intuitive"; they include perceptual and emotive operations. They tend to be associated with the parts of the brain responsible for perception and emotive responses. System 2 cognitive operations are "slow, calculative, and deliberative."[2] "Rational" operations emanate from the frontal lobes or cerebral cortex. As scientific knowledge of System 1 and System 2 operations advances, so will our individual and collective ability to influence and/or manipulate the behavior of others. However, that same knowledge might also advance our ability to resist unwanted political influences. The long-term challenge for nudge science is to distinguish between universal choice architecture that underlies all human decision-making and architectural determinants that are contextual and/or relative to specific individuals and cultures.

Historically, the most successful applications of nudge science have been in the domain of business marketing. The most successful business leaders have long employed knowledge of various cognitive operators to more effectively sell their products and services to consumers. Sunstein and others seek to expand the exercise of science-based influence into democratic politics.

Ethics of political influence

Ethics, like psychology, political science, and economics, is a scholarly discipline. For centuries, theologians and philosophers dominated that discipline. The Western legal and moral tradition focuses on both "knowing" (what to do or not do) and being willing or able (to do or not do it). Thus, the determination of moral responsibility for one's actions involves both rationality (the ability to *know* what is right and what is wrong) and free will (the ability to *do* what is right and the ability to not do what is wrong). The ability to "know" is widely regarded as a System 2 brain function, and the ability to "do" is usually considered to be a product of System 1. For centuries, moral

philosophers argued that ethical behavior is determined by either System 1 "feelings" or System 2 "knowledge." Historically, ethicists argued over whether ethics is anchored in System 1 (feelings) or System 2 (rationality). Today, we know it is both. Philosophers have also long debated the role that moral rules and/or principles play in moral decision-making. Political philosophers still question the degree to which democracies ought to rely on legality (laws) and morality (moral rules) in various contexts.

Sunstein identifies four values or "foundational commitments" that constitute the ethics of political influence in a liberal democracy: welfare, autonomy, dignity, and self-government.[3] Sunstein's four commitments are noncontroversial and deeply embedded in the Western liberal tradition. However, many philosophers would amend that list to include utility, justice, or nonmaleficence. Others might question whether his four commitments are logically independent. For this review, we will assume that these four principles capture the essence of morality in a modern liberal democracy. However, in a democracy, the simultaneous advancement of all four values is often problematic, as the preservation of self-government often conflicts with the single-minded pursuit of welfare, autonomy, and/or dignity. Therefore, politically unpopular bans, mandates, and nudges carry with them a political cost.

Recall that political scientists have long observed that authoritarian political regimes rely almost exclusively on coercive force, in the form of "bans" (Don't do X or you'll be punished by the state!) and "mandates" (Do Y or you'll be punished by the state!). Democratic regimes, in contrast, must set moral and/or legal limits on the use of coercive force. Left-leaning democratic regimes tend to emphasize human welfare, often at the expense of autonomy and self-government. Sometimes welfare liberals are even willing to employ coercive bans and mandates in pursuit of welfare. Right-leaning political philosophers, in the libertarian tradition, may value autonomy and dignity over both welfare and liberal democracy. For Sunstein, the key battleground lies in the distinction between legal mandates, bans, and the exercise of political influence.

Political bans, mandates, and influence

Worldwide, political regimes tend toward either authoritarianism or democracy. Therefore, for better or worse, all regimes aspire to exercise both coercive force and influence over citizens. Authoritarian regimes rely almost entirely on coercive force by monitoring and enforcing legal bans and mandates, which often dictate not only what is good but also how to pursue it. Democracies must rely more on the exercise of political influence, or nudges.

Democracies respect the right of individuals to pursue what they consider to be the good things in life, as long as that pursuit does not harm others. Although democracies respect individual autonomy, they tend to employ combinations of political coercion (bans, mandates) and political influence (System 1 and System 2 nudges). However, unlike authoritarian regimes, democratic regimes must morally justify bans, mandates, and even nudges. For example, most Western democracies employ System 2 nudges (based on reason), which mandate that private corporations conduct scientific research on the costs and benefits of the products and services they offer and clearly and accurately "label" those products so that consumers can make informed decisions about whether to purchase those products or services. In the United States, recent labeling proposals include mandating labels that identify genetically modified organisms (GMOs) and labels that disclose the caloric and sodium content of foods. As a general rule, most of us do not object to labeling nudges. There are also public education nudges, whereby governments mandate that corporations provide information concerning the known risks associated with dangerous or unhealthy activities such as smoking, drinking, distracted driving, and childhood obesity. Again, most of us do not object to public education nudges based on System 2.

However, sometimes governments supplement System 2 nudges with System 1 nudges, which manipulate feelings and emotions — for example, by requiring graphic labels that instill fear of dangerous products or activities. Fear is a powerful motivator. Other System 1 nudges are also based on the manipulation of universal perceptual defaults, including our natural preferences for products presented at eye level and our inclination to choose the first alternative. Therefore, many democracies mandate that cafeterias present unhealthy, high-calorie desserts at the end of the line, below eye level, in less conspicuous places. Although most of us are wary of health-related bans and mandates, we often appreciate, or at least tolerate, most health-related nudges.

Most of us are also naturally wired by choice architecture (individually and collectively) to maintain the status quo, as evidenced by the formation of personal

habits and cultural traditions. Both habits and traditions are notoriously difficult to change. That is why we also have a propensity to avoid making life-changing decisions. Many liberal democracies, therefore, mandate that we make choices, such as deciding whether to be an organ donor before getting a driver's license. Democracies are more likely to employ automatic enrollment via default decisions, which offer passive "opt-out" benefits rather than active "opt-in" benefits. Hence, many democracies employ default opt-in enrollment in pension plans or the use of green energy options, with a freedom-preserving "opt-out" option. We are also naturally programmed to avoid harm rather than to pursue benefits, which is why many democracies worldwide invoke fear rather than merely promise future benefits. Similarly, we are also naturally predisposed to act in pursuit of short-term benefits and the avoidance of short-term harms and less inclined to pursue long-term benefits or avoid long-term harms. In part, that is why System 2 scientific arguments that warn of long-term harms associated with obesity, poverty in old age, breast cancer, and global warming tend to fall on deaf ears. All of this suggests that in order to be effective, System 2 nudges must occasionally be supplemented by System 1 nudges, and even bans and mandates.

Much human behavior is teleological (or goal directed) and therefore requires the analysis of both means and ends. Empirical psychologists describe what human beings in fact pursue (ends) and how they pursue those ends (means). Ethicists, however, prescribe not only the ends that we all ought to pursue but also how we ought to pursue those ends. As a self-described libertarian, Sunstein embraces the idea that liberty consists of the freedom to choose which ends are worth pursuing, as long as that pursuit does not harm others. Therefore, the *ethics of influence* limits the application of nudge science to helping us achieve the universal ends that all humans value. Sunstein argues that unlike "ends nudges" (which dictate what we ought to pursue), "means nudges" (which dictate how to effectively achieve those ends) are "freedom preserving."[4]

State paternalism

Given the complexities presented by choice architecture and the potential for unintended self-destructive decisions, paternalistic intervention by democracies has become increasingly common. Paternalism, by definition, involves treating an adult as a child, thus violating his or her autonomy and dignity in order to advance that individual's (or group of individuals') welfare by either removing harm or providing an unwanted benefit. The conceptual puzzle stems from the apparent contradiction between the Western concept of "human agency" (autonomy and dignity) and the rapidly growing body of research associated with behavioral economics.[5] For Sunstein, the central question of political ethics is whether autonomy necessarily trumps welfare, dignity, and democracy. If not, under what conditions might paternalistic intervention be justifiable?

In his classic work *On Liberty*,[6] John Stuart Mill laid the conceptual foundation for libertarian antipaternalism in Western democracies. He argued that the only justification for the use of political force (legal bans and mandates) is to prevent or remove "harm to others" and that "harm to self" by rational, competent adults is protected by the liberty principle. According to Mill, paternalistic intervention by government officials must be limited by this "very simple principle." The first step is to determine whether that intended beneficiary (or beneficiaries) is a rational, competent adult. If so, then that official may also inquire whether that person "knows" that an action will (in fact) result in harm to self. If so, that official may present rational arguments in order to change his or her mind. But, ultimately, physical coercion must be avoided. Thus, according to Mill, paternalistic intervention on behalf of rational, competent adults must be limited to the determination of System 2 competence. If that person is a rational, competent adult, then paternalistic intervention must be limited to providing information and issuing warnings to either "do x" or "not do x." Sunstein seeks to soften Mill's antipaternalistic stance based on state-of-the-art behavioral economics, by replacing bans and mandates with well-designed nudges.

There are three long-standing philosophical problems that welfare liberals often cite in opposition to libertarianism's reluctance to allow government to violate the autonomy and/or dignity of "rational, competent adults" in order to advance their welfare: an epistemic problem, a moral agency problem, and a cluster of issues associated with impure paternalism problem. The first two problems are deeply embedded in the Western liberal philosophy, which says that rational, competent adults must be treated as "moral agents" who can be held legally and morally responsible for their actions toward themselves or others. In the United States,

the third problem is often cited as an unanticipated consequence of state paternalism.

The *epistemic problem* arises from the fact that "human agents" (rational, competent adults) may not "know" (for lack of information) what is good to do in order to promote their own well-being (do exercise) or what not to do (do not smoke). Libertarians, in the tradition of Mill, argue that once a rational, competent adult is informed (warned) of the self-regarding risks associated with any activity, government cannot forcefully interfere with that informed choice. But how much information does a rational, competent adult (in fact) need to make a truly informed self-regarding decision? What should that paternalistic governmental official do if there is conflicting public information concerning the degree and/or probability of a specific harmful activity? How much information does a rational agent need before he or she engages in a self-harming activity, such as smoking? If a genetic test were available that might "inform" that would-be smoker of his or her cancer risk, and that would-be smoker refuses to take the test, is that person really informed? Should government sometimes mandate those tests?

The *moral agency problem* hinges on the capacity of moral agents to know what is good or bad for them and the capacity to act based on that information. Even if a rational person knows what is good for him or her (do exercise, do not smoke), that person may not be willing or able to do or not do it. Informed moral agents might freely choose to smoke because "by their own lights" the immediate pleasure of smoking outweighs the long-term health risks. Some humans obviously lack moral agency, including young children and/or adults, who, by their very nature, lack rationality or free will. Today, given the widespread explosion of conflicting scientific information that is readily available, rational, competent adults may be regarded as de facto incompetent. Many substances and activities are now regarded as addictive, including tobacco, alcohol, heroin, and even gambling. Addiction is widely regarded a mental and/or physical disease that justifies paternalistic medical intervention. Thus, the battleground lies in the question of whether person P knows what to do, and if so, can person P do it? As psychologists continue to plumb the depths of choice architecture, it will become more difficult to defend absolute standards of moral agency.

The third problem arises from the emergence of *impure paternalism*, whereby paternalistic intervention by the state (in the form of bans, mandates, and nudges) advances not only the welfare of intended beneficiaries but also that of third parties who provide those benefits or remove those harms. Sometimes these third parties are public officials or their friends or relatives, and sometimes they are for-profit private corporations or nonprofit charitable organizations. Americans often object to impure paternalistic interventions that provide minimal benefit to the intended beneficiary while providing enormous benefits to third-party providers. In recent years, those who lack moral agency (children, the mentally ill, etc.) have often been legally mandated to undergo expensive medical treatments, which offer marginal cost-benefit ratios to patients but provide lucrative financial benefits to third-party physicians, pharmacies, drug companies, and hospitals.

Summary and conclusion

In sum, many (if not most) humans lack the intellectual capacity to acquire and/or process the vast amount of information that is now available. And many of us lack the will, desire, and/or power to act on that information. Sunstein and other modified paternalists argue that the inability and/or unwillingness to process information or the inability and/or unwillingness to act on the basis of information justifies limited state paternalism. This sets us up for the basic question raised by nudge science. In light of recent advances in the social and behavioral sciences, is Mill's antipaternalistic stance still justified? Is paternalistic intervention exercised by the leaders of left-leaning liberal democracies ever morally justified? If paternalistic intervention is sometimes justified, under what circumstances might democracies violate the autonomy and/or dignity of individuals (and groups of individuals) in pursuit of individual and/or collective welfare? Democracies must refrain from the deployment of political bans, mandates, nudges that are enormously unpopular. In Appendix A to *The Ethics of Influence*,[7] Sunstein lists 34 nudges and their corresponding approval ratings, which range from 86% approval for mandatory labels for GMOs to 21% approval rating for "[d]efault assumption of Christianity for census data." Moreover, many acts of state paternalism benefit not only the interests of the intended beneficiaries but also third parties. Therefore, democracies must be wary of paternalistic interventions that line the pockets of third parties, most notably, corporations that contribute generously to political campaigns. Thus, cronyism always presents a threat to welfare-seeking democracies. As leaders continue to warn us of an ever-increasing number of impending

welfare threats and seek to intervene on our behalf, democratic politicians often lavishly reward "cronies" who promise to ameliorate those real, imaginary, and/or marginal threats in exchange for political favors.

So Sunstein's most recent books on "nudge science" are not about freedom and determinism. The fact is that our all of our decisions are influenced by choice architecture. Sunstein's goal is to explore whether democracies ought to employ freedom-diminishing bans and mandates or freedom-preserving nudges. Those decisions, he argues, ought to be made in conjunction with moral values: welfare, autonomy, dignity, and self-government. When the deployment of influence is morally/legally justified, political leaders must, then, decide which kinds of "nudges" (System 1 or System 2) are morally justified and/or efficient. As nudge science advances, the exercise of political influence by democracies may become increasingly more efficient. Thus, the ethics of nudge science is all about when, if ever, to mandate, ban, or influence. If nudges are morally required or morally permitted, then, what kinds of nudges are best employed in various contexts, and for how long?

In the final analysis, we might question the current political status of state paternalism via nudge science in the United States. We may be on the cusp of a resurgence of antipaternalism and the "Twilight of the Nudges."[8] And perhaps religious minorities might gain even more control of our democracy and inflict upon us a mountain of new religiously based bans, mandates, or nudges. If Western democracies continue to engage in paternalistic intervention, how might recent advances in nudge science address some of today's most vexing public policy issues, such as obesity, retirement savings, breast cancer, and climate change?

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