The Language of Compliance

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1. Introduction: Power, Authority and Beliefs

In all successful organizations, those in power radically reduce the cost of enforcing compliance with their instructions by transforming their power into authority. An essential component of the mechanism for this transformation is the deployment of complex speech acts designed to change the non-material incentives for compliant behavior. These utterances are economic acts of fundamental importance for both states and firms, yet to date they have not been satisfactorily analyzed within an economic framework. That is the objective of the present paper. I will argue that the insights of identity economics enable us to construct a formal, economically literate theory of how complex language uttered by rulers can turn power into authority. I start with two examples of the behavior to be analyzed.

During the Falklands War of 1983, an Exocet missile sank a British ship. Shortly afterwards, United Airways introduced a shuttle service between Los Angeles and Dallas. The CEO of Southwest Airlines held a meeting with his workers at which he announced 'the United Shuttle from Los Angeles to Dallas is an Exocet aimed at the heart of Southwest Airlines'. What was he doing? In August 2016, Chancellor Angela Merkel asked Germany's Turkish population to "develop a high level of loyalty" to their new homeland.[2] What was she doing?

Both utterances are examples of the use of complex language by large organizations. The CEO was using a metaphor to convey a narrative of struggle. Chancellor Merkel was seeking a change in identity. Both were highly successful in their respective positions and presumably thought they were uttering speech acts that would have some material consequence.

Firms and states are salient examples of organizations that face the challenge of inducing thousands of people to comply with their goals. The standard economic approach to the analysis of this problem is principal-agent theory: costly incentives linked to costly monitoring. In this approach the distinction between power and authority is void and language has no role: both the incentives and the monitoring are observed directly without linguistic communication. Yet in actual practice, all complex organizations devote considerable time, effort and resources to linguistic communication.

Economics does have a theory of language: cheap talk. This theory establishes that pure speech acts that leave payoffs unaffected can indeed improve economic outcomes. But what is communicated is rudimentary information, or misinformation, about the state of the world. The question addressed is how information that cannot be verified, and which may be biased towards the

[1] I would like to thank Tim Besley and the participants at the Identity Economics Workshop, London, June 2016, for comments on earlier drafts.

[2] *Financial Times*, August 23, 2016

interest of the speaker, may still rationally be used by the recipient to change a decision.

Organizations indeed use cheap talk. Announcements of sales forecasts, promising innovations, and new resource discoveries, all fit this structure where an evident opportunity and incentive for biased information does not destroy the value of making an announcement. But cheap talk fits only a small proportion of the language that organizations actually use in attempts to induce compliance. The speech acts envisaged in cheap talk are rudimentary. They could be replaced by semaphore: a small set of flags, one of which the 'speaker' could choose to display. It does not provide a basis for the analysis of complex language.

Complex language is the most distinctive differentiating characteristic of the human species, and the central activity of all societies. The question that is addressed in this paper is what does this capacity add to the scope for organizations to induce compliance. The contribution of the theory of cheap talk is to demonstrate that the analysis of the type of language it studies can be conducted entirely within the conventional individual rational choice framework. But this is not the case for the complex language of which the two quotes above are examples. The profession has been understandably resistant to extensions, fearing that this would open up unbounded *ad hoc* assumptions. The sound philosophical principle underlying this resistance is Occam's Razor: additional complexity is only justified if it is necessary for understanding. A remarkably wide range of behavior has been successfully analyzed without recourse to complexity beyond that standard in economic models. However, the unmodified assumptions of rational choice are manifestly insufficient to understand *all* behavior. Human activities might potentially have partitioned into those with material consequences, all of which could be studied through standard rational choice, and those without material consequences, which would be the domain of the humanities. But complex language frustrates such a partition. It has material consequences but is resistant to a simple rational choice framework.

Identity economics extends rational choice with a limited number of mental constructs whose importance for material actions is well established by social psychology. These mental constructs depend upon complex language and thereby bring its analysis within economics. The field was pioneered by Akerlof and Kranton (2011); this paper also uses extensions proposed in Collier (2016, 2017). The principle of Occam's Razor has defended economics from unnecessary *ad hoc* assumptions. However, as economics becomes better integrated with the other behavioral sciences, a hierarchy of complexity in modelling assumptions is likely to emerge, with traditional economic man anchoring one end of this range. There is no 'true model', only models that are appropriately minimal for the behavior they analyze.

The CEO of Southwest Airlines was deploying a metaphor to good effect. This is why a video of his speech is shown at Harvard Business School: he was recognized as outstandingly good at his job. But putting out a message that a missile was heading for the good ship Southwest Airlines would not have been a

smart thing to do were the workforce described by economic man: *economic man would have quit the ship!* The CEO was relying on many years of having already built the change of identity that Chancellor Merkel was seeking to achieve. She had recognized that she needed German Turks to adopt a German identity in order subsequently to be able to use an 'ought': they *ought* not to demonstrate in favor of President Erdogan of Turkey. Confident that the workforce had identified with the organization, the CEO's message was astute: by signaling that the organization was on the brink of a life-and-death struggle, he could anticipate that the response would be: 'I *ought* to work harder'.

As Akerlof and Kranton argue, the adoption of identity internalizes the objectives of the organization, enabling the costs of enforcing compliance to fall dramatically. The employees of Southwest Airlines, and the good German citizens that Chancellor Merkel was seeking, respond because they feel that they 'ought' to comply, rather than merely that it is in their material self-interest to comply. The self-interest of 'want' is overridden by a different motivation.

The paper is structured as follows. Complex language is the primary medium of social interaction, and so interaction is made the central unit of analysis. Babies are born into a group, raised within it, and gain a sense of identity from it. The rare babies reared without human interaction, do not grow into economic man: they become tragic beings, unrecognisable as fully human. The unit of social interaction is the network: this reorientation from the individual to the group, peopled by group-generated individuals, is set out in Section 2. Participation in a network generates the mental constructs that form the building blocks for behaviour, along the way producing the 'oughts' that the heads of organizations seek to induce. Section 3 reduces outcomes to a limited number of equilibria by means of a restriction: the various mental constructs are 'quantized' into packages.

In the resulting set-up, individuals still aim to maximize their utility subject to perceived constraints: this core of standard rational choice theory is retained.[3] But social interaction generates packages of mental constructs and these affect both the sources of utility, and the constraints that the individual perceives. It is these additions that provide the hooks onto complex language.

Actors such as CEOs and politicians are nodal in their pertinent networks: they can utter complex speech acts that are widely heard. This is an opportunity to act strategically, making utterances that maximize the goals of the organization by anticipating the behavioural change that will be induced. The standard assumption of rational maximising behaviour predicts that such opportunities will be used. Indeed, this role of personal communication may be an important reason why almost all organisations have a head, rather than being run by a committee of equals. Committees may be better at taking decisions, but are clearly worse at being nodal actors in a network. In Section 4 the hooks from

[3] Hence, the present set-up is at the more conservative end of the potential hierarchy of complexity that is likely to be necessary for a comprehensive account of behaviors.

mental constructs to complex language are used to address the opening question: what is the language of compliance?

In many contexts this set-up would introduce unnecessary complexity, but in some it is decisive. For example, in their analysis of commercial organizations, Gibbons and Henderson (2012) explain the triumph of Toyota over General Motors by worker compliance built without reliance on material incentives. The strategic use of complex language, such as the creation of 'quality circle' social interactions and narratives which readily generated an 'ought', was fundamental to this process.

2. Social Interaction, Identity, and Mental Constructs

Identity and its Origins

Although in the standard rational choice set-up the individual is an exogenously generated primary entity, this is merely a simplifying assumption adequate for many contexts. All statements of identity are about the membership of some group. Identity is about *belonging*.

The psychological process by which an identity is acquired is through the imitation of role models. But the adoption of an identity is not a simple neurological reflex performed by mirror neurons[4]; it is a conscious psychological process for which the primary vehicle is complex language. A convenient term for this use of complex language is *narratives*: the essence of narratives is that they are narrated units of information that circulate within a group. Usually the role model on whom identity is modelled is not some distant celebrity, but someone known personally (Christakis and Fowler, 2009). Hence, identity is acquired through linguistic interaction in a social group.[5] The 'self' comes into being both physically and mentally through social interactions.[6]

Because identity is grounded in social interaction, its expression is predominantly *performative*: either an utterance or action performed *before* the group as audience, or performed *with* the group as fellow actors. In either case, through being observed by the group it generates *common knowledge*, which facilitates coordination (Thomas et al. 2014).

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[4] See Hickok (2015).

[5] Not all social networks generate identity. Those defined narrowly by a specific instrumental function may not be capable of being a source of identity because such a step would be seen as a category mistake. Similarly, those groups to which everyone belongs cannot be a source of identity: adopting identity is a process of social differentiation. Consequently, some networks are more potent sources of identity than others. Exclusion may be intrinsic to the definition of the group, as with a family, or it may depend upon barriers. Some barriers intrinsically inhibit entry, such as specialist skills. Others are artefacts of entry, such as initiation ceremonies, or ongoing costs of belonging such as *rituals* which ostentatiously lack ulterior purpose. Entry costs may be particularly valuable for identity because they create the opportunity for a discrete leap of belonging such as the decision involved in religious conversion.

[6] Precisely this point, that the concept of the self is derived from social interaction is a mainstream position in academic philosophy, (see Scruton, 2017).

From identity to mental constructs

The narratives that circulate within a network will usually convey not only identity, but a broader suite of mental constructs. By around the age of eleven, children have acquired such a suite, which often endures for life. Yet typically, the brain capacity for rational economic thought as envisaged by economics does not develop until around the age of fourteen. Hence, such early acquisition of mental constructs must be by means of a non-rational yet conscious process such as imitation. Imitation persists in adults and is remarkably powerful. Imitated behaviour echoes across multiple layers of social networks: people will unknowingly influence behaviour to a diminishing extent for three degrees beyond themselves: friends of friends of friends (Dijksterhuis, 2005; Christakis and Fowler, 2009).

Alongside identity itself, the mental constructs acquired through narratives that directly influence behaviour are *norms*, *values* and accounts of *causation*. Indeed, the emergence of the sense of self in its modern, Western, has been interpreted as a package of mental constructs that originated in a specific social and historical context, namely early Christian Europe, (Siedentop, 2014).[7]

Norms and values are important for an adequate analysis of motivation. Economics often reduces motivation to the satisfaction of material 'wants'. Yet people are willing to sacrifice a material 'want' in order to comply with an immaterial 'ought'. Recent research on the type of decisions that people most *regret* provides an ingenious test of the relative power of 'wants' and 'oughts'. All types of decisions can be presumed to have an error rate; the intensity of regret is a measure of the importance of that class of decision. Overwhelmingly, the most intense regrets concern decisions in which a 'want' was allowed to prevail over an 'ought', rather than errors in strategies for satisfying 'wants' (Towers *et al*, 2016). Economics conventionally finesses this tension between 'want' and 'ought' through the reduced form of 'preferences'. 'Oughts', like 'wants' are exogenous and we net them out to 'revealed wants'. But in doing so economics sacrifices the ability to analyze the generation of 'oughts' *as a class of economic activity*.[8] Recently, economics has begun to endogenise oughts, in the process explicitly analyzing the tension between the oughts and wants. An example is the analysis of tax compliance in Besley *et al.* (2015). In that paper, the mechanism for endogenising oughts is the simple one of the proportion of other people who are complying: this endogenises a norm, and hence generates the pressure that can be thought of as a 'social ought'.

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[7] The resulting distinctive individualism of early medieval Europe, contrasted with the collectivist identity fostered by Islam, is central to the economic analysis of Greif (1994).

[8] Economics is a conservative subject and the step from the *actor* as primary to the *interaction* as primary might appear too radical despite evidence from other social sciences. Hence, an analogy with physics, the discipline that economists most respect, might be of interest. A century ago physics went through its own unsettling revolution in the shift from classical mechanics to quantum mechanics. As it happens, this revolution was precisely the shift from the centrality of objects to the centrality of interactions.

The core proposition of this paper is that the primary means by which many 'oughts'' are generated is through the intentional, strategic utterance of *intertwined speech acts*. All organisations large enough to reap economies of scale face potential free-riding, and reducing the costs of enforcing compliance through 'ought'-induced behavior by means of these utterances is standard practice.

A norm is simply behaviour that is regarded favourably by others within the group. Hence, by enacting *observable* behaviour that conforms to a norm, the actor will receive peer esteem. Being a social entity, the actor gains utility from peer esteem: it is a motivator as primitive as the satisfaction of material wants. An assertion of identity is therefore both an assertion of membership of a group, and an implicit acknowledgement that, were the actor to receive peer esteem from other members of the group, it would increase his utility. Conditional upon being a source of identity, a network often generates the norm of reciprocity. Humans are probably hard-wired with a disposition for within-group reciprocity (Greene, 2013). But such a genetic predisposition is distinct from the process by which an intended decision is generated.[9] Decisions that respect an 'ought' are generated by *moral reasoning*, the process by which these reasons are formulated and adopted being social.[10]

A person who generates peer esteem by actions that conform to norms need not have internalised those norms: hence the concept of *conformity bias*, now so apparent in opinion polls. Internalization of a group norm is a distinct psychological step. A person will participate in several networks, each with its norms, and these collectively form the menu from which internalization takes place. *Internalization transforms a norm into a value*. Whereas a norm is an externally observable phenomenon as it circulates around a network, both identity and values are private mental constructs of the individual person. However, these private mental constructs are derivative of their socially generated counterparts: groups and norms. Enacting behaviour that conforms to values generates self-esteem. This gives rise to the *moral* meaning of 'ought': the tautology 'I ought to behave in accordance with my values'. Hence, both self-esteem and peer esteem are generated by the adoption of a group-defined identity, each type of esteem supporting an 'ought'.[11]

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[9] Just as mirror neurons are not an adequate account of the adoption of identity.

[10] This is the argument of Scruton (2017).

[11] Anomalies can be found, but are not particularly revealing. Someone who adopts the identify of 'a good burglar' necessarily attaches utility to the peer esteem of other burglars who acknowledge that he is good at the occupation. However, he does not necessarily gain self-respect from being 'a good burglar': he might regard it as an unfortunate necessity or even be self-loathing. Yet more extreme, self-hate is possible: a forlorn child might identify as 'a loser'. This does not imply that the child values the esteem of other losers: the child may well despise them as much as it despises itself. But such identities are pathologies, in the same way that autism is a pathology. It is not helpful to define concepts so broadly that they embrace all possible mental states; rather, they need to be operational for those that are commonly accepted as normal.

In summary, we are pre-rationally disposed to some norms and values (Haidt, 2012). But these urges are supported by moral injunctions that constitute the 'oughts', and these are generated through reasoning that can only be formulated in complex language. When we breach them and regret it, it is the decisions (i.e. rational intentions) that we are regretting.

Participation in a bounded social network will thus commonly generate shared identity, and this will in turn generate shared norms such as reciprocity that support social 'oughts'. As these norms are internalized they create moral 'oughts'. From the primitive of the *social network within which narratives are circulated*, we have thus generated identities, values and norms.

Language as vehicles for narratives

The need for observability limits the key modalities of interaction to physical proximity and language. Physical proximity generates some archetypical expressions of identity, such as eating from a common pot, (a standard definition of a household), participation in a ceremony, and joining a crowd. But the move from physical proximity to language is transformational.[12]

Linguistic interaction generates identity partly because a language is itself a group-generated public good, the outcome of a common endeavor. It is also exclusionary. But the key contribution of language is that it *enables a rupture with observed reality*.[13] Groups dependent upon physical assembly are constrained by the common physical observation of reality, and are thereby necessarily fairly small; groups generated by language can have an *imagined* common identity and so be enormous, as with nations and large firms.[14]

Linguistic interaction can generate a rupture with observed reality by being the vehicle for narrative accounts of causal propositions (Cialdini, 2007). The acceptance of false causal propositions by a group is scarcely feasible through either physical interaction alone, or non-complex language.[15] Narratives are the most fundamental tool that distinguishes humans from other species. Most of our beliefs about how the external world functions derive not from direct observation, as postulated by rational choice, but from 'if-then' narratives that circulate in networks. Because humans have an innate craving for understanding, narratives provide enormous scope for generating false, or

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[12] The most potent examples of physical assembly are those that combine it with linguistic interaction, as with rallies, dances and anthems.

[13] An example of this rupture with reality is for a nodal actor in a network to encourage 'coarse thinking' (Mulleinathan *et al*., 2006), whereby people become confused into mis-categorizing certain propositions.

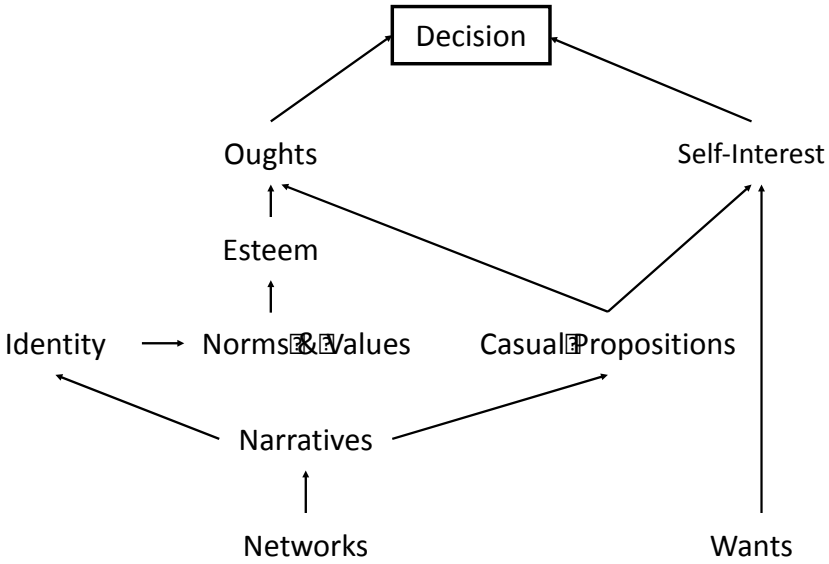
[14] The key insight of the influential work on identity formation, *Imagined Communities,* (Anderson, 1983) is that they are mental constructs supported by false narratives of shared historical origins.

[15] Illusionists try to convey false causal propositions without resort to language through observed behaviour, but this is usually understood as a pretence by the audience.

collectively self-fulfilling, propositions about how the world works. Internalizing such narratives will change the perceived constraints subject to which the actor maximizes.

A simplified summary of the above structure is set out in Figure 1. The exogenous components, networks and material wants, are at the bottom. The arrows linking the various concepts indicate the hypothesised mental processes.

Figure 1: The Mental Structure of Decisions



While a single narrative can be potent, the key step in complex language is to join up a series of narratives sequentially to construct a c*ausal chain* that sets out an imagined pathway to a desirable outcome. This creates scope for reclassifying a subset of those actions that are manifestly not in the current direct interest of the actor as being in her long-term self-interest contingent upon the imagined pathway.

3. Mental Constructs as Quanta

The narratives that circulate within a social network thus have the potential to generate four mental constructs: identity, group norms, internalized values, and accounts of causality. Through three forces that I now discuss, these distinct mental constructs will be bundled together so as to be mutually supporting: a social network tends to equilibria in which only certain of these mental constructs can co-exist.

One evident reason why the distinct mental constructs generated by a network are 'quantized' into packages is that it will tend to generate the same mental constructs for all participants, the glue that binds them being the *common circulation of narratives*. All members of the same network will be exposed to specific versions of all four mental constructs, whereas non-members may not be

exposed to any of them. Mutual observation reinforces this through common knowledge: everyone knows that everyone in the group is exposed to the same mental constructs, and this makes it easier to formulate a 'theory of mind', by which the actor predicts the behaviour of others.

A second force that bundles the mental constructs is that in equilibrium they will be mutually reinforcing because of their *cognitive congruence*. Identities and values are internalized: were they to be incompatible the person would experience cognitive dissonance. Norms and accounts of causality are not necessarily internalized, but there is nevertheless some psychological pressure for them to be compatible with identity and values. An actor who adheres to social norms in order to generate peer esteem but does not internalize those norms is liable to suffer continuing mental discomfort from dissimulation. This is akin to lying, which is known to generate cognitive dissonance. Similarly, should the actor become continuously subject to narratives that undermine identity, values and group norms, the incompatibility is liable to be uncomfortable: that is why networks try to filter them out by means of taboos (Benabou and Tirole, 2011), or delegitimate them through neutralising propositions. The norm 'turn the other cheek' is not *logically* incompatible with the narrative vehicle for the causal proposition 'if you shoot first you are more likely to stay alive'; but they would sit together uncomfortably.

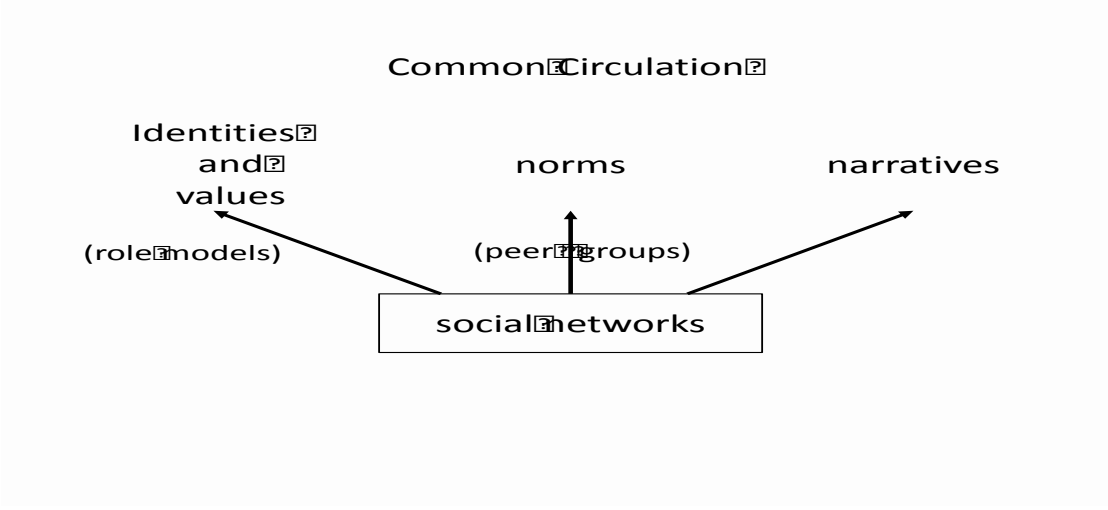
Holding a set of mental constructs that are not cognitively congruent is thus a disequilibrium. Two distinct processes that adjust to equilibrium have recently been postulated, one within the individual, the other across the society. The former is that faced with conflicting evidence, the individual will reweight it selectively, privileging that narrative account of how the world works that best fits with norms and values (Haidt, 2012). The later is the biased inter-generational inheritance of mental constructs (Besley, 2017). The children of mixed marriages between one parent whose mental constructs cause cognitive dissonance and the other whose different mental constructs are cognitively congruent will tend to imitate the happier parent, and so adopt those of the latter.

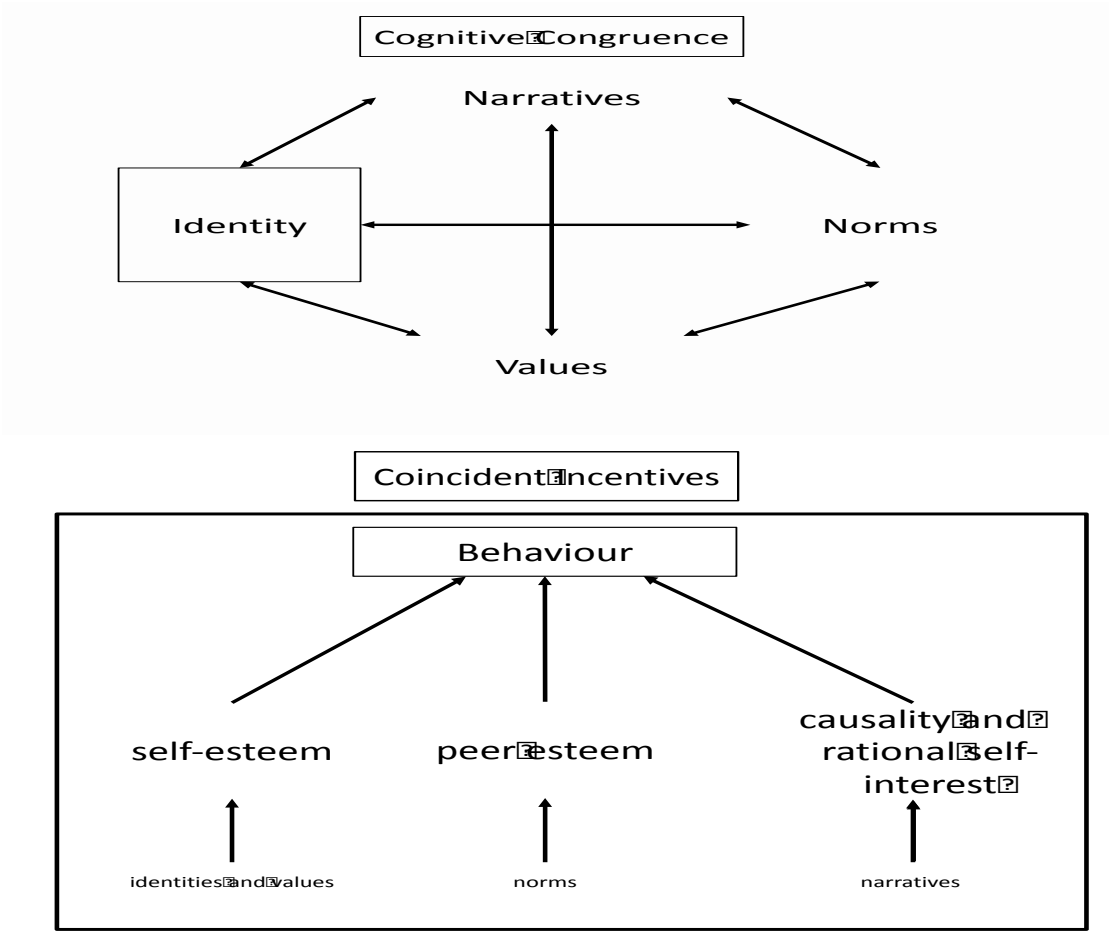
Cognitive congruence depends upon intertwining identities and values with causal propositions: normative statements that are supported sympathetically, though not necessarily logically, by positive statements. A standard way of doing this is to link a normative goal with a positive account of a struggle towards that goal. This can be strengthened if the narrative ends with success: experimental evidence shows that people like to identify with success. For example, in recounting the result of a football team that they support, if the team is successful they will tend to say '*we* won*',* but if it is unsuccessful they will report it as *'they* lost' (Caldiani, 2007). Both religious and secular networks abound with such intertwining. Religious narratives of heaven as the outcome of adhering to values have secular utopian equivalents such as socialism and 'ever closer union'. Experiments in changing aspirations use both role models that showcase a new identity, and causal propositions designed to induce revision of estimated payoffs from effort: *the causal proposition supports the change of identity*.

A third force that quantizes the mental constructs is that *coincident incentives generate common behaviour*. Decisions will tend to be common because for those in the same network, in equilibrium the same chosen action will usually generate peer esteem (due to being subject to a common group norm); self-esteem (because the group norm will tend to have been internalized); and appear to be in the direct self-interest of the actor (because the causal propositions circulating in the network will have been adjusted so as to be cognitively congruent). Since this common behaviour is observable, it feeds back to reinforce group identity: the behaviour becomes normal. Instrumental behaviour unintentionally serves a performative function. Indeed, since it becomes 'standard operating practice', following it becomes the default option that saves the effort required for a conscious decision.

At the risk of overburdening the terminology, I will term such a quantum of equilibrium mental constructs a *belief system*. If the belief system is incompatible with normal understanding of causal processes, as with implausible religious beliefs, or norms that conflict with common values, as with violent extremism, the cognitive dissonance generated in others were they to adopt individual components, functions as a mechanism for exclusion. The psychic costs inflicted by the need to revise common understanding and values deter entry. This further reinforces group identity. To summarize: *a social network tends to produce common, locally stable behaviour of its participants because the mental constructs they hold are generated by common circulation; these constructs are mutually anchored by cognitive congruence; and decisions are anchored in coincident incentives for common behaviour.* The forces maintaining a belief system are set out in Figure 2.

Figure 2: Equilibrating Forces in a Belief System





4. **The Language of Compliance**

Finally, I return to the initial question: what is the language of compliance? The starting point is that the actor is faced with an instruction issued by the ruler that, despite power-generated rewards and penalties, is not in his direct individual interest. The rational actor will therefore choose not to comply. Power is transformed into authority if the ruler can alter this rationally taken decision without changing objective material incentives. In the animal kingdom, authority as distinct from power does not exist: once the dominant bull ceases to be physically stronger than a challenger, compliance evaporates.

The defining contrast with the animal kingdom is that humans understand and communicate complex language. This makes humans susceptible to influences that otherwise cannot be transmitted: the creation of shared identity across very large groups; social and moral obligations; and narrative chains of causality that alter perceived group interest and self-interest. Rulers are nodal actors in networks, giving them the capacity to communicate with others. This is an important resource that power can use to induce compliance. Conversely, those who happen to be endowed with the status of being a nodal actor, can use it to

accumulate more conventional forms of power.[16] Our question is how power can most effectively use this advantage in the utterance of speech acts to transform its power into authority.

The language of compliance is the language of persuasion, but embedded within it is the language of morality. I now propose an analytic decomposition of the speech acts required to build compliance.[17] We have seen that one means of doing this is for the ruler to introduce a new psychological cost to non-compliance: the tension produced by breaching either a social or a moral 'ought'. For this, power needs to generate the thought 'although this action will not help me individually, I *ought* to comply with it'. As argued in the seminal study by MacIntyre (1981), the essence of moral language is to treat others not just as means to a self-interested end, but rather as ends in themselves. Yet the sound bedrock of economics is the recognition that universally directed altruism is a very weak force relative to self-interest. To be effective in achieving compliance, moral language cannot rely upon this force. Identity economics provides the key insight: by building an identity 'we', that encompasses, but is restricted to, the required domain of compliance, the interests of others in this common identity group acquire significant value. The creation of a shared identity becomes an essential step in being able to invoke an 'ought', but alone it is insufficient.

The complete structure of moral reasoning is to intertwine three distinct types of speech act. First, as just proposed, language must be used to create a sense of shared identity. These are the *speech acts of belonging:* A belongs to the same group as B. This is what Chancellor Merkel was aiming at in her remarks about German Turks.

Second, *conditional upon that shared belonging having been created*, language may be used to create a normative proposition about behavior towards other members of the group, such as reciprocity or altruistic care. These are *speech acts of obligation:* A has obligations towards B *because this is a corollary of common identity*. An alternative is for the ruler to create a direct obligation to himself through deference to hierarchy. Even deference is usually based on some imagined reciprocity: the obligation of the good ruler to his subjects. Deference is very common within families: it is the central belief system that most parents try to persuade their children to adopt ('because I say so'). Prolonged power may directly create a habit of obligation.[18] Heldring (2016) shows that in Rwanda the willingness to comply with taxation is directly related to the duration of power, with spatial variation reflecting the gradual expansion of the pre-colonial state.

Third, a link must be created between the action of the individual, and the wellbeing of other members of the group: these are *speech acts of causal propositions:* the decision taken by A will affect the wellbeing of B. Deference can

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[16] Donald Trump, currently the most powerful person in the world, acquired that power through a prior endowment of exceptional network contacts with citizens: 'Without Twitter I wouldn't be here'.

[17] Hence the famous proposition of Richard Neustadt concerning the American presidency.

[18] But where this is based on the triumphalism of raw power, rather than being linked to some notion of reciprocity, it becomes a pathology analogous to a sadomasochistic relationship.

also be justified by causal propositions: within the family it might be 'mummy knows best'.

The other linguistic means of generating compliance is structurally less complex in that it relies on only one type of speech act: narrative propositions. However, since the need for compliance only arises because it is evident to the actor that the action is not directly in his interest, while simple in this limited sense, it is unlikely to be easy for rulers to do. The only way in which it might be feasible is through the construction a chain of causal propositions such that the action comes to be perceived by the actor as being in his long term self-interest and so becomes seen as a rational investment.[19]

These two approaches, constituting the DNA of the language of compliance, are summarized in Figure 3.

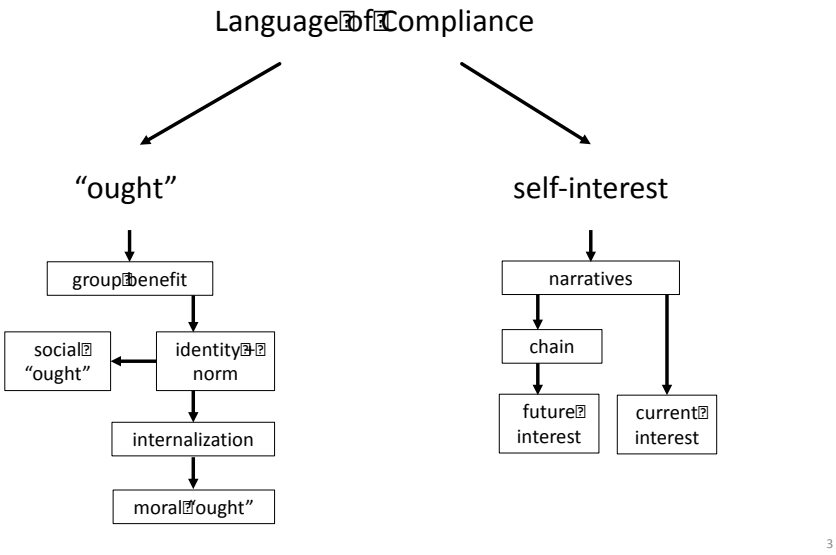

Figure 3: The use of Language to Generate Compliance

My claim is that all non-material, compliance-inducing behavior relies upon one or other of these underlying structures. Either moral reasoning is used to generate an 'ought' through a package of the three distinct types of speech act: belonging, obligation and causal proposition; or a narrative chain is used to generate a material self-interest.

Given the evidence of the relative power of different categories of regret, the former seems to be more powerful than the latter and, if this is correct, it should be presumed that strategic actors already know this and so put their compliance-inducing efforts predominantly into moral reasoning. All effective organizations, private and public, are presumably routinely performing these economic actions, just as they routinely use material incentives to further their goals.

[19] So common is this strategy of rulers for achieving compliance that it has generated a succinct generic popular critique: 'jam tomorrow'.

Finally, I illustrate how salient examples of compliance can be seen as fitting the pattern. In is contest with General Motors, Toyota gradually built a sense of shared identity between workers and managers. This was not only by speech acts, but the speech acts and management behavior were mutually reinforcing. Shared identity was supplemented with the core Toyota slogan for its workers: 'faults are treasures'. This was a succinct statement of a causal chain. But this in turn depended for its impact upon a norm of pride in work done for the company, which harnessed the shared identity to behavior. Even when General Motors understood the problem, its management found that it could not build this structure sufficiently quickly: the right speech acts are necessary, but if they are manifestly contradicted by management behavior they are insufficient. The Southwest Airlines causal proposition cited in the introduction can be understood in the same terms: it worked conditional upon prior adoption of an identity, and from this, the adoption of a norm. The manifestly dysfunctional cultures that developed in some of the investment banks can perhaps be analyzed through an equivalent decomposition of the language prevalent in their social networks.

The tax compliance model of Besley *et al*. (2015) analyzed the 'poll tax'. This tax actually had two very different names: critics referred to it as the 'poll tax' whereas the government referred to it as the 'community charge'. Reflecting this, there were two entire linguistic packages: belonging, obligation and causal proposition, each of which circulated in a set of spatially distinct networks so that mental constructs of participants diverged. Whereas prior to the tax, rates of compliance were similar, during the tax they diverged, and even when the tax was withdrawn compliance did not recover in the low-compliance areas, because local peer-pressure for reciprocity had been reduced. What persisted, presumably, was the reduced common circulation in these boroughs of the speech acts of obligation.

5. Conclusion

Occam's Razor is a severe and necessary discipline upon the proliferation of complexity: complexity has to earn its keep by adding significantly to explanatory power. The analysis set out above adds complexity to the standard account of motivation, through the non-material incentive of esteem, and to the standard account of knowledge, through narratives. Further, both are made endogenous to participation in social networks.

The justification for this extra complexity is that it thereby brings a class of economic behaviour within reach of more formal analysis, namely the reduction in the costs of compliance achieved by the transition from power to authority. Whole tracts of economic behaviour do not need this extra complexity and so by Occam's Razor, even were it to be correct as a description of the underlying psychological processes, it would be redundant. But for some topics of considerable importance it may be valuable. While it might have some application in the analysis of firm performance, it may have much greater application in two other contexts where the discipline of the market is

necessarily much weaker: governments and families. The difference between an effective government and that of a 'fragile state', like the difference between a successful family and a troubled one, is staggeringly wide. Many of the remaining problems in public policy relate to either fragile states, as with refugees and pockets of mass poverty, or troubled families, as with abused children and teenage drop outs. To date, conventional economic incentives have had relatively little traction with either of these problems, while the interventions generated by the insights of other social sciences lack the clarity and coherence that analytic economics has to offer. By bringing compliance-inducing behaviour, both moral and material, into a common framework, using the proposed simple decomposition of complex language, future design of interventions may be more effective. Providing an outline of such a minimalist framework has been the ambition of this paper.

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