



RESEARCH ARTICLE

Ideas, institutions, and incompleteness

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Abstract

We propose a framework for institutional change in the ‘rules-in-equilibrium’ tradition and introduce the term institutional incompleteness. Institutions are incomplete when their constituent rules fail to induce behavioural beliefs about the strategies of others and hence fail to achieve an equilibrium. Even with deliberate preparation ex-ante, there will always be unanticipated situations not covered by the rules that can only be settled ex-post, especially in a complex and changing environment. At this crux, people creatively invoke focal point generating *ideas*. Ideas act as guides for coordination where rules cannot. If no focal points can form, further institutional collapse occurs. To understand which ideas guide better, economists will have to investigate an idea’s content. Our theory offers a way to look at institutional change due to incompleteness while also allowing the requisite room for ideas in explaining the patterned yet indeterminate trajectory of humanity.

Keywords: rules-in-equilibrium; incompleteness; institutional change; institutional incompleteness; awkwardness; spirit of the law; focal points; coordination

Introduction

Institutions take centre stage in many discussions about economic development, political economy, and economic history. But culture, religion, and ideas have also been proposed as sometimes complementary and sometimes rival explanations to institutions. Do ideas matter, and if so, when? We argue that ideas play the critical role of guiding action when institutional rules cannot. We call this institutional incompleteness: institutions are incomplete when their constituent rules cannot reliably coordinate the expectations of the participants. When rules cannot guide, ideas fill the gap. To understand which ideas better guide expectations, social scientists will have to investigate an idea’s content. We draw on the rules-in-equilibrium framework to develop our claim (Aoki, 2001; Greif, 2006; Hindriks and Guala, 2015) and note that institutional change due to incompleteness allows the requisite room for ideas to have independent explanatory power.

It has long been understood that rules expressed as words do not capture ideas *in totum*. James Madison comments as such in Federalist No. 37:

All new laws, though penned with the greatest technical skill, and passed on the fullest and most mature deliberation, are considered as more or less obscure and equivocal, until their meaning be liquidated and ascertained by a series of particular discussions and adjudications. Besides, the obscurity arising from the complexity of objects, and the imperfection of the human faculties, the medium through which the conceptions of men are conveyed to each other, adds a fresh embarrassment. *The use of words is to express ideas* (Carey and McClellan, 2001, p. 183, emphasis added).

In only the most self-referential and empty moral philosophy does anyone follow rules for rules' sake. The purpose of a rule is to translate a higher idea into concrete practice. The body of the law, for example, is made of rules and standards, but its spirit is the source from which judges draw to make decisions. Any economist interested in rules will need to be interested in ideas.

Despite these deficiencies, we usually organize social affairs, private and public, around explicit rules and codes. When we come to agreements, we do so with words. Whenever it is possible that two men have different ideas in their heads and may miscoordinate their actions, rules are useful to lessen ambiguity. Our reliance on explicit rules broadly covers our practical needs but can leave us naked in unexpected moments. Without formal social clothing, we have no clear idea of what to do. We call these moments 'awkward.' When a guest says something that violates a social norm, the dinner party is thrust into an awkward situation. The norm was not clear enough (or the guest was uncouth enough) that it did not help us coordinate. Similarly, cordial tradesmen could end up in an awkward lawsuit when a contract does not specify relevant contingencies, or, more monumental, a nation could end up in an awkward constitutional crisis if the president dismisses his prime minister who refuses to vacate his post.

Awkward moments are always defined relative to a given set of rules. Every set of rules has a set of questions that it cannot answer. If these awkward moments create the possibility for an institution to go off track, then we are able to tell stories about institutions changing endogenously. That is, a particular set of rules might change when it fails to answer a question, and the particular rules define the questions it cannot answer. Hence, institutions are an indirect input into their own change. It is obvious why an exogenous change would make deviating from an institution attractive. It is less obvious how rules themselves might fail to coordinate to a changing environment and even less obvious how coordination develops when rules fail. Life cries louder for an explanation than death; institutional survival cries louder for an explanation than institutional decay.

But not all awkward moments devolve into chaos. The dinner party is not immediately upended when a guest makes a crass comment, and a government does not immediately disintegrate into anarchy in a constitutional crisis. The host of the party might clarify the norm going forward and ease the tension, and the judicial body might clarify the operation of the constitution. Some groups have the capacity to respond to awkwardness and others fail in these critical moments. We note that some characteristics of institutions that may be more or less amenable to generating focal points in awkward moments; these include formal hierarchies, informal embeddedness, impartial judges, foundational documents, abstract rules, totalitarian regimes, and intellectual traditions.

This paper is part of the theoretical literature on institutions. We are addressing some of the central debates that have arisen in this journal, notably the debate between Deirdre McCloskey and her interlocutors on the relative role of 'ideas' as opposed to 'institutions' (McCloskey, 2016a; Greif and Mokyr, 2016; Tabellini, 2016; McCloskey, 2016b). We are also expanding on the framework developed by Hindriks and Guala (2015) along with their interlocutors (Searle, 2015; Smith, 2015; Aoki, 2015; Binmore, 2015; Hodgson, 2015; Sugden, 2015). The rest of the paper will proceed as follows. First, we provide a 'Literature review', in institutional economics and incompleteness to set up our contribution, and in Section 'A theory of institutional incompleteness', we present our main theory. Some institutions are better prepared for the awkward moments than others, which we discuss in Section 'Self-reinforcing and self-undermining elements of institutions'. Section 'Concluding remarks' concludes.

Literature review

Institutions

In the New Institutional Economics, two streams of thought have developed to characterize institutions. The first is the institutions-as-rules approach of Douglass North (North, 1981, 1990, 1991, 2005) and its intellectual antecedents (Ronald Coase, Friedrich Hayek, James Buchanan, Gordon

Tullock, Elinor Ostrom, among others). Institutions are the ‘humanly devised constraints that structure political, economic and social interaction’ (North, 1991, p. 97). By characterizing institutions as rules, this tradition hopes to capture and explain the ways in which humans curtail their activity beyond just their preferences or any hard material constraint. Institutions can be regulations backed up by a government agency or social norms enforced by social disapprobation. Why don’t I grab my neighbour’s sandwich even though I’m hungry and it is within reach? The institution of property rights constrains my behaviour. Once allowed as a variable of analysis, these constraints are clearly indispensable to analyse any economic activity.¹

But the institutions-as-rules formulation was left wanting on several margins. Several scholars developed the alternative definition ‘institutions-as-equilibria’; most notably Avner Greif and Masahiko Aoki (Aoki, 2001; Greif, 2006; Greif and Kingston, 2011) built on work by David Hume (Matson and Klein, 2022) and David K. Lewis (Lewis, 1969). The institutions-as-equilibria approach, as the name suggests, defines the institution as an equilibrium outcome. ‘An institution is a system of social factors that conjointly generate a regularity of behavior’ (Greif, 2006, p. 30). I do not refrain from taking your sandwich because property rights are a constraint on my behaviour, but because I fear credible punishment for my theft, and all other agents with the opportunity to nab a sandwich have a similar fear. Each individual might experience this regularity of behaviour as exogenous to themselves, as something they must respond to, but endogenous to the play of all individuals. Though not strictly identified with game theory, formal game-theoretic modelling has proved useful as a tool to communicate this set of concepts: given an action space, a set of players, and payoff functions, any Nash equilibrium is a possible institution. As no player is willing to deviate given the other player’s strategies, the equilibrium is stable and appears to have the characteristics of an institution.

Why might the institutions-as-equilibria approach be more powerful than an institutions-as-rules approach? Aoki (2001, pp. 14–20) argues the following: (1) The endogenous relationship between an institution and its environment is better specified. (2) History matters via path dependence. (3) Interdependencies of institutions can be made clear by characterizing two institutions as part of the same game or treating one institution as a parameter supporting (or undermining) another. (4) Institutional change can occur through the competition of systems of beliefs. (5) The precise role of statutory law can be made clear, beyond being an expression of the will of some enforcer.

Additionally, Greif (2006) makes a distinction between institutions and institutional elements, the latter being some factor that promotes and sustains the equilibrium. It is through this factor – the institutional elements – that opens the door for cultural explanations. Consider the classic road game.² If all drivers drive on the same side egocentrically, everyone satisfactorily passes by one another. If even one driver deviates from that pattern, a catastrophe can ensue. Both ‘everyone drives on the right’ and ‘everyone drives on the left’ are possible and mutually exclusive institutions-as-equilibria. The natural question is then, which of these two institutions will arise? Road signs, police officers, and driving exams are all factors that establish the common expectations for driving on the right or left. Together, institutional elements set the initial expectations that select among possible equilibria.

The institutions-as-equilibria approach allows culture to be a loose joint that independently explains why some institutions exist even though others may be possible and desirable (Greif, 1994, 2006). Parents educate their children in good manners, adolescents are socialized into various norms, and education midwives students into a larger societal culture. In an environment with multiple possible equilibria, culture is left to select between the multiple equilibria that are proposed; the folk theorem is overcome by introducing culture.

Given multiple possible equilibria, we only need to understand the culture to the extent that we know why it produces the behavioural beliefs appropriate to the institution it is supporting, or the

¹North’s later work extended to explain institutions as a result of beliefs and mental models (North and Denzau, 1994; North, 2005). Institutions may adapt over time, but their ability to adapt is dependent on the beliefs and mental conceptions of individuals who will support institutional changes. This work on mental models was deeply informed by Hayek (1952).

²This example is adapted from Greif and Kingston (2011).

equilibria it is selecting. In other words, the way Greif uses culture only takes what it needs. The meaning behind a cultural belief can be sidelined. This simplification can be useful, especially in conducting economic history, but it leaves little room for forward-looking agents (or social scientists), and little room for ideas.

Hindriks and Guala (2015) unite the rules and equilibrium views under one conceptual umbrella.

They define institutions as ‘rules in equilibrium, where the rules are summarized by the agents using some kind of symbolic representation’ (Hindriks and Guala, 2015, p. 468). The expectations of other players are correlated by rules or symbols – rules matter, but they are not the whole story. If only one equilibrium is self-enforcing, then the need to correlate expectations is uninteresting. Hence, institutions are only worth defining when multiple equilibria are possible and an institution can do meaningful work.³

Figure 1 summarizes what an institution needs to achieve in order to remain stable. The cycle does not have a strict beginning point, but we have to start the story somewhere. Public rules (bottom-right) set every agent’s behavioural beliefs about other agent’s actions. These beliefs motivate strategies which may form an equilibrium – where there are no profitable deviations given the other players’ strategies. Obtaining an equilibrium can either reconfirm or undermine the public rules that induced the initial behavioural beliefs. Similarly, we could start without public rules, but with just beliefs (bottom-left). With uncoordinated beliefs, it may take several rounds of play to reach an equilibrium, but as play becomes regular, agents may begin identifying and codifying the rules that conform with actual play.⁴ Hindriks and Guala (2015) identify the term institution with rules that induce beliefs that successfully make this cycle. These rules can be formal laws or informal norms as long as they are publicly recognized by the relevant actors. No matter where you start, rules play the role of stabilizing expectations over time. Henceforward, by the term ‘institution’ we will be referring to the rules-in-equilibrium definition.

Incompleteness

The concept of incompleteness is already used in economics, law, and mathematics. A brief review of this literature provides a natural starting point for our theory of institutional incompleteness.

In economics, the contract is a primordial object of study: mutually agreed upon contracts specify the terms of trade. The better a contract is specified, the more clarity each party will have; their expectations will align. Even with symmetric information, however, not all possible contingencies are worth the costs of specification, leaving the contract incomplete (Hart and Moore, 1988). The completeness of contracts is limited by a broad set of transaction costs including but not limited to the costs of imagining future contingencies, negotiating a particular agreement, writing the contract without ambiguities, or potential litigation (Hart and Holmström, 1986, p. 90). These costs form the basis of the modern theory of the firm: one approach to mitigate the transaction costs of contracting is to ‘firm up’ – to internalize the transaction into a firm with a residual claimant owner whose decisions

³The most relevant equilibrium concept from game theory is a sequential equilibrium (Kreps and Wilson, 1982). A sequential equilibrium is made up of a strategy profile and a system of beliefs. The strategy profile needs to be sequentially rational – all agents must be maximizing given that system of beliefs. The system of beliefs needs to be consistent – not contradictory with the strategy profile. Rules can create common knowledge in the systems of beliefs such that only some sequential equilibria will be compatible with the rules. A rule is in a sequential equilibrium if there is a strategy profile and system of beliefs compatible with the stated rule. Take, for example, the rule “Northbound Drivers Stay Right, Southbound Drivers Stay Left”. The system of beliefs consistent with people following those rules induces strategies that do not. If I am a Northbound driver, who believes people will follow that rule, I will drive on the left. That rule cannot constitute a sequential equilibrium as the beliefs it induces inform strategies inconsistent with it.

⁴Aoki (2001, p. 202) likens the situation in which we begin with beliefs to Hayek’s *cosmos* needs to be sequentially rational – a grown, spontaneous, or self-organizing order – and the situation in which we begin with rules to Hayek’s *taxis* – a directed, designed, or constructed order (Hayek, 1973).

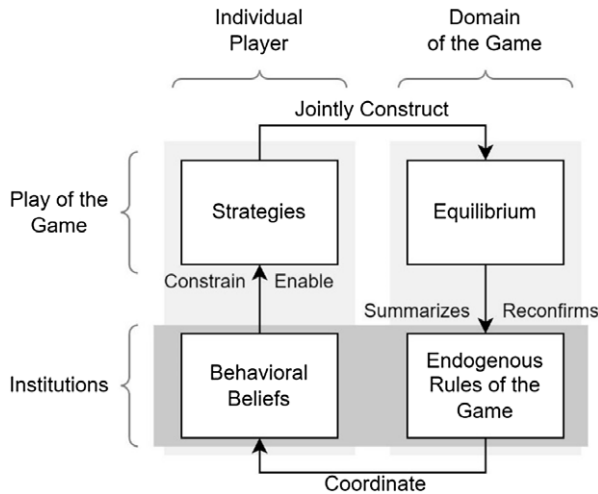


Figure 1. Institutions as rules cum shared beliefs, from Aoki (2007, p. 9).

fill the potential gaps (Grossman and Hart, 1986; Hart and Moore, 1999; Williamson, 1973; Jensen and Meckling, 1976).

But optimal allocation of decision-making power is difficult in practice, and indeed contracts and firms are situated in a legal domain with its own system to fill potential gaps. Anticipating arbitration, courts and legislative bodies create rules – default rules – to fill in the gaps of incomplete contracts. As Ayres and Gertner (1989) point out, the choice of a default rule will change how contracts will be structured going forward, but also, in each arbitration case, the court must always decide if the contract is actually incomplete, and if so, which default rule is applicable. The decision-making power is shifted to the courts' interpretation of the law.⁵

Legal practitioners thus face an analogous problem. Does the law 'unambiguously predict the outcome of a particular case' (Pistor and Xu, 2003, p. 959)? This has been called 'incomplete law', but is better known as the problem of legal indeterminacy: rules by themselves can only take you so far and must always be interpreted (Kress, 1989).⁶ This is extended by Sunstein (1995), who notes that rules necessarily require *ex-post* moral or political judgement: incompletely specified rules have acknowledged exceptions, and with exceptions, there must be a judgement *in each case* whether or not the case is sufficiently different from the exception. Thus, 'even apparently rigid rules do not fully allocate entitlements *ex-ante*', and 'a form of the old art of casuistry therefore emerges as an important aspect of the law of rules' (p. 985).⁷

Though particularly important and hotly debated, the law is not special in its status of incompleteness. Hayek (1967a, p. 102) states very plainly 'there has never been and there never can be a "gap-less" (*lückenlos*) system of formulated rules'. Indeed Hayek (1967b, p. 62) conjectures that 'it would thus appear that Gödel's theorem is but a special case of a more general principle applying to all conscious and particularly all rational processes, namely the principle that among their determinants there must always be some rules which cannot be stated or even be conscious'. Gödel's Theorems, or rather Gödel's *Incompleteness* Theorems, are the famous findings by mathematician Kurt Gödel that proved the following: for any formal system *S* that is (1) internally consistent and (2) sufficiently complex, (a) there is a well-formed formula *G* such that *G* is both true but unprovable, and (b) there is no proof within *S* that expresses the consistency of *S* (Smullyan, 1992). In other words, Gödel showed

⁵Ben-Shahar (2004) notes a range of appropriate enforceability.

⁶See Shapiro and Ripstein (2007) for an overview of the "Hart–Dworkin" debate over the degree to which a body of law contains principles as well as rules.

⁷Rivers of ink have been spilled on the how well the law rules; Hasnas (2007) gives a spirited descriptive summary.

the inability for a mathematical or logical system to be both internally consistent and complete – where complete means that all true statements are *provably* true. We agree with Hayek: the insight of Gödel is all the more salient in real-world social domains. *All* systems must rely on unprovably true assumptions. We now turn to our theory which applies the notion of incompleteness to social institutions beyond contracts and law.

A theory of institutional incompleteness

A *complete* institution is a set of rules which provides clear instructions across all possible situations, while an *incomplete* institution leaves some contingencies uncertain. To unpack our definition, let us talk about awkwardness.

Social commentators frequently employ the term awkwardness, but rarely do social scientists. We will. We call a situation *awkward* when there is a need for some social sanction on how to or how not to act in a certain domain, but none is readily apparent to the people *in* that situation. In other words, there is no common knowledge of socially proper behaviour. No one knows what, in all propriety, to do, but everyone knows that something, in all propriety, must be done.

Awkwardness is an appropriate label for many events. Teens are old enough to be making many decisions for themselves, but they are also constantly dealing with new situations, unarmed with the necessary social experience. They may struggle interacting with authorities, with the opposite gender, or in a crowd. Why are these young teen years awkward? We were asked to play the ‘young adult’ role and the ‘old child’ role at the same time! Other examples abound. Awkwardness is quite common between people who speak different languages, someone who is new to a peer group, or with someone who lacks social awareness. You shouldn’t insult someone when you first meet them, but what is the proper response once an insult is actually made, and what counts as an insult anyway? Awkward. But maybe it’s funny afterwards – awkwardness is a central topic for comedy, after all: asymmetric interpretations of the same phenomena can lead to awkward moments that leave us laughing at our own in-capacities (Klein, 2011). In short, in awkward moments the social rules unexpectedly fail to generate common knowledge about what to do.

Awkwardness can also describe more serious matters. Consider the foundational case in United States constitutional law *Marbury v. Madison* where the power of judicial review is conceived out of an awkward moment. William Marbury was appointed a judgeship the day before outgoing president John Adams left his office – the commission letter was written and sealed. However, incoming president Thomas Jefferson’s administration (specifically Secretary of State James Madison) refused to deliver the letter of commission to William Marbury. So was Marbury’s appointment legitimate? The situation could fairly be called awkward. In the ruling, Chief Justice John Marshall argued that Marbury was right, Madison was compelled to deliver the commission according to the Judiciary Act of 1789 – but that the court could not issue a writ of mandamus as this was outside the scope of its power according to Article III, Section 2 of the Constitution. This established the court’s power of judicial review: it now had the power to rule legislative acts unconstitutional, and all contradictions between the US Constitution and US statutes would be ruled in favour of the Constitution. Nearly every case that makes its way to the Supreme Court involves some awkward element.

Awkwardness is not only an apt description of mundane and humorous social circumstances but also of some of the most critical moments in history. We should expect the responses to failed coordination in awkward moments to vary according to the perceived stakes.

The idea of awkwardness helps us make concrete the idea of institutional incompleteness. Institutions as discussed in the previous section are precisely the means by which we coordinate behaviour in a world where the actions of others are uncertain. Awkwardness ensues when we reach a moment where the institutions that we live with fail to perform. Each example of an awkward situation is an example where the prevailing institutions fail the users: the institutional incompleteness comes to fruition. Referring to Figure 2, an awkward moment is when the rules of the game (the bottom-right quadrant) fail to induce behavioural beliefs (the bottom-left quadrant). An awkward middle-school

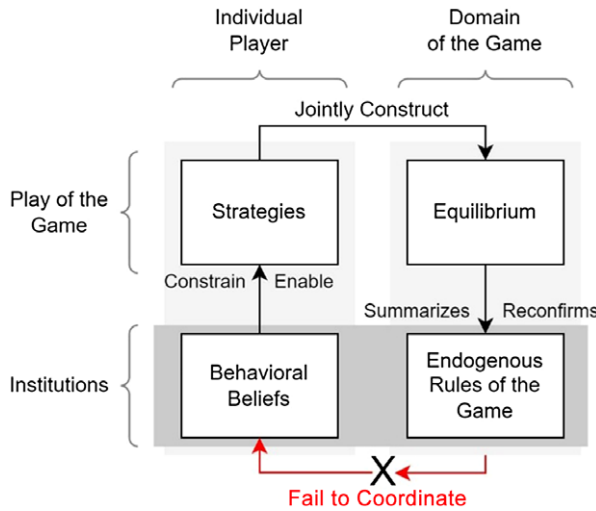


Figure 2. Incomplete institutions as adapted from (Aoki, 2007, p. 9).

party and a constitutional crisis are alike in that neither the constitution nor the social mores of thirteen-year-olds are sufficient to generate common knowledge on how others will act in all situations. The resultant behavioural beliefs are the best guesses of each agent who cannot rely on the rules as a guide.

For Hindriks and Guala (2015), rules are correlating devices to create expectations that reinforce an equilibrium. Given the finite nature of rules, and the infinite stream of situations agents will find themselves in, rules can unexpectedly fail to serve as correlating devices. An informal corollary of Gödel’s theorem can be applied to any set of rules – there are always some possible contingencies which the set of rules cannot handle. If certain transparent systems of logical rules face incompleteness, as Gödel shows, so must systems of social rules – without yet accounting for their greater opacity. In the rest of this section, we explore how the incomplete margins of an institution can be a source of institutional change, but also how ideas can serve as a source of stability in the face of awkwardness.

Institutional change

Institutional incompleteness should be interesting to social scientists in two ways: the ex-ante and ex-post effects of incompleteness. Anticipating institutional incompleteness ex-ante, agents will either design institutions in ways to minimize incompleteness or they will avoid setting up institutions in certain domains altogether. When an unanticipated contingency is realized ex-post, people may respond in unpredictable ways, opening the possibility for radical institutional change. Most of the literature on contract incompleteness focuses on the implications of ex-ante effects, but the ex-post responses are less appreciated (Williamson, 1973; Miller, 1992; Tadelis and Williamson, 2013).

Institutional *change* sounds oxymoronic when institutions are rules-in-equilibrium. As Aoki (2007, p. 5) writes, ‘in the equilibrium approach, how can the notion of institutional change be entertained? By the gradual change of an equilibrium in response to changes in the parameters of a game-form? Or, by a qualitative jump of equilibrium a la Schumpeter?’ An institution can only remain in equilibrium when it can successfully make a ‘circular tour’ around Figure 1, thus, each arrow in Figure 1 introduces an opportunity for the institution to leave equilibrium, and we can then ask how and when any of these changes could occur. While Aoki (2007) is primarily concerned with changes in the *domain* of the game as a trigger for institutional change, we are interested in change due to incompleteness. Let us deal with each in turn.

An institution can change due to a change in the domain, that is, changes in the strategies available to players or the associated payoffs. Such a shift may occur with or without common knowledge leading to behavioural beliefs that do not induce strategies that are in equilibrium. For example, a technology may be introduced to one player that allows them to do something previously impossible while the other players continue to assign a probability of zero to this strategy.⁸ Shifts in the domain affect both the left and top arrows of Figure 1. If players have limited knowledge about others' strategic possibilities, common knowledge cannot be generated such that the strategies played constitute an equilibrium. (Aoki, 2007, p. 20) calls these 'crisis situations', where behavioural beliefs are unstable. The circular tour around Figure 1 becomes nigh impossible without some sort of change.

Institutional incompleteness creates another source of institutional change, the failure of rules to induce behavioural beliefs. When a new situation occurs and the rules do not clearly denote the propriety of any behaviour in these circumstances, behavioural beliefs can change. Players no longer have stable expectations about what others will do. The common knowledge that was created by the rules is no longer common, and individuals may revert to risk-averse or egocentric strategies. Their new beliefs inspire a new set of perceived optimal actions, and they may tumble around the diagram several times until the rules can be clarified or an entirely new set of rules is arrived at. The more likely a situation in which the rules cannot generate common knowledge about proper behaviour, the more likely that institution will be subject to change.

Institutional change due to incompleteness can be called endogenous, that is, the institution itself influences how and when it changes. First, the rules that constitute the institution either do or do not provide instructions for action in each circumstance. Since the institution partly defines the situations in which it might fail, it is partly responsible for the timing of its potential change. Second, the actions prescribed by an institution may keep its actors only in chartered waters for which there is a map, but conversely, it may propel them into uncharted waters for which there is no map.

For example, in soccer, a potentially awkward moment could occur if a ball hits a tree – but this class of events is completely avoided by setting field boundaries that do not contain trees. The boundary rules prevent players from reaching that awkward moment, deeming it irrelevant. In contrast, rules can also engender actions that make an awkward moment more likely. Rules that allow for technological change, for example, are likely to create awkward moments. In racket sports, a rule that allows various racket materials might allow first-movers to gain significant competitive advantage or dominance, leading to an awkward moment that calls for a re-evaluation of the rule.⁹ When institutions allow or even incentivize technological innovation, they will have to interpret the use of these technologies in light of the existing rules or risk chaotic expectations. The same is true for any society which encourages individuals to experiment, explore, or transgress boundaries whether they be geographic, cultural, or intellectual.

Ideas and incompleteness

Your institution is incomplete, and you're facing an awkward situation. Where do you turn? What is left to fill in the gaps? Ideas.

Let us illustrate with an example from baseball. In a so-called 'trap ball' manoeuvre, a defensive player can intentionally fail at making an easy play to gain a larger advantage and keep the offensive team from advancing.¹⁰ When attempted in 1893, the umpire refused to allow the play and simply called the offensive player out, citing that while the play is technically within the rules, it violates the

⁸A new strategy appears via technology in a classic road game where a player suddenly has access to a flying car. Or conversely, some strategy may become impossible with players still believing it is, say, where a two-lane road narrows for a one-lane bridge. Both examples are of exogenous institutional change.

⁹We thank an anonymous reviewer for this example.

¹⁰More specifically, an infield defender can drop a fly ball to turn a double play on a forced base-runner.

spirit of the game – we shouldn't encourage purposeful mistakes (Stevens, 1975, p. 1477).¹¹ The umpire's decision was initially extra-legal but was soon legislated into the rule book as the 'infield fly rule'. The purpose of the legal institution, in baseball and, say, in the common law system, is to promote an abstract but practically meaningful idea: sportsmanship in baseball, and justice in the common law. The rules themselves only exist to further clarify how those ideas will apply in concrete cases or to communicate them to unjust and unsportsmanlike characters. The spirit of baseball, like justice, is ineffable as a whole and thus cannot be simply legislated into being.

The case of the first trap ball incident exemplifies an unspecified contingency. Ultimately, when rules meet new unspecified contingencies, a decision must be made. It could be made by one of the participating parties in negotiation, it could be made by a judge or jury, or it could be made by a default rule as selected by a third party – but it must be made. Our contribution is to notice the explanatory role of ideas when this decision gets made. It is ideas that provide meaning to rules, and it is ideas that must be referenced to make a ruling decision. But when ideas are presented, any of the following could then happen, resulting in institutional change: (1) ideas generate a focal point that aligns with the institution, and the institution carries on with new vitality, (2) ideas generate a focal point that *conflicts* with the institution, and the institution makes a sharp pivot, or (3) ideas *fail* to generate a focal point, and the players play uncoordinated strategies resulting in quick dissolution of the institution.

It is important to present exactly what we mean by *ideas* – what they *are* versus what they *do*. Ideas *are* the visions that get embodied in rules which constitute institutions.¹² But we make no attempt to bound the range of what counts as an idea's content: the spirit of baseball is an idea, as is justice, or the unnamed idea behind the 'rules of the road'. In a given context, what an idea *does* is coordinate expectations in the awkward moments when the rules cannot.¹³ Functionally, an idea maps old beliefs from an earlier period to a new set of beliefs after the awkward moment has taken place, as we show in Figure 3.¹⁴ Importantly, ideas are not merely other behavioural beliefs but are additionally held beliefs about other aspects of the world or human nature. Naturally, ideas are also involved in the routine interpretation of rules. Ideas that are used routinely can be assumed away by the economist who only needs an existing rule to select one set of expectations from another.¹⁵ But when we introduce the possibility of incomplete institutions, ideas have direct relevance. To understand how agents react in awkward moments, the economist needs to investigate the ideas themselves as they are understood by the actors on the ground.

When players arrive at the incomplete margin of an institution in an awkward moment, they are in the classic situation described by Schelling (1960). The players do not have common knowledge but might have a wider context to generate behavioural beliefs out of a focal point. The closest Schelling comes to defining the characteristics of a focal point generally is that they are always 'unique'. But uniqueness is defined in context. There is nothing intrinsic to Grand Central Station at noon that we call unique. It is unique among all locations in New York City and all positions on the clock. Each awkward situation is a particular situation, with its own context for uniqueness. If we want to theorize about whether a focal point exists for a specific awkward moment, we need to investigate its particular context.¹⁶ Wilson (2012), for example, investigates the concept of fairness in an ultimatum game.

¹¹In "The Common Law Origins of the Infield Fly Rule," Stevens (1975) compares the development of rules in baseball to the Anglo-American common law system.

¹²Note the similarity to Storr (2013) and Geertz (1973) who define "culture" as a pattern of shared meanings.

¹³The adapting role of ideas is related to the concept of adaptive efficiency in North (2005). The problem of non-ergodicity and radical uncertainty he raises is comparable to the problem of incompleteness.

¹⁴That idea of competition is more applicable to the institutions-as-equilibria paradigm is something already anticipated by Aoki when he speaks of competition between "symbolic systems of beliefs" (Aoki, 2001, pp. 33–34).

¹⁵A rule can persist whose original motivating idea is now forgotten. In this case, the rule can still serve as a coordinating device but without a motivating idea its followers may fail to navigate the awkward moment.

¹⁶Aoki comments on the "crisis situation" that "Here, the entrepreneurial 'predictive' beliefs and political 'normative' beliefs can be distinguished from endogenous, shared 'behavioral' beliefs that constitute an institution because the former are beliefs held *ex ante* or are advocated only by a partial set of agents prior to the formation of an equilibrium" (Aoki, 2007, p. 21).

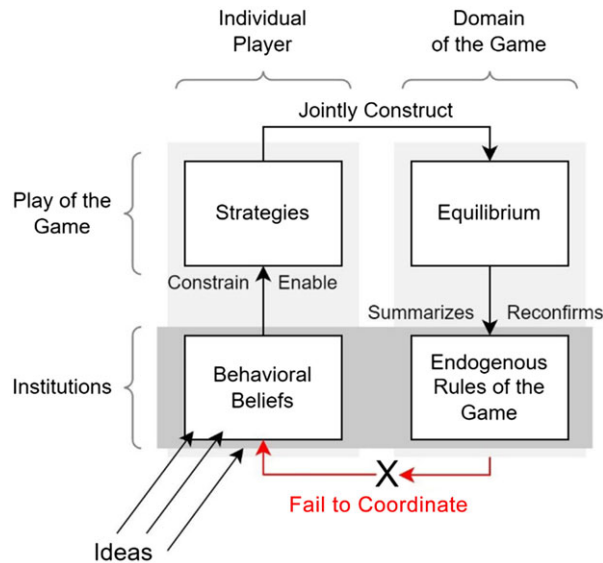


Figure 3. Ideas filling in the gaps as adapted from (Aoki, 2007, p. 9).

Without the ability to make explicit contracts, a responder accepts only what is perceived as a ‘fair’ offer, where a shared idea of fairness regulates what is acceptable to both parties. This concept of fairness, however, is mutually accessible to both agents by virtue of their common human context; it is not an arbitrary preference or mere cultural inheritance.

Consider the work of ideas in the domain of an incomplete contract. Suppose I agree today to buy a bushel of apples tomorrow at noon. Tomorrow comes, my partner shows up, but he spills the crate and half are damaged. A standard incomplete contracting story says that it is now in both of our interests to renegotiate to a lower price, but surprisingly (and awkwardly), he picks up the apples, ignores the damage, and proceeds to try to collect his original payment! We are now traversing territory unanticipated by our contract, and I am now reaching for a relevant, broader idea to guide the way. It could be the idea of reputation in market exchange: I could resolve to walk away and leave a negative review. It could be the idea of charity: I could pay what he asks for out of brotherly love. But it could also be the ideas of violent hatred, zealous justice, or grudge-bearing vows. The point is, something must be done; I must re-evaluate the situation in terms of a new idea.¹⁷

The institution, both when it is incomplete and when it is not, lives in a context. The context is formed in the grand human conversation on why we do what we do and why we are who we are. The conversation is revisited by generation after generation addressing the same timeless questions, pondering the wisdom of the ancients while forging new paths. Ideas then play a very important rule in framing a new circumstance into an old set of meanings. If an institution induces a circular tour around Figure 1, we won’t expect endogenous institutional changes to occur. But an awkward moment leaves room for change. It is possible for an awkward moment to be navigated gracefully, leaving the former rules intact, but in many cases it will not. The determining factor will be the capacity for individuals to turn the intellectual material at hand into new common rules for conduct. Or to use other language, the institution will be robust to awkwardness if an idea can generate a focal point to coordinate behavioural beliefs.

This leaves room for the players to engage in interpretation, persuasion, and entrepreneurship.¹⁸ As Brendan Markey-Towler states, ‘[w]e can establish the “shape,” as it were, of ideas that are likely to

¹⁷See Macaulay (1963) for a classic study of extra-contracting behaviour in the ordinary business of life.

¹⁸See Ellickson (2013) for a discussion of norm entrepreneurship.

succeed in becoming institutions' (Markey-Towler, 2019, p. 28). Ex-ante, the players might be able to predict which ideas win out in a competition for the status of truth – as the focal point generator. He concludes that successful institutional innovations will often be expanding on the precedents and forms of previously successful institutions, such that individuals can easily replicate patterns they are used to.¹⁹ Awkward moments are also opportunities for various intellectual camps to champion their position, hoping to pivot existing practices to reflect their own ideas rather than their opponents (Almudi et al., 2017).

If ideas can provide focal points, why do we need institutions at all? Institutions might be preferable to ideas for two main reasons. First, idea deliberation is time-consuming and costly. If a rule applies, it is more expedient to appeal to the words written in stone. Second, ideas may not produce consistent agreement on focal points; different agents may have different interpretations of the same ideas. Even if deliberation is costless we may argue ourselves in circles without reaching a determinate answer. Rules, perhaps bluntly, prevent this cycle from starting by fixing an expectation. Institutions can be incomplete, but they are consistent. Ideas can be complete, but they may be inconsistent.

Self-reinforcing and self-undermining elements of institutions

If an awkward moment is surmounted, and the institutions exist for the solution to be remembered, a whole class of awkward moments in the future are no longer awkward. On the other hand, if an awkward moment is surmounted, but the new focal point comes into conflict with some other rule in the future, there may be a new class of awkward moments introduced. Following Greif and Laitin (2004), we can call these self-reinforcing institutional elements and self-undermining institutional elements.²⁰ There are two ways in which a set of rules-in-equilibrium can be self-reinforcing: (1) they can generate focal points in crises or (2) reduce the need for focal points by avoiding awkwardness altogether. Self-undermining rules do the opposite: they lack the capacity to generate focal points or they lead people into crisis. An idea is better positioned to produce a focal point if other institutional elements exist that facilitate communication about how to coordinate with others. There are some general characteristics of institutions that may be more or less amenable to generating focal points at awkward moments. Here we begin to account for some of them.

1. **Hierarchies:** Organizations with hierarchical governance are more likely to overcome incompleteness. A hierarchy is an institution with the additional rule that in an awkward situation, other players should refer to the decision of some pre-designated hierarch. The role of leadership is perhaps the most obvious and natural way to navigate awkwardness and has been theorized since at least Max Weber (1922) and his famous typology of leadership.²¹ The hierarch's decrees may even override older rules, and inconsistencies may be introduced. But the hierarch's decision may still be preferred as he can set expectations to navigate the present awkward moment. The tradeoffs of hierarchy are theorized in Djankov et al. (2003). They associate too much hierarchy with the costs of dictatorship, and too little with the costs of disorder. Our contribution is to note incompleteness in rules as a perennial cost of disorder in the absence of a different means of overcoming awkwardness. Anticipating the possibility of a hierarch abusing his privilege to overturn rules, many institutions attempt to circumscribe the

¹⁹Further literature has theorized about institutions as cognitive phenomena and what characteristics they might exhibit (Petracca and Gallagher, 2020; Rosenbaum, 2021; Dekker and Kuchar, 2022; Dekker and Remic, 2024).

²⁰With our framework we interact Greif and Laitin (2004) with Hindriks and Guala (2015). We allow the rules themselves to serve as quasi-parameters which many reinforce or undermine themselves by increasing or decreasing the likelihood of encountering an awkward situation.

²¹As Lachmann (1971, p. 129) describes, "the figure of the leader, we might say, is designed to fill an institutional gap," he is a "deus ex machina, a man who brings about what social forces and the institutions in which they are crystallized are unable to accomplish."

powers of this executive or arrange credible commitments. Even with these arrangements, incompleteness still lurks.

2. **Embeddedness:** Granovetter (1986) famously emphasized social relationships that help navigate what we call awkward moments. He refers to actors using these social relationships as ‘embedded’. Institutions with actors embedded in a rich culture will have extra tools to navigate awkwardness. More technically, players are socially embedded when they participate in multiple domains together and thus can borrow and import coordinating devices to surmount awkwardness (Aoki, 2001, p. 247).²² This does not dismiss the role of ideas – ideas still must be presented and evaluated – but the ‘embeddedness’ gives reason to expect a higher success rate or faster convergence time toward a new equilibrium. The player sets of different domains very often overlap, and so what may be routine play in one domain can function as an awkwardness-navigating idea in another.²³ Note how this framework allows for (1) the transmission of focal point generating ideas through networks of institutions and (2) a natural reason to expect the benefits of repeated play expanding through multiple domains.
3. **Impartial Judges:** If the actors who find themselves in an awkward situation have ready access to some impartial agent, they may be able to readily generate a focal point for coordination. But for a third party to be impartial, they must have sufficient social distance or independence from the parties involved. For example, imagine you and a friend are having a petty argument at a restaurant, you reach an impasse, and you ask a man at the next booth to resolve the argument. Neither of you know him and the only reason he is selected is because he is the closest to where you are sitting. For your purposes, he is impartial: it is highly unlikely he favours one of you over the other for a reason unrelated to the merits of your argument. Impartiality has been noted as an important coordinating mechanism in a variety of settings. Wallis (2022) argues that unions serve as impartial judges between labourers when neither would trust their mutual employer to be impartial, resolving certain labour disputes. Elders, hermits, and holy men have been consulted through history for their ability to resolve social tensions they are not directly involved in. Leeson (2014) notes that oracles whose judgments were generated by a completely random process were often assented to by both parties because the correlated judgement was preferred to the quagmire of petty squabble. The presence of impartial judges turns many awkward situations trivial.
4. **Foundational Documents:** Many institutions include abstract documents that read like a mission statement or vision, but they do not prescribe clear rules for conduct. At the time of inception, these may seem superfluous, but they can be invaluable to negotiate crises. In the United States, the Declaration of Independence has served such a role. When the Continental Congress convened to revise the Articles of Confederation, they instead decided to draft a completely new constitution – and they leaned on the authority of the Declaration to navigate the awkwardness (Carey and McClellan, 2001, p. xxxv). The Declaration does not clearly enumerate a power to completely rewrite a constitution, but one could argue that the Framers were following its values more honourably by changing the constitution. In religious communities, creeds which do not express explicit practical rules still serve as guiding lights during practical crises. Foundational documents might not serve as a clear compass and map, but they can keep people afloat when in strange waters.
5. **Abstract Rules:** Some institutions are self-conscious about their incompleteness and try to squeeze in more rules per word – they try to economize on contingencies using abstract buckets of rules. This can be useful and can allow coordination across more contingencies without foreknowledge of specific details. But it could also give a false sense of preparation – Troy may have felt prepared for ‘military tricks’, an abstract concept, but they were not prepared for the

²²For example, deferring to your boss at a non-work party, or using family norms in a business transaction.

²³Other writers in economic sociology view aspects of culture as a toolkit or social device to navigate uncertainty (Swidler, 1986; Beckert, 1996).

more specific and surprising Trojan Horse (Langlois, 1986). In a similar vein, the rules' language will necessarily change as *language itself* changes. Instead of preparing for buckets of contingencies that are too abstract, an originally abstract rule can become too narrow with continual interpretation and reinterpretation over time. Thus a balance must be struck between emphasizing the main rules for conduct and admission for the exception that might be awkward. Institutions need maintenance, which can only happen with feedback from the ideas that they embody.

6. **Totalitarian Regimes:** A totalitarian institution is one that insists on its own completeness: it is believed to induce behavioural expectations for all possible contingencies. Given the complexity of the world, we suspect that totalitarian institutions are only possible in relatively simple environments. The agents following a totalitarian institution are less likely to prepare for the awkward moments when they come. Without a pre-designated method of handling the awkwardness (like a hierarchy or a judicial system), awkwardness is more likely to lead to chaos. In this chaotic moment, there may be a demand for an emergency hierarch to find a decision and return to order. Further, to increase trust in the institution there may be an effort to propagandize away the awkward moments or cover them up. Totalitarianism is self-undermining in the sense that it generates dictators which are likely to overturn and revise core elements of the system. We associate totalitarian regimes with despotic leaders, not because they are equivalent, but because they are more likely to desperately accept a dictator in a moment of awkwardness without having countervailing rules to constrain him. A relatively abstract and simple document, *The Declaration of the Rights of Man and of the Citizen* was insufficient to prescribe appropriate collective responses to a whole set of practical matters. The revolutionaries who drafted and promoted it, however, were insistent that it be their central guide, that all former customs could be swept away, and that the light of reason would guide the nation in uncertain times. In the coming years, the failure of the *Rights* to generate common expectations about the response to social issues led to the rise of dictators like Robespierre whose will became the *de facto* law. On the other hand, institutions which admit their own incompleteness may be better prepared for novel problems. Marginalia in medieval art, the strange images of rabbits riding snails, are a recognition of the potential awkwardness. They prepare people for the exceptions while maintaining an emphasis on the centrality of the main text (Camille, 1992).
7. **Intellectual Tradition:** In an awkward moment, actors can quickly find a new focal point for coordination if they have a common sense of why the institution existed in the first place. When there is a regular discussion about 'why we do what we do' taking place parallel to the actual operation of an institution, decisions during crises can be made more expediently. Intellectual traditions differ from the broad notion of ideas we cover in '[Ideas and incompleteness](#)' in that intellectual traditions are rules about ideas: when they should be deliberated on and by whom. Academic institutions and intellectual communities intentionally cultivate these conversations and store them for posterity. The conversation itself may generate intellectual revolutions that impact institutions downstream: there may be no immediate impact of a shift in an intellectual tradition, but the next crisis may lead to a radical pivot away from older institutions. Harold Berman's (1983) famous study of the origins of the Western legal tradition argues that law was able to develop in Europe, only because of the motivating over-ideals and institutional apparatus of the Catholic Church. Namely, the scholastic movement was motivated by the desire to remove inconsistencies and expand the applicability of Roman law with church canons. In turn, their intellectual activity created the cloud of ideas that were then applied in merchant, urban, and royal legal systems developing at the same time, and the Christian intellectual tradition gave Western law the capacity to grow in the face of novel situations.²⁴

²⁴Of course, the Western legal tradition itself developed into multiple branches: common law evolved with an emphasis on precedent, while civil law evolved with an emphasis on codification (Dainow, 1966).

Concluding remarks

If there is an explicit moral at the end of a children's story, why do you need the story as a preface? Perhaps just to make it memorable, but arguably, you need the story because the moral – the rule – cannot be understood without the context of a narrative. So too, institutional rules cannot be aptly applied without their contextual ideas. Every situation is novel. Most situations, however, are sufficiently similar to past situations that they can be reflexively interpreted into the institutional framework. We argue that there is no situation in which ideas are not *to some degree* informing institutions, but many of these cases are so routine that referring to the ideological context is unnecessary for standard analysis. In many cases, knowing the conventional interpretation of rules in a stable environment is sufficient to generate predictions of their effects. But to study the role of an institution in the long run or in the context of the entire society, one must understand the ideological content upholding the institution. For an analysis of any institution beyond a static routine environment, the economist must immerse themselves in the grand conversation of humanity. There is rich cultural and ideological content behind all routine maximizing behaviour. But direct engagement with ideas is indispensable when institutions are incomplete.

There are many further applications in which a theory of institutional incompleteness and awkwardness might provide clarity. An obvious direction for future research is to chronicle historical cases of institutional change through the following lens: some set of rules is asked a question it could not answer; the participants face an awkward moment; ideas are presented that potentially fill the institutional gaps; the rules are adapted to answer the question, that is, the institution changes. A contemporary set of examples are debates over US constitutional amendments. Did the framers of the US Constitution intend to allow a right to bear modern weaponry or just weapons with the capacity of their day, and what stock should we give their intention? It is left an open question whether such deliberations will lead to any consensus in the actual political battleground. Indeed, legal case history is replete with this kind of exercise, but rarely is economic history. Just as often, individuals in families, clubs, firms, and government bureaucracies are asking themselves how the rules that they follow apply to the case on their desk.

The relevance of ideas will be more prevalent in institutions that encourage exploration. When awkward situations are encountered in rapid succession, rules will play second fiddle and other ideas will take the foreground of analysis. In business, studies could be written of the emergence of a new industry, and how existing institutions were able to incorporate or flounder the novel dynamics. The ruthless tactics of John D. Rockefeller during the early development of the oil industry were ambiguously legal, but still had a lasting impact on the structure of the business. Similarly, the fresh encounter of multiple civilizations through trade, exploration, or warfare would create many situations in which individuals have to deal with people of a different culture. How was Japan able to successfully transform their society after Commodore Perry forced them to open? Any such analysis will have to deal with ideas.

Naturally, a proper analysis of the role of ideas would be an interdisciplinary affair. To understand the content of the ideas that rule a society, one needs to know the history of philosophy and religion not just in retrospect but precisely why one idea leads to another and why one faith can incorporate a novel reality and another couldn't. Literary studies would provide a window into the popular and intellectual culture of the time. Sociological analysis could describe how ideas were received and interpreted into daily practice. The relation between morals and law is a long-standing discussion in legal theory. Further, advances in cognitive science aim to understand precisely how human beings relate to one another and their environment, especially in situations of uncertainty.

It is possible for a set of explicit rules and procedures to be so robust that they live past the original ideas which gave them life. Following the rules can be a self-enforcing (or self-reinforcing) equilibrium, even when most individuals no longer believe in the original purposes the rules were designed to achieve. When awkward situations arise, the society which cannot come to agreements often relies on patchwork or temporary solutions based on short-term compromises or provisional decision-makers.

Soul-less institutions become bloated with bureaucracy and arbitrary law-making. Berman (1983) argues that the theological and religious context that informed the origins of Western law has been outlived by the institutions they set in motion.

Law is usually associated with the visible side, with works; but a study of the history of Western law, and especially its origins, reveals its rootedness in the deepest beliefs and emotions of a people. Without the fear of purgatory and the hope of the Last Judgement, the Western legal tradition could not have come into being. It was also Octavio Paz who said, 'Every time a society finds itself in crisis it instinctively turns its eyes towards its origins and looks there for a sign' (Berman, 1983, p. 558).

Recognizing the inherent incompleteness of institutions and the pivotal role of ideas in navigating this incompleteness offers a richer understanding of institutional stability and change. Realizing incompleteness should cause a bit of anxiety. We cannot simply relax on a pile of rules. Maintaining an institution requires constant attention. Simultaneously, incompleteness creates an opportunity to use good ideas to break out of path-dependent inferior equilibria. Both danger and hope lurk beyond the margins of institutions.

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