Uncertain about Uncertainty: Understanding the Multiple Meanings of a Crucial Concept in International Relations Theory

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The force of uncertainty is central to every major research tradition in the study of international relations. Yet uncertainty has multiple meanings, and each paradigm has a somewhat unique understanding of it. More often than not, these meanings are implicit. I argue that realists define uncertainty as *fear* induced by anarchy and the possibility of predation; rationalists as *ignorance* (in a nonpejorative sense) endemic to bargaining games of incomplete information and enforcement; cognitivists as the *confusion* (again nonpejoratively) of decision making in a complex international environment; and constructivists as the *indeterminacy* of a largely socially constructed world that lacks meaning without norms and identities. I demonstrate how these different understandings are what provide the necessary microfoundations for the paradigms' definitions of learning, their contrasting expectations about signaling, and the functions provided by international organizations. This has conceptual, methodological, and theoretical payoffs. Understanding uncertainty is necessary for grasping the logic of each paradigm, for distinguishing them from each other, and promoting interparadigmatic communication.

The force of uncertainty is central to every major research tradition in the study of international relations. Realists, rationalists, cognitivists, and constructivists all utilize it in their theories. It is arguably the most important factor in explaining the often unique dynamics of international as opposed to domestic politics. Yet a close look at these different paradigms reveals very different understandings of the concept. This article aims at a systematic conceptualization and categorization of uncertainty. While the focus is on international security, the insights have implications for international political economy and political science as a whole.

Uncertainty has multiple meanings that broadly correspond to these four paradigms of international relations. I argue that realists generally define uncertainty as *fear* induced by the combination of anarchy and the possibility of predation; rationalists as *ignorance* (in a nonpejorative sense) endemic to bargaining games of incomplete information and enforcement; cognitivists as the *confusion* (again nonpejoratively) of decision making in a complex international environment, and constructivists as the *indeterminacy* of a largely socially constructed world that

lacks meaning without norms and identities. More often than not, these meanings are implicit. By exposing them, we can better understand the core distinctions in the most recent international relations scholarship. In fact, I argue that we cannot do so without understanding uncertainty.

The article has conceptual, methodological, and theoretical payoffs. It is always best to be clear about the precise meanings attached to terms to promote scholarly dialogue, especially concerning a concept so central to international relations scholarship. However, this is not just a classificatory exercise. In many cases, paradigms simply cannot be understood without understanding their assumptions about uncertainty, as the concept provides the microfoundations. And different conceptions of uncertainty are also crucial for understanding differences between paradigms.[1] Uncertainty might not be the only distinction, but it is the only one capable of fully capturing their definitions of learning, their contrasting expectations about signaling, and the functions provided by international organizations. Although paradigms are not necessarily synonymous with scientific progress, in much if not most of international relations theory, they constitute the first step in approaching a research question. Without a proper understanding of the internal logic of paradigms and how they compare with others, it is difficult to generate testable and competing hypotheses for research.

In drawing out the alternative conceptions of uncertainty, I first distinguish a trait that separates rationalism and realism on the one hand and cognitivism and constructivism on the other. The former argue that states view their environment objectively and relatively easily, while the latter problematize perception and interpretation. This creates different problems of uncertainty. In realism and rationalism, therefore, uncertainty is a problem of lacking information about others' intentions, but one that can be dealt with decisively. In cognitivism and constructivism, states are uncertain not only about others' intentions, but also of how to understand the information in front of them. This makes them less certain about how to respond.

This first distinction is not particularly controversial, and it is not adequate to capture fully the uniqueness of the four schools. Following this bifurcation, I then turn to differences within the two camps, further refining the notion of uncertainty in each paradigm. Rationalism and realism offer competing conceptions of how states deal with a lack of information that rest on assumptions about how states experience uncertainty, either as fear or ignorance, that lead naturally to different decision-making processes and behaviors. Fearful states systematically discard or discount information about the intentions of others that shows them to be less than hostile. Rather than gather information, they accumulate power. Merely ignorant states, the kind foreseen by rationalism, approach international relations more agnostically, carefully parsing evidence to better assess the intentions of others.

Cognitivism and constructivism differ on the exact source of the subjectivity problem. In cognitivism, information is ambiguous and subjectively perceived because it is complex and political actors possess limited cognitive abilities. States and statesmen rely on a number of cognitive shortcuts to cope with complexity that often has the effect of misperception and error. In constructivism, information is ambiguous because it lacks meaning in the absence of norms and identity. Notions of appropriateness given particular conceptions of self are necessary for interpretation. The malleability of norms and identity make international

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[1] I should stress that I am only characterizing the main tendencies of each paradigm, and many scholars working in one tradition and embracing its general conception of uncertainty will blend elements of others. Unlike Legro and Moravcsik (1999), I do not take issue with these syntheses. Using multiple conceptions of uncertainty is empirically useful. But it is also theoretically dangerous if not done so consciously. We must first be certain of what we mean by uncertainty.

relations indeterminate and continually subject to change on the part of agents. This conceptualization helps to clarify the distinctions between paradigms with much in common.

If the paradigms differ on uncertainty, this should be manifest in their understandings of learning, signaling, and international organizations. Learning is uncertainty reduction, conceptualized differently across paradigms as a logical result of their contrasting notions of uncertainty. International organizations are tools for doing the same. Signaling is the process of uncertainty reduction about another state's ''type'' through state interaction and communication. If there are differences on uncertainty, there should be four different approaches to these issues, each internally consistent and logically derived from a paradigm's core notion of the concept of uncertainty. The literature on these subjects provides a kind of hypothesis testing of the conceptual scheme. Table 1 previews the argument.

Reducing ignorance merely requires the addition of information about the intentions of others, either through the process of signaling or the functions provided by international organizations. As reducing fear can only be accomplished by adding power, learning in realism is not the addition of information but rather the realization of the dangers of the international system. Signaling reveals little of importance, as intentions cannot be trusted. International cooperation in international institutions is inhibited by fears of relative gains stemming from fear. Reducing confusion requires more than the accumulation of information. States in cognitivism need systematic knowledge that helps statesmen navigate the complexities of international politics. Cognitive limitations inhibit gaining knowledge through signaling and learning, although international organizations might provide technical expertise that lessens confusion. Reducing indeterminacy borne of the socially constructed nature of world politics requires norms and identities that define appropriate behavior and allow states to attribute meaning to information. Learning in constructivism is a process of normative change often facilitated by agents, often international organizations, that wield norms and set out to reconstitute identities and interests.

Objective Versus Subjective: Perception and Ambiguity

Data present themselves unambiguously and objectively in rationalism and realism as opposed to ambiguously and subjectively in constructivism and cognitivism. In rationalism and realism, individual actors will perceive and interpret the same stimuli similarly, whereas in cognitive and constructivist theories they are filtered through belief systems, identities, norms, images, or other heuristics that often vary across actors and states.[2] If information speaks for itself, it does not need to be processed in any meaningful way. The decision making of states is therefore relatively unproblematic and often empirically overlooked and not analytically evaluated in rationalism and realism (Bueno de Mesquita and Lalman 1992). For instance, Lake and Powell contrast rationalism with cognitivism, writing that ''cognitivists make a methodological bet that they can explain politically relevant behaviors and outcomes by focusing on how actors process and interpret information…The strategic-choice (i.e., rationalist) approach makes a different bet, namely, that we can explain many important and interesting aspects of world politics by focusing on information asymmetries between actors…[b]y analyzing the strategic setting in which individuals

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[2] There is an interesting new development in realism called neoclassical realism that builds in subjective perception, essentially fusing neorealism with cognitivist insights. Although it is important, I do not review it here. When I refer to realism, I generally mean neorealism. For a review see Rose (1997).

TABLE 1. Meanings of Uncertainty and Their Implications in Four Paradigms

	Realism	Rationalism	Cognitivism	Constructivism
Perception	Objective	Objective	Subjective	Intersubjective
Nature of reality	Objectively real	Objectively real	Objective, but subjectively perceived	Socially constructed but often reified as objectively real
Problems of uncertainty	Lack of information	Lack of information	Ambiguity of information	Ambiguity of information
Conception of Uncertainty	Fear	Ignorance	Confusion	Indeterminacy
Challenge of uncertainty	Prepare for possible conflict	Judge intentions of others	Reduce complexity	Ascribe meaning
Tools for reducing uncertainty	Power	Information	Cognitive shortcuts and knowledge	Norms and identities
Learning	Realization of objective truths about possibly dangerous environment	Addition of information for better representation of reality ("updating")	Mastery of complexity through knowledge, inhibited by cognitive limitations	Acquisition of identities and interests through socialization and persuasion leading to normative change
Signaling and screening	Unimportant due to fear about others' intentions	Central due to ignorance about others' intentions	Impaired by cognitive limitations that prevent objective interpretation of signals	Important for developing understandings of self and other that impair objective signaling once constituted
Role of international organizations in reducing uncertainty	Cooperation inhibited by relative gains because states fear intentions of others	Reduce concerns about cheating by monitoring compliance, reducing incentives to defect and facilitating the signaling of interest in cooperation	Help states cope with complexity of interdependence by providing technical knowledge about complicated issues	Define normatively appropriate behavior, constitute identities and ascribe normative meaning to information

make choices, rather than how they process information…'' (Lake and Powell 1999:30–31). This comes through in characteristics of their conceptions of learning. Realism and rationalism both have an implicit accuracy criterion consistent with their assumption that states can objectively read information and signals coming in from the world around them. Learning involves developing a more precise and correct understanding of their environment (Tetlock 1991).

Some might maintain that rationalists emphasize subjectivity, but this is not the case in an interpretive sense. When rationalists refer to differing perceptions, they are referring to differently held ideas about the strategic situation on opposite sides of any negotiation or adversarial setting owing to private information. A perception is what an actor has when he lacks complete information (Kim and Bueno de Mesquita 1995). ''Beliefs'' in rationalism are the probabilities that actors assign to the likelihood that they are at particular nodes of a game when they are not sure about what kind of game they are playing or the type of adversary they are interacting with (Morrow 1994:chapter 6). They do not have normative content. Similarly situated actors generally interpret and incorporate additional information in the same way. Harsanyi writes that ''if two rational agents have the same information about an uncertain event, then they should have the same beliefs about its likely outcome'' (quoted in Fearon 1995:392). States in these paradigms can be certain at least of what they saw, even if, as we will see, the paradigms differ on the conclusions that states should reach about the appropriate response.

This does not imply that uncertainty is unimportant. The uncertainty in rationalism and realism lies in the lack of information states have about the intentions, interests, and power of those they are interacting with (Mearsheimer 1994; Grieco 1988; Lake and Powell 1999). This is sometimes termed asymmetric or incomplete information in rationalist theories, or ''strategic uncertainty'' (Iida 1993). It is a volume question, not an interpretive one. There is a quantitative deficiency, not an analytical one. In both realism and rationalism, this lack of information presents difficult challenges because the international environment, marked by anarchy, lacks an enforcement mechanism for state deals and an external protector against aggression. This poses problems for cooperation.

In contrast to realism and rationalism, cognitivism and constructivism problematize perception and therefore add an additional element into the uncertainty of international politics, that of interpretation (Steinbruner 1974; Tetlock 1998; Parsons 2007). Adler defines constructivism as ''the view that the manner in which the material world shapes and is shaped by human action and interaction depends on dynamic normative and epistemic interpretations of the material world'' (Adler [1997]:322). Unlike in rationalism, information processing is central. The cognitivists Goldgeier and Tetlock write that the ''natural starting point for a cognitive analysis is to consider…the nature of information-processing task that observers confront when they try to draw causal inferences or policy lessons from world politics'' (Goldgeier and Tetlock 2001:83). The problem posed by uncertainty is ambiguity, which leads to a lack of decisiveness about the proper course. Information requires additional tools to make sense of it, tools that may vary across political actors. States are still engaged in strategic settings in which they do not know the intentions, interests, or power of others, as in realism and rationalism, but they often do not grasp that situation fully due to perceptual difficulties or do not see it the same way because of perceptual differences. This is further seen in that cognitivism and constructivism do not require an accuracy criterion in their definitions of learning, as would be expected given their focus on subjectivity (although cognitivism does not rule out the possibility of a more accurate understanding of objective reality but rather points out the difficulties) (Tetlock 1991; Levy 1994).

Realism Versus Rationalism: State Responses to Lack of Information

The distinction between a lack of information and its ambiguity is not exhaustive. Finer distinctions are necessary. While realism and rationalism both assume objective evaluation of information in an anarchic setting of asymmetric and incomplete information about the intentions of other states, they make different predictions about how states cope with that challenge. The two paradigms agree on what states are uncertain about, but differ in how they experience and cope with that situation.

Realism: Uncertainty as Fear

What is distinctive to realists is the consequences they draw from uncertainty, the inevitably conflictual dynamics in international relations that Glaser (1994) calls the ''competition bias.'' Waltz writes that ''the condition of *insecurity*—at least, the *uncertainty* of each about the other's future intentions and actions—works against their cooperation'' (Waltz 1979:105). Mearsheimer writes, ''[S]tates can never be certain about the intentions of other states. Specifically no state can be certain another state will not use its offensive military capability against the first'' (Mearsheimer 1994:10). The more optimistic ''defensive'' realist Grieco writes the same (Grieco 1993:314). States engage in self-help, manifested in the accumulation of power against potential adversaries, real or presumed, through military buildups and alliance formation. Spirals of conflict, even when states might not have incompatible interests, are the result.

Realists attribute this recurrent pattern of international politics to the combination of anarchy and the possibility of predation, but without fear, anarchy does not necessarily imply competition or conflict, even in the presence of uncertain intentions. Lake and Powell (1999), Keohane (1993), and Glaser (1994) correctly criticize realism for lacking explicit microfoundations to explain the otherwise indeterminate link between anarchy, uncertainty of intentions and conflict, but they do not seek to identify the mechanism. I argue that realism's conception of fear, a deep concern about the intentions of others, provides that link.

The presence of fear in realism is explicit, but the mechanism is often implicit. Mearsheimer writes about intentions: ''Although the level of fear varies across time and space it can never be reduced to a trivial level. The basis of this fear is that in a world where states have the capability to offend against each other, and might have the motive to do so, any state bent on survival must at least be suspicious of other states and reluctant to trust them'' (Mearsheimer 1994:11). Conceived in a way that preserves the possibility of expected-utility modeling of realism and remains true to the paradigm's recent utilitarian formulation, fear is evident in a careful process of selecting information whereby states are skeptical of any signals, gestures, or communication that suggests the intentions of others are benign. Such signs are heavily discounted. Although some realists argue that states assume the worst, this is not an absolute necessity in realism. Realism simply sets a high information threshold for states to feel secure. Mearsheimer writes, ''Another state may be reliably benign, but it is impossible to be certain of that judgment because intentions are impossible to divine with 100 percent certainty'' (Mearsheimer 1994:10).

Therefore, it is not that states are not rationally basing their decisions on probabilities, as has been suggested elsewhere, but rather that because states are fearful, they are skeptical and selective of the information they receive about

benign intentions.[3] Information confirming that other states are hostile passes through more easily and predominates. This selectivity can be seen in Walt (1987), ironically because he is best known for adding the element of a careful review of information about intentions to realist theory. However, read carefully, Walt shows the importance of fear for the paradigm. He argues that states respond to evidence of *aggressive* intentions. Ceteris paribus, an expansionist state is more threatening than a status quo one, as it has made its possibly threatening interests more certain. However, Walt's neglect of how states deal with signs of benign intentions is revealing. This possibility is not explored because such signals are discounted or discarded by states in realism. Only signs of aggressive intentions regularly enter into the ''balance of threat.'' It is a one-way street. This selectivity is also seen in the constant refrain that even if intentions were known to be benign, they could change in the future, meaning that even ''costly signals'' could not reveal a stable type (Grieco 1993; Mearsheimer 1994; Copeland 2000). This has the result that the probability assigned to other states having malign intentions is systematically higher than in other paradigms. Over time, this is the most rational choice.[4] Even those realists, like Copeland, who try to build in the possibly self-defeating effects of coercive action and power accumulation common to rationalism into their models, are still theoretically constrained by this particular conception of uncertainty as fear. Declining states, fearful of provoking a spiral of unnecessary conflict that might lead to a major war they might well lose, will nevertheless always do so if the alternative is inevitable and steep decline. The rising state can never be trusted to be so benign as not to take advantage of its improved position to an unacceptable degree (Copeland 2000:22).

This is the manifestation of fear, not the inevitable product of anarchy and uncertainty about intentions. Without fear, the distinctive features of realism, such as the constant concern of relative-gains seeking and the notion of states as unitary actors, do not emerge logically from the paradigm but are only assumed and have no real paradigmatic status. As Powell (1991) has eloquently argued, unless states pursue power for its own sake, all states seek to maximize absolute gains. Concern for relative gains becomes an issue only when states have the opportunity and the motive to take from others to maximize their own absolute outcome. Adversaries' motives are never certain, but when states are hard to convince that they are not malign, relative-gains seeking results. It is this fear that induces domestic political actors to band together due to their

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[3] Brooks (1997), following the thinking of Keohane (1993:282–283), writes as a result that much of realism is based on ''possibilistic'' reasoning in which the mere possibility that intentions could be aggressive leads states to assume the worst. What might be low-probability likelihoods about the hostile intentions of others are given disproportionate attention. He concludes on this basis that realism is not based on expected-utility foundations, and therefore might not be considered a utilitarian paradigm. Although it is possible to understand fear as an emotion, in the modern incarnations of realism at least, it does not operate in such a fashion (although Crawford (2000) disagrees).

[4] Some write as a result that realists assume states to be ''risk averse,'' although this an inappropriate use of the term as used in expected-utility and prospect theory. The risk involved in terms of judging others' type in a strategic or game-theoretic setting is different than the risk that states are willing to run for gains in utility, which is a characteristic of states independent of others' intentions or the probability of success. Brooks (1997) conflates these. Risk-acceptant actors derive a higher utility from higher payoffs than risk-neutral actors and therefore will make decisions to seek those outcomes at lower probabilities of success than risk-averse actors. This type of risk has nothing to do with uncertainty about others' intentions. In decision-theoretic analyses, variation in risk *propensity* is incorporated into the utility calculus on the basis of the curvature of the *utility* function, whereas in game-theoretic analyses the lack of information about another state's type is incorporated into a separate *probability* term about the adversary and his motivations that is combined with the utility curve. Compare Bueno de Mesquita (1982) and Kim and Bueno de Mesquita (1995). Uncertainty in decision-theoretic models refers to uncertainty about the outcome of a potential conflict that reflects a lack of complete information about capabilities, that is, the probability of success. It is of less interest for this article, as it is a model of foreign-policy choice, not international relations. See Bueno de Mesquita (1982). On prospect theory, see McDermott (1998).

common interest in security, leading realism to assume states are unitary actors. Otherwise, it is an arbitrary presumption. Basing realism on fear brought about by the combination of anarchy and uncertain intentions also helps account for the dynamics posited by realism without the necessity of assuming actual conflictual preferences, as Legro and Moravcsik (1999) mistakenly claim realism must. Fear creates conflicts of interest even where there might not be any in reality.

The implicit role played by fear in realism is seen in its solution to the problem of uncertain intentions. Paradoxically, it is *not* to thoroughly and carefully parse the evidence in search of information about another state's intentions because a state can never have enough certainty to fully let down its guard (Kydd 2005:15). Realists are skeptical about the possibility (Taliaferro 2000–2001:144–145). The threshold is too high. Anxiety driven by not being completely certain about another's intentions is not reduced by knowing the potential adversary better, as one's estimates could be wrong and intentions can always change. Instead, states reduce uncertainty experienced as fear by adding power. Grieco writes: "States are uncertain about one another's future *intentions*; thus, they pay close attention to how cooperation might affect relative *capabilities* in the future" (Grieco 1998:500). Glaser summarizes realism: "Intentions are unknowable, and even if known, could be different tomorrow…States must not overlook the possibility that potential adversaries will use their full capabilities against them, and they therefore must focus on adversaries' capabilities rather than their intentions" (Glaser 1994:56). It is for this reason that realists have no real notion of learning as an accumulation of information about the strategic situation. Learning instead involves what Waltz somewhat confusingly calls "socialization," in which states draw the lessons about what is necessary to survive in a self-help system (Waltz 1979). Socialization implies a social mechanism, which is not actually the case. Instead, learning is essentially a process of *realization* about certain objective facts about the international system. Most importantly, states learn that they must be skeptical about the intentions of others and that only the accumulation of power provides security (Tetlock 1991; Levy 1994). Learning is essentially acceptance of uncertainty as fear.

The implicit mechanism of fear and the consequent focus on power over information explains why realist scholars have dedicated little attention to issues of signaling and screening, as noted by Glaser (1994). While realists often claim that their theory stresses the importance of developing a reputation for being tough as a way of avoiding being taken advantage of, there is little in the core of realist theory that highlights or accommodates the importance of credibility and resolve. Power is what resolves conflicts, not signaling of resolve. And power speaks for itself in realism. There is little need to communicate it, and little difficulty in doing so if it is unknown, making signaling relatively unimportant. States accumulate power not to develop reputations for firmness, but to guard against aggression. Showing weakness is not the danger; being weak is. "Costly signaling," such as building primarily defensive weapons in a strategic situation in which offense is dominant, might signal benign intentions, but no realist would believe states would do this. And the target state would likely not reciprocate, because intentions can change.[5]

Past and recent analyses in the realist tradition have dismissed signaling. Mearsheimer's work on deterrence did not address Schelling's work as a counterargument, much less integrate it into his analysis (Mearsheimer 1983). Press

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[5] Glaser (1994) argues that structural realism "leaves open" the possibility of signaling, but this is the case only if the implicit mechanism of fear, the main impediment, is removed from the paradigm. As the next section argues, this is essentially what rationalism does. Glaser calls his contribution "contingent realism," yet many of his insights draw from nonrealist literature.

argues that resolve is simply a function of the importance of the issue involved. Credibility is a reflection of the power of the adversary, not its previous actions and the information they revealed (Fearon 1994a; Press 2005). This is because fear lurks in the background. Leaders ''*must* do a good job of assessing the credibility of threats. They cannot afford to assume that an enemy is bluffing just because he has bluffed before,'' writes Press (2005:22). They cannot ''dial 911'' for help. Notice, however, that by implication states *can* assume that states are *not* bluffing. States simply do not spend a significant amount of energy judging the intentions of others in an effort to reduce uncertainty about their interests.[6]

Therefore, to the extent that fear varies, it is only in inverse relation to strength. Strength reflects not only material power but also factors that affect its projection such as geography and technological advantages of the offense or the defense (Jervis 1978; Walt 1987; Glaser 1994). Taliaferro (2000–2001) calls these ''structural modifiers.'' These factors might reduce uncertainty experienced as fear in that they reduce the sheer ability of other states to act aggressively and use their capability. Brooks (1997) calls these refinements of the conception of military capacity ''probabilistic realism,'' in which statesmen assess the likelihood of conflict based on physical barriers. States still err on the side of caution about what others might want to take from them but feel a little less anxious if they are separated by a mountain range or an ocean, particularly before the advent of intercontinental missiles. However, none of these factors involve a better or more careful consideration of state *intentions*. These factors extend to assessments of opportunity, not motive. Fear of intentions is the common starting point for all of the different realisms.[7] In this variant of realism, states might recognize that their actions could bring about unnecessary conflict, but anarchy and fear about intentions make it hard if not impossible to avoid. That is why the security dilemma is so tragic.

Rationalism: Uncertainty as Ignorance

Being fearful of others might be a rational choice, but it is not the only one. Realism offers a particular, but not the only way of responding to uncertainty about intentions. By rationalism, I am referring to the tradition in recent international scholarship that draws on microeconomic theories in which political actors seek to maximize their utility within structural constraints, most importantly a lack of information about intentions. States are unsure as to whether others will maintain their end of the bargain, uncertain whether others will keep their word. Cheating, which in collaboration games yields a ''sucker'' payoff, is a key concern (Stein 1982; Grieco 1988; Mearsheimer 1994). In noncooperative situations, they do not trust that the other side is not bluffing. Despite this similar focus on the strategic

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[6] Defensive realists, who assume that state interests are not invariably hostile, might allow more room for screening than offensive realists (Edelstein 2002). But the high level of skepticism that greets efforts to send reassuring signals certainly cuts down on the inferences that can be made from such information gathering.

[7] As many of these ''probabilistic'' realists are identified with the less pessimistic ''defensive'' and ''structural'' strands of realism, as opposed to the ''offensive'' and ''classical'' variants, some might argue that this characterization of realism as driven by uncertainty experienced as fear applies only to the latter. In ''offensive'' realism, security is so scarce that even status quo states must maximize power. In ''classical'' realism, many or even all are driven by power for its own sake. To the extent that ''probabilistic'' realists believe that there are physical and technological features of the structural environment that can reduce the probability of conflict to zero, there is indeed less fear in their analyses. However, for all the variations within realism, fear about *intentions* is common to them all. In the words of Grieco (1988), an advocate of defensive realism, sensitivity to relative gains, the 'k' factor, is always greater than zero because states cannot be certain of intentions. In fact, fear as it is conceived here places a *larger* role in defensive and structural realism because intentions are largely unknown. States predominantly seek security, but the possibility that others are greedy provokes fear. In classical and offensive realism, states should know for certain that others are out to get them. There would be less uncertainty about intentions. They are pessimistic but not unsure. The best review of the different realisms is Taliaferro (2000–2001).

dilemmas created by uncertainty about intentions, rationalism does not necessarily reach such pessimistic conclusions about the prevalence of conflict and the imposition of the will of the strong over the weak.

Some might argue that this is because rationalism simply characterizes the international environment as more benign than realism. This has been implied by the association of leading rationalists, most notably Robert Keohane, with liberalism, historically the alternative to realism that stresses how domestic politics, trade, and technology reduce incentives for conflict and thereby fear (Keohane and Nye 1977; Matthews and Zacher 1995). However, Keohane's second generation of work, which inspired much of the current wave of rationalist literature, was very careful to craft arguments on the basis of realist premises under which egoistic actors are operating in an anarchic environment in which power is a primary determinant of outcome.[8] Still it might be argued that his transaction-costs approach, sometimes misleadingly called ''neoliberal institutionalism,'' applies only to absolute-gains seeking states in the sphere of international political economy. Yet rationalism has in recent years built on the pioneering work of Bueno de Mesquita on expected utility and has more fully developed as a unitary approach that applies to security and conflict as well, what some call ''strategic choice'' (Lake and Powell 1999). In this literature, states are not assumed to have different interests or to be any less predisposed toward aggression than in realism. Both agree that uncertainty about intentions creates unique dynamics in an anarchic environment. Both take power seriously.[9] While a plausible case can be made that rationalism is not coherent enough to constitute a paradigm, there is an equally powerful case that incomplete information forms a common theoretical core that makes it a powerful alternative to realism and more than a methodology.

Therefore, there must be a different distinction between realism and rationalism. I argue that rationalism is more sanguine about cooperation and less convinced that power is the ultimate arbiter in international relations because it does not share the realist notion of uncertainty as fear. In rationalism, states are not predisposed to draw pessimistic conclusions about the intentions of others in the situations of incomplete information. They do not necessarily err on the side of caution. Rationalists model states as being more agnostic. They assume nothing. Uncertainty as a lack of information about intentions without fear is captured by the concept of ignorance. This term, despite its unfortunate and unintended pejorative implications, captures best the state of being partly in the dark and does not refer to the cognitive capabilities of the states involved. It is similar to what Knight (1921) calls, in perhaps the most familiar conceptualization of uncertainty, ''risk.'' Decision makers are not completely certain of the situation they face, but have enough information based on prior experience to attribute probabilities. Rationalism is essentially realism without fear. If credible information indicates another state might be willing and there are possible mutual gains, it is often rational to cooperate. Rationalists have stressed that approaching international politics fearfully might needlessly leave a state worse off by generating arms races and instability (Glaser 1994; Kydd 1997).[10]

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[8] ''We view power, policy, and place as the foundation stones of international politics'' Bueno de Mesquita and Lalman (1992):16; Keohane (1984). Kydd (2005) bases his approach on the ''core realist assumption of the state as a unitary rational actor'' but says nothing about fear.

[9] In situations of complete information, their expectations seem impossible to distinguish. In terms of the consequences of uncertainty about power, they are also identical. The argument that states escalate their war aims when initial battlefield successes indicate superior power is both rationalist and realist. The premise that uncertainty about the balance of power is conductive to war fits both paradigms (Fearon 1995; Goemans 2000).

[10] Some might object to my placement of Glaser and Kydd in the rationalist camp. Glaser has argued for ''contingent'' realism, Kydd for ''Bayesian'' realism. I would argue that the two are realists in the sense that all rationalists are. They take as a starting point actors seeking to realize their interests in an anarchic environment in which power is an important arbiter. There is a reason that both attribute qualifiers to their realism. On Glaser, see the section on costly signaling above. On Kydd, see below.

Overestimating hostility is often just as dangerous as underestimating it. Erring on the side of caution is not always cautious. The difference owes not to different perceptions of the environment by similarly situated actors, but how states cope with it. The intentions of others are not known in either research tradition, but statesmen experience uncertainty and consequently react in different ways.

Given that states are not consistently wary of others, they are more sensitive to information and interested in collecting it. It helps them develop beliefs about the intentions of others with whom they are in strategic relationships. They respond to uncertainty about intentions not just by accumulating power as in realism. They actively evaluate intentions (Keohane 1993:276). As applied to strategic situations, this model of decision-making holds that states assess the relative probabilities of particular outcomes given the information available, which includes *all* data available on the intentions of others regardless of whether it indicates a peaceful or benign adversary or whether it is trade negotiation or arms control talks. Indeed information is identified as one of the two core features of the environment (Lake and Powell 1999). Bueno de Mesquita and Lalman write, ''In international affairs, nations spend considerable sums of labor and money in the quest for information'' (Bueno de Mesquita and Lalman 1992:38).

This interest in collecting information is evident in the attention rationalists pay to learning. Rationalism's notion of learning flows logically from its notion of uncertainty as ignorance (Steinbruner 1974:chapter 2). If uncertainty is simply the lack of information, learning is the addition of more of it, the process captured in the term, ''updating,'' that rationalists often use. In Bayes' theorem, actors use the likelihood of an observed event's occurring given each possible state of the world to update their probabilistic assessments about their environment (Morrow 1994:163). Given that the interpretation of information is not regarded as problematic, adding data is equivalent to developing a better objective understanding of the real world (although there is always a stochastic element, and states could be wrong). They are able to judge more accurately which state of the world they are in. Updating promotes more effective decision-making over time. Kydd writes that Bayesian analysis reveals that ''convergence on correct beliefs is more likely than convergence on incorrect beliefs'' over time (Kydd 2005:19). Tetlock (1991) calls this the ''efficiency'' definition of learning.[11] This is similar to realism, except that states and statesmen are not learning the overarching lesson that states are wise to be fearful. Rather, consistent with uncertainty as ignorance, they are seeking to more precisely identify state intentions and decide whether cooperation or conflict or bluffing or conceding is rational.

Signaling and screening are a primary means by which states accumulate information about intentions. It is particularly important because power alone does not determine outcomes in rationalism, unlike in realism. The distribution of information about intentions, in particular its asymmetric quality, is equally decisive. Schelling writes that ''international relations often have the character of a competition in risk taking, characterized not so much by tests of force,'' as they are in realism, ''as by tests of nerve…Issues are decided not by who can bring the most force to bear in a locality, but by who is eventually willing to bring

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[11] The rationalist notion of learning as the updating of unambiguous information can be seen most clearly (and extremely) in the critique of Fearon by Gartzke (1999). If states can both unambiguously diagnose previous situations, drawing the same conclusions about their causes, and can process this information, conflict cannot be explained. ''War is in the error term.'' If there were factors that systematically affected how decision-makers act in a situation of incomplete information, decision makers would have already factored them into their calculations in their updating process and adjusted their beliefs about whether the other state is inclined to overestimate or underestimate its reservation price. Gartzke is essentially faulting Fearon for not taking rationalist assumptions to their natural conclusion.

more force to bear or able to make it appear that more is forthcoming'' (Schelling 1966:94). Rationalists argue that resolve, a state's commitment to a particular outcome, is crucial. If resolve were simply a function of the interests at stake and if capabilities spoke for themselves, there would be no private information, and states would agree on an outcome short of war, avoiding the costs of conflict (Fearon 1995). But resolve involves a somewhat intangible element as well, a country's will. And it is not known by all as it is a function of intentions. Therefore, in order to prevail in a bargaining situation, whether it is a trade agreement or a territorial dispute, states must send credible signals of the intentions they want to convey (Fearon 1997).

   Domestic institutions can be of great use in this regard. The rationalist interest in the second level of analysis is not simply an assumption about the appropriate level of analysis without theoretical justification. As realism's focus on systemic factors flows logically from the notion of uncertainty as fear, an interest in the second level stems from the notion of uncertainty as ignorance, which makes information and signaling more important. In the case of a deterrence dispute, a state must undertake an action that a state lacking resolve would or could not send. This can be done through ''costly signaling.'' As the accountability of democratic institutions means that leaders face significant costs in case of failure, military escalation by democratic countries during crises is therefore a more credible signal of resolve than similar action by nondemocracies (Fearon 1994b). Another option is to make private information about a country's commitment and capability more public to demonstrate it has the power and the resolve to prevail. Democracies are also more transparent and information-rich, allowing them to more persuasively convey their interests and will when they are resolved, or their peaceful intentions when they want to reassure (Schultz 1999; Ikenberry 2001). Both strategies are attempts to make adversaries more certain of their intentions where they were previously ignorant.

   This does not only apply to international security. Governments are also engaged in strategic relationships with market actors. States try, for instance, with various degrees of success, to demonstrate their credible commitment to maintain low inflation. Capital holders base their decisions on ''rational expectations'' about what future government policy will be. Simmons shows that market actors make probabilistic judgments in an uncertain environment about commitment to stable exchange rates through a thorough analysis of information about the governing party, labor unrest and government stability, among other factors (Simmons 1994). Institutions again allow states to send signals to market actors. The creation of an independent central bank is a costly signal that indicates a commitment to low inflation (Goodman 1992).

   Uncertainty experienced as ignorance as opposed to fear yields very different international dynamics than in realism. Credible signaling allows the realization of foreign-policy successes but also the avoidance of provocations that the accumulation of power alone cannot. Rationalism relishes revealing results often counterintuitive to realism. For instance, weaker states that initiate conflicts often prevail because they have revealed themselves as extremely committed to the cause (Fearon 1994b; Bueno de Mesquita, Morrow, and Zorrick 1997). If states do not necessarily fear the unknown, states might be able in certain instances to signal their interests in cooperation through their behavior. This type of signaling might help generate positive expectations in collaboration games or mixed-motive situations. States might be able to induce spirals of trust rather than spirals of discord, hence the interest in assurance games (Kydd 2000). Kydd (2005) argues that through signaling, states will over time almost always be able to accurately assess intentions. There are very few security dilemmas driven by fear and mistrust, contrary to realist thinking. Signaling might also lead in the opposite direction, however. It can lead to pernicious dynamics in which states

stand firm simply to preserve their reputation regardless of the intrinsic value of the issue at stake. If this is rational for all states, the result is dynamics of escalating conflict that make the world even more dangerous than realism might expect (Schelling 1966). Others are more optimistic, arguing that states invest in their reputation precisely by not bluffing, sending the signal that they are trustworthy actors. This reputation helps states realize gains through diplomacy in areas in which states have greater interests (Sartori 2005).

Without the fears of relative gains brought about by fear, a primary impediment to cooperation under the framework of international organizations, relative-gains seeking, is also partially removed. International organizations help reduce uncertainty and prevent market failure by providing incentives not to cheat, allowing the signaling of cooperative intent, and providing data about compliance. All add more complete information about intentions, reducing ignorance. By lengthening the ''shadow of the future'' and establishing issue linkages, they force states to think more holistically, reducing incentives for short-term defection that might yield momentary unilateral gains at the expense of potentially larger multilateral payoffs to come. This makes all involved more certain and confident that their cooperative behavior will be reciprocated (Axelrod 1981; Keohane 1984). In noncooperative situations, however, international organizations (IOs) often succeed by keeping information about intentions private, so as to prevent escalation in demands by the more powerful party (Boehmer, Gartzke and Nordstrom 2004).

By voluntarily constraining the exercise of their full power, tying themselves down in IOs helps mighty states convey information and reveal their type as trustworthy partners so as to reduce the uncertainties of others about their intentions (Ikenberry 2001; Voeten 2005). Finally, institutions can help states detect possible cheating (Weber 1997). They provide forums for states to exchange information and increase transparency. International organizations can serve as successful independent monitors of compliance or executors of decisions in those situations in which violations are difficult to detect by national parties and states do not trust one another or even themselves to implement or keep to an agreement in the future (Abbott and Snidal 1998; Moravcsik 1999, 2000; Fortna 2003).

Cognitivism Versus Constructivism: State Responses to the Ambiguity of Information

Uncertainty in cognitivism and constructivism is an ambiguity issue that leaves decision-makers indecisive and consequently renders international relations less deterministic and more variegated. But the ambiguity of the international system has different causes. In cognitivism it owes to the complexity of the international system, uncertainty borne of confusion, what Iida (1993) calls ''analytic uncertainty,'' in which actors do not understand the cause and effect relationships of the environment in which they are operating. For constructivists, the world is ambiguous because political actors cannot make sense of the world without attributing meaning to it, which makes international relations uncertain in the sense of indeterminate.

Cognitivism: Uncertainty as Confusion

All scholars who apply the insights of cognitive psychology to international politics stress that statesmen do not see the world exactly as it is. But what distinguishes cognitivism from constructivism is its explanation of this problem of perception. The problem is not that international politics are socially constructed. There is an objective reality that is to a good degree independent of social

action and interpretation. Uncertainty is a function of the unclear signals that policy makers are receiving. Information is ambiguous because the world is complex and can only be approximated and partially understood due to cognitive limitations (Tetlock 1998; Goldgeier and Tetlock 2001). Goldgeier and Tetlock write: ''In our view, the usefulness of adopting a cognitive-psychological approach to the role of ideas hinges on the potential for systematic slippage between policy-guiding mental representations of reality and reality itself'' (Goldgeier and Tetlock 2001:79).[12] Unlike in rationalism and realism, the problem is generally one of too much information, not too little (although making decisions with fragmentary information proves vexing, too). The volume prevents cognitively limited political actors from defining the situation, much less agreeing on the appropriate means of dealing with it. Decision makers ''see through a lens darkly,'' with the ''lens'' capturing the subjective nature of perception, ''darkly'' the inability to see the world as it truly is due to its complexity. The best description of this state, although it unintentionally but unavoidably carries the connotation of a lack of intelligence, is confusion. This is roughly similar to what Knight (1921) calls ''uncertainty,'' in which decision makers do not have enough experience in a given situation to even assign probabilities to the likely effects of different courses of action.

Although this problem is endemic to humans, it is particularly relevant for international systems. Every action has more than one consequence, some if not most of which are unintended, hard to trace, and lack linearity (Jervis 1997). Confusion is exacerbated by two simultaneous developments in the modern world: the increasing interdependence of international relations and the increasing number of tasks that the state is expected to perform. As Haas writes: ''The hallmark of interdependence is uncertainty: there are too many goals, all competing for attention; there is no agreement on the best means for attaining them; the understanding of causes is subject to ideological disputation, not consensus; what is a cause to one actor is an effect to another'' (Haas 1980). Interdependence creates not just the strategic dilemma that rationalists stress, that national outcomes depend on the choices of others. Interdependence also means that the issues that states must grapple with are interrelated and involve an increasing number of actors, making them that much harder to manage. The stress is less on how to get what one wants in a strategic negotiation setting, and more on how states have added an ever-expanding number of objectives that inevitably must be balanced against one another and realized with others (Haas 1992:3–4). The use of the adjective ''expanding'' by the cognitivist Haas (1980) in his discussion of state interests is instructive. Even when the proper balance is identified, states are not sure about how to obtain such an outcome given the uncertain cause-effect relationships involved in complex, often technical phenomena.

The aim of cognitivists is generally to construct generalizable arguments about tools that all human beings use to reduce confusion. Cognitivists identify a number of coping mechanisms in the form of cognitive shortcuts or heuristics that leaders use to make sense of an ambiguous environment. These shortcuts often take the form of biases in perception. Belief systems provide a subjective lens that screens and helps statesmen cope with the abundance of information. They serve as theories providing a general understanding of how the world works, particularly of complicated cause and effect relationships. This is as true in international security as in international political economy, where ''policy paradigms'' simplify the relationship between macroeconomic variables (George 1969; Hall 1993; McNamara 1998; Herrmann, Tetlock, and Visser 1999). The choice of the

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[12] Haas implies an objective reality when he defines recognition by political actors of the complexity of the interdependence of modern international relations as a ''rational cognitive style'' (Haas 1980).

"spiral" or "deterrence" model as a way of understanding international politics can have significant, and polar opposite effects, on the character of international relations (Jervis 1976:chapter 3; Snyder and Diesing 1977).

Closely related to belief systems is the tendency for political actors to seek cognitive balance in the path they decide to take. "Belief system overkill" is the phenomenon in which decision-makers argue that the policy they prefer is best on all dimensions of consideration. Sometimes called a lack of "evaluative complexity," this has both an unmotivated and motivated explanation (Jervis 1976:chapter 4; Tetlock 1991). In terms of the former, it helps actors avoid the difficult intellectual work of weighing multiple values against one another. In terms of the latter, which is more social-psychological than cognitive in nature, it satisfies a need for decision makers to feel that the action they are taking is good and just.

To the extent that they impact perception, all of these cognitive shortcuts question rationalism and realism's claim that political actors objectively read the environment. Instead, they are led by the complexity of their task toward predispositions or biases that both paradigms would regard as ill-suited for avoiding the perils of anarchy. Belief system overkill is particularly incompatible with the notion that all pros and cons are weighted evenly, the probabilistic model of decision making in rationalism. Rather it suggests that preferences often drive interpretation and not the reverse. This does not imply, however, that the use of cognitive shortcuts is irrational. Cognitivists are insistent that this is a rational solution to the complex task that statesmen face. They stress that statesmen must behave as they do given the uncertain nature of their environment and their processing capabilities. Otherwise they could not act (Jervis 1976:172). Shortcuts save actors time and mental energy, and information is inherently ambiguous anyway, even if these constraints are not present. But cognitivism, while often rational, is not rationalist. The difference lies in the characterization of the environment that states face, which is another way of saying the state of uncertainty that actors experience. A theory that stresses the "the complexity of the world...," Fearon writes, "...is not a rationalist account" (Fearon 1995:393).

The notion of uncertainty as confusion is evident in the difficulties in signaling and learning stressed by cognitivists. The focus on cognitive limitations explains a research agenda that stresses policy errors based on misperceptions, even if some cognitivists believe this does not have to be the case (Mercer 2005). The key challenge in signaling is not the distribution of information but the interpretation. Given complexity and confusion, states have difficulty sending clear signals even if their intent is not to deceive (Jervis 2002). This means that objectively credible signals in rationalism that reveal type and reduce uncertainty about another's capabilities and resolve might not get through. As Mercer writes, "Assessing an actor's probable type is a complex inference problem. Reputation models need to overcome the assumption of perfect observability and common interpretation of behavior to capture the complexity of the formation of reputations" (Mercer 1996:32). Statesmen generally assume their signals are clearer than they are and could not be interpreted but one way (Jervis 1976:187). This is a function of cognitive limitations. An individual or state's own interests are clear to it because they simply know more about them.

Screening is also impaired. Most significant is the tendency toward overattribution, sometimes called the fundamental attribution error (Jervis 1976; Tetlock 1998). Actors, it is argued, tend to attribute dispositional rather than situational causes to events or behavior of others. As a result, hostile actions by other states are generally regarded as reflecting hostile intentions rather than as natural responses to situations, including one's own actions. This is a function of seeking cognitive simplicity. It is simply easier to make such an inference than to contemplate the myriad of circumstances necessary for a situational attribution. The

outcome is consistent with realist expectations of behavior, but a different mechanism is operating. They are not anxious, but confused. Recent research by Mercer (1996) has argued that states attribute behavior by adversaries regarded as positive to situational constraints, while negative behavior is attributed to dispositions. This means that when rivals back down in a deterrence crisis, they do not gain a reputation for being irresolute, a dispositional attribution. The theoretical implication is that states do not update their beliefs about an adversary's attributes in these instances as rationalism would predict. Screening problems have profound consequences. While adversaries might not be considered irresolute, nor are they given the credit for having limited and moderate aims that they might deserve. This allows states to persist in a belief that adversaries have hostile intentions and might make detente and rapprochement more difficult.

Uncertainty as confusion makes learning difficult, which is why cognitivists stress that learning takes time and mental energy. Once formed, decision makers instead tend to assimilate new information to previously existing beliefs, what is known as ''consistency-seeking'' (Steinbruner 1974:chapter 4; Jervis 1976:chapter 4). There is too much information and it is ambiguous at best, making it rational for statesmen to not update. Instead, they engage in ''belief perseverance'' (Khong 1992; Levy 1994). Decision makers see what they expect to see. As a result, only massive and sudden failures have been found to induce major policy change. Statesmen generally only learn from their own experiences, not vicariously, given that they have much more information about their own situation than that of others, making it cognitively easier. Consistency seeking blocks the accumulation of useful information that states and statesmen crave in rationalism.

When actors do learn lessons, cognitivists point out, they are often the wrong ones. There is often an inaccuracy bias in cognitivist conceptions of learning, natural given their notion of uncertainty. Given the complex and shifting nature of the world, cognitivists expect that past situations are rarely similar enough for analogical reasoning to yield success, yet cognitively limited actors are drawn to them. Statesmen look for analogies as quick fixes so they do not have to contemplate each case *de novo*, but the lessons are often overgeneralized and do not take adequate account of the particularities of the situation (Khong 1992). They are drawn to superficial similarities between events to avoid the difficult mental work of true comparison. Comparisons tend to be drawn between the present and the most mentally available analog from the past, generally the most recent experience to avoid a cognitively costly mental search of all prior situations. This is sometimes called the ''evoked set'' (Jervis 1976:chapter 5; Christensen and Snyder 1990). Still, this is perfectly rational, as the alternative is decision-making paralysis.

On the other hand, if the environment is not completely socially constructed, increased accuracy should be possible. The term confusion implies the existence of an objectively right answer obscured by complexity. Decision makers in cognitivism do not merely need information, but *knowledge*, frameworks for synthesizing existing bits of data and making it comprehensible. Political actors in cognitivism are not only uncertain about others' intentions; they also lack an understanding of means-ends relationships in a complex world. This explains the emphasis on expertise in cognitivist approaches to international organizations. In cognitivism, institutions reduce state uncertainty, but defined as confusion, not a lack of information about others' intentions. They offer expertise and knowledge that national governments do not possess alone. Their number has increased in direct relation to the growth of interdependence and state responsibility in the postwar era. They might include formal IOs or epistemic communities. They become influential not on the basis of coercive power but by framing issues in such a way as to make them comprehensible (Moravcsik 1999). Knowledge is power, Haas (1990) argues.

Institutions are strongest and most successful when they are based on ''consensual knowledge'' about the definition of a problem and how to best address it. Through institutions' understanding of the complicated cause-effect relationships in technical processes, states realize joint gains. International organizations help states understand how any objective is linked both with their other goals and the goals of others, and the appropriate action to take to realize them. This emphasis on uncertainty experienced as confusion explains cognitivism's interest in the growing influence of science on international politics as a way of overcoming complexity. Science is the consensus that transcends ideological divides and helps actors master a complicated and interdependent environment. International organizations distribute its lessons (Haas 1980, 1992).

Constructivism: Uncertainty as Indeterminacy

Although mentioned less often and less explicitly, I would argue that uncertainty plays an equally large, and possibly larger, role in constructivism than in the other paradigms. For constructivists virtually everything, at least potentially, is uncertain for political actors, in the sense that perception and interpretation are a function of socially constructed understandings.[13] Although there is variation in the paradigm, many argue that very little besides a ''rump materialism'' can be understood objectively (Wendt 2000). In constructivism, subjectivity means that information and actions have no intrinsic meaning or standing absent human interpretation in a social context. But this is not the result of complexity, as in cognitivism. Rather it is because human beings require identities and norms in order to know how to act toward objects and others. In constructivism states are, absent social interaction with others, uncertain of who they are and what they want. Identities and norms provide states with such ''ontological security,'' without which there would be paralysis (Mitzen 2006). Given that interpretation can potentially take so many possible directions depending on the norms and identities that are present, and because the latter are not given and fixed but rather socially constructed and malleable, complexity is the outcome in world politics more than it is the independent variable or the problem to be dealt with, as it is in cognitivism.

The mechanism of uncertainty reduction is social rather than cognitive, reflecting constructivism's roots in sociology as opposed to psychology (even though there is frequent cross-pollination through social psychology). The primary function of any society, domestic or international is to generate shared meanings, which are then reflected in normative rules that constitute identities and interest and define appropriate behavior. In international politics, states and those involved in foreign affairs are socialized into particular understandings of what is appropriate behavior in a given context (norms) for an actor of a particular type (identity) by a variety of political actors and forces (Schimmelfennig 2003; Keck and Sikkink 1998). This interaction, called ''process'' by constructivists, helps states define and constitute their national interests, which are otherwise indeterminate (Finnemore 1996; Rathbun 2004). The solution to the uncertainty problem therefore is not only subjective, it is *intersubjective*. Political actors develop shared norms, understandings, and identities. This provides them a reality that presents itself as objectively real, even if it is only the product of

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[13] There are also considerable differences within the approach about the ability of political scientists to analyze politics objectively and scientifically which has created an epistemological split. So-called ''postpositivist'' or ''poststructuralist'' constructivists argue that the same problem of subjectivity vexes analysts and not just those in the world they study. I only engage the more ''positivist'' leaning constructivists who are more optimistic about reaching objective understandings of subjective phenomena. See Adler (1997) on the differences.

shared understandings, might not be universally held and can be changed (Finnemore 1996; Wendt 2000).

The implication of uncertainty as indeterminacy is that states and statesmen in international relations have somewhat of a *tabula rasa*. They are not predisposed toward conflict or cooperation. States have no inherent interests. In fact, there is nothing intrinsic in international relations that requires states to be the main actors. The focus on indeterminacy is evident in constructivism's interest in the fundamental norms and institutions that underlie international relations, which are taken for granted by most international relations scholars. The very notion of territorial sovereignty is a social construct, the product of a shared set of norms about the appropriate form of political organization. Philpott (2001) demonstrates how state sovereignty is just one of a number of different "international constitutions" that are possible. Hall (1997) analyzes how in the transition from one period to the next, church and state fought not only with material power, but through reference to moral authority in the form of competing legitimating norms. Reus-Smit (1997) shows how different forms of international collaboration are reflections of these core principles that constitute political entities. In terms of its application to more recent events, constructivists take a particular interest in how norms are eroding traditional notions of national sovereignty in which states are the sole arbiters in their internal jurisdictions and free from any international normative constraints. These processes are evident in the practice of humanitarian intervention, the fall of apartheid, the improvement in human rights practices in Latin America, or taboos on particular types of weapons (Sikkink 1993; Klotz 1995; Price 1997; Finnemore 2004). The implication is that international relations, due to its socially constructed nature, can take any number of forms. The direction of international politics is rarely certain.

Constructivism's notion of uncertainty essentially tries to encompass and subsume that of realism and rationalism. Depending on the social structure of international politics, fear or ignorance (or something else) prevails. Like rationalism, constructivism does not embrace fear as an inevitable feature of international relations. Wendt sounds like a rationalist when he points out that states act on the basis of probabilities with no reason to assume hostile intentions a priori. It is only through interaction that states develop a basis of information to assign those likelihoods (Wendt 1992:404). This cycle of action, interpretation, and reaction generates intersubjective expectations about what future interactions will be like. States become socialized into the competitive dynamics of power politics through processes of interaction. The security dilemma is manmade. Once constituted, these expectations impose barriers to signaling, as they form assumptions about the relationship of one state to others, its identity, which then affects perception. Adversary behavior is assumed aggressive. Objective signaling is impeded as it is in cognitivism. However, like in rationalism, states are not doomed to forever repeat the cycles of conflict and acrimony that they are in realism. States embark on this path through a process of reinforcement that changes the dynamics of interaction. Acts of concession or generosity can create a reinforcing spiral of trust as well, but one that it is more transformative than in rationalism. The process of signaling is social and constitutive. As states gather information that leads them to believe they will not be exploited, their understanding of self and others changes from adversary to partner to friend. Uncertainty in constructivism means indeterminacy and highlights the possibility for change. It can even lead to positive and altruistic interdependence of interests in which gains for others are gains for the self.

In this sense, uncertainty is perhaps more pronounced in constructivism than in any other paradigm. It has what Dessler (1989) calls a "transformational ontology." When actors acquire interests, and act on the basis of their

conceptions of what is appropriate behavior, they thereby create the world around them, rather than adapt to it. But given that these identities and norms can vary so wildly, the nature of international relations can take profoundly different directions. In this way, constructivists embrace the difference stressed by Almond and Genco (1977) on the ontological differences of the natural versus the social world. Humans have the ability to reflect on their environment and remake it. Agency is marked in constructivism. Keohane (1988) initially called this school of thought ''reflectivist'' for this reason. Therefore, when constructivists describe the international system as uncertain, they mean that its path is not predetermined. Anarchy is what states make of it, as a prominent exponent writes (Wendt 1992).

As the problem of uncertainty is understood as a lack of meaning, reducing uncertainty or learning is equivalent to defining or redefining norms (Levy 1994). The ''distribution of knowledge'' for Wendt (1992) is not the technical knowledge states or political actors have to make sense of complexity, but rather understandings about self and other, so that adding knowledge (i.e., reducing uncertainty) is therefore equivalent to developing and changing identities (Wendt 1992:392–395). Similarly, Finnemore and Sikkink (1998) understand ''common knowledge'' not so much in a cognitivist sense, but rather as the shared social context of norms and identities. As identities define appropriate behavior, learning is equivalent to normative change. As information is laden with value, learning is a social process that changes the actors involved in a way not true of rationalism. It is constitutive. Unlike in cognitivism, learning does not necessarily include new understandings of cause and effect relationships in a complex world, but rather a reconsideration of fundamental goals.[14] Learning is the reconstitution of social reality, not a better understanding of its causal forces.

Persuasion is the key mechanism of normative change (Risse 2000; Checkel 2001). Although it is possible to think of persuasion in terms of the reinterpretation of interests on the basis of cold, objective, and scientifically derived facts, constructivists generally understand it in a more social way in which information becomes powerful and persuasive by its connection to norms and identity. New goals are adopted because they are right and legitimate. The simple accumulation of information does not lead to learning and normative change by itself. For instance, NGOs do not merely provide information about the human rights violations of repressive regimes. They argue and advocate that liberal, democratic states with a given identity must respond to such violations if they are to stay true to themselves. Without this, the information itself might lack meaning, particularly in cases in which the issue at hand is not yet recognized by international society as a problem. ''Framing'' of an issue so that it resonates with other socially constructed norms or identities becomes particularly important (Finnemore and Sikkink 1998).

Of particular importance in driving this process are ''norm entrepreneurs,'' often in the form of transnational advocacy networks that mobilize support around a new norm, generally with very few material resources. They engage in ''strategic construction'' of identities and interests, using norms to redefine what is considered appropriate state behavior. By doing so, they ascribe meaning to action that previously had no moral content. They reconstitute international politics. While many of their actions are consistent with a rationalist framework in that these groups try to change the material incentive structure of their targets by raising the costs of existing practices, their true weapon is their appeal to the normative principles of sympathizers to take action and socialization pressures in

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[14] Nye (1987) and Wendt (1992) call this ''complex learning,'' but that should not be allowed to blur the conceptual distinction with cognitivism, even if empirically they might be hard to disentangle. See also Haas (1991).

the form of the desire of targets to remain part of the international community. In a mixture of rationalist and constructivist logic, Schimmelfennig (2003) finds that Eastern European states were able to gain access to NATO and the EU by invoking the inconsistency between the norms and behavior of Western members in a process of ''rhetorical action.'' The indeterminacy of a socially constructed world and the uncertainty that this allows in international relations opens up more room for agency than in other approaches.

In addition to NGOs, IOs are important players in this process of learning and normative change. As in cognitivism, IOs in constructivism are both the producers and reflection of particular understandings of an uncertain world. The difference in constructivism is that those understandings are social, not cognitive in nature. Institutions are created on the basis of a common recognition of a mutual goal that is generally normative (Ruggie 1982). International organizations reduce the uncertainty caused by the possibility of cheating not so much through punitive sanctioning or monitoring (although these are limited possibilities) but through their legitimacy, the belief that abiding by the decisions promulgated or reached in the frameworks of IOs should be followed. This is because the underlying purpose is considered right and just, or because states were part of a deliberative process in which all had a chance to participate in the creation of the organization (Hurd 1999). In those instances in which acceptance is merely rhetorical, states can nevertheless subsequently be shamed into meeting their obligations, often through the socialization pressures of an international community of which IOs are the manifestation (Finnemore and Barnett 2004). This might in time lead to genuine acceptance of norms and their institutionalization (Risse, Ropp, and Sikkink 1999). Their role of safeguarding the common interest lends IOs a moral authority based on impartiality that helps them regulate and constitute the behavior of more materially powerful states.

Once constituted, institutions have significant power to promulgate or enforce new norms for states uncertain about what constitutes appropriate behavior. In constructivism, states are more inclined to reinterpret their interests on the basis of changing normative conceptions advanced by IOs rather than adding new ones as they realize their interdependence and increase their responsibilities. They reconstitute international reality by creating new issues. For instance, NGOs and IOs popularized the notion of human rights, which previously had little meaning. States were not so much hostile to human rights as simply indifferent or unaware. International organizations alert states not solely to new cause-effect relationships in a complex world, but rather offer ideas about what states are supposed to do. They define new issues and argue that states have normative obligations, given their identity, to remedy them (Finnemore and Barnett 2004). Finnemore's constructivist argument about the role of UNESCO in promoting the development of national science bureaucracies provides a striking contrast to cognitivism (Finnemore 1993). UNESCO did not advocate a solution to a technical problem, that of a lack of indigenous scientific knowledge. It defined that lack of technical expertise as a problem for states in the first place, even in those instances in which there was arguably no need. States complied, almost universally, not because they were attempting to reduce the uncertainties in or adapt to the objective reality of a complex interdependent world, but instead simply because this is what was socially expected of a modern member state of the UN. International organizations reduced uncertainty understood as lack of meaning of what it meant to be a state, not as confusion about how to do so.

Conceptual Clarity and Paradigmatic Coherence

This article proposes that there are four unique understandings of uncertainty in international relations scholarship, each corresponding to an important

paradigm. Focusing on uncertainty helps us uncover the implicit microfoundations of these traditions, better understand why the lines between them are sometimes blurry, and understand why they offer different hypotheses about learning, signaling, and IOs.

Realism and rationalism, sometimes referred to as neoliberal institutionalism and strategic choice, are often grouped together as part of a broader family. The approaches are united by what states are uncertain about. In both paradigms, states view their environment objectively but are afflicted in particular by a lack of information about others' intentions. The similarities end there, however. States cope with this problem in different ways. Uncertainty in realism is experienced as fear. Realists claim that states are wary about the intentions of others, which can never be known with certainty. There is therefore little theoretical interest in signaling and screening, as the accumulation of information does not ameliorate insecurity. Learning is conceived as simply the realization of and adaptation to this state of affairs. International institutions help little as uncertainty experienced as fear leads to concerns about relative gains, which preclude meaningful cooperation. Realism needs this microfoundation of fear. The other factors it stresses, such as anarchy, are indeterminate. Otherwise, realism becomes rationalism. Rationalism conceives of uncertainty not as anxiety but ignorance. States cope with uncertainty by attempting to accumulate information about intentions. Learning is defined as constantly updating beliefs based on the available data. States send and look for credible signals of commitment on the issues at stake. Institutions help reduce concerns about cheating through monitoring, reducing incentives to defect, and signaling benign intent.

The distinction between cognitivists and constructivists is often unclear because of their mutual interest in how information is perceived subjectively. This leaves policy makers indecisive in both approaches, uncertain of what to do. But uncertainty, while uniting the two, also provides the crucial ingredient for distinguishing between them. Cognitivists understand uncertainty as the confusion statesmen suffer from due to the complexity of their task and their mental limitations. Statesmen rely on cognitive heuristics to make sense of an environment they can never accurately see. Learning is understood as accepting and struggling to cope with that complexity. International organizations are potential sources of scientific knowledge about the complex cause-and-effect relationships between states and their goals. But learning is hindered by cognitive limitations that lead to improper analogies and a tendency to interpret information in a way so as not to threaten preexisting beliefs. These difficulties also significantly hinder signaling and screening, as signals are rarely interpreted as they were intended.

Uncertainty is arguably more pronounced in constructivism than all the other paradigms, although it is less explicit. According to constructivism, states are uncertain about what to do primarily because action is impossible absent norms, which prescribe appropriate action given a set of identities. International relations are uncertain in that they are indeterminate given the *tabula rasa* of state identities and norms. Information has no intrinsic meaning absent these social constructions. Learning in constructivism is not the simple accumulation of information but rather the definition of new identities as information is interpreted through and wedded to normative understandings. International organizations are one of the primary actors in constituting international norms and identities given their moral authority as representatives of the international community's interest.

Besides adding conceptual clarity and distinguishing these different paradigms, the scheme of uncertainty that I offer has broader implications for other debates concerning the status of individual paradigms. Legro and Moravcsik (1999) recently criticized realism for violating core principles and attempted to

redefine it on the basis of several fundamental propositions, one of which is the assumption of conflictual preferences. This has had the result of banishing many self-understood realists, and the general reaction to this argument has been that it is overly narrow.[15] I argue that is it unnecessary. Preferences do not have to be conflictual in realism. But states are not certain that they are not. This fact of uncertain intentions, combined with fear, creates the same mechanisms associated with realism, such as balancing power, without such a restrictive assumption about preferences. Anarchy and fear are powerful enough forces to generate dynamics in realism that distinguish it from other paradigms, while being broad enough concepts to contain almost all of the realists castigated by Moravcsik and Legro.

It is often asserted that rationalism and constructivism do not constitute paradigms, as they are broader sets of social theories that apply beyond international politics (Fearon and Wendt 2002). Rationalism, in particular, is often claimed to be a method rather than a paradigm. This analysis might lead us to different conclusions. Given that we find a common thread of uncertainty as ignorance running through the work of scholars generally recognized as rationalist, uncertainty might provide the glue that makes rationalism stick together. Whether or not it meets Lakatosian or other epistemological criteria for a progressive research tradition is a question beyond the scope of this paper (and might not ultimately matter), but a *prima facie* case can certainly be made. As for the argument that constructivism and rationalism are more abstract meta-theories of the broader social world, the same is true of realism, which can be applied to group conflict of any sort, as well as cognitivism.

None of this should lead us to the conclusion, however, that there is one true notion of uncertainty. The goal is not to reduce our uncertainty about uncertainty by limiting the number of types of uncertainty. All four conceptions undoubtedly play a role in international politics. This article should not be seen as a call to arms for a new war of paradigms. The aim instead is to reduce our uncertainty about uncertainty in the four senses that I use the word. I hope I have shown we have nothing to fear by talking about uncertainty. Through this review, I hope to have added information, but also to have helped remedy some of the confusion borne of the complexity of the concept by systematically addressing it. By doing so, I believe we make our theories more determinate. With more conceptual clarity, perhaps scholars, if not international relations, will be a little less uncertain.

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[15] See the responses in *International Security* (2000) 25: 165–193.

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