From Individual Rationality to Socially Embedded Self-Regulation

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Abstract

The emerging trend is that we let go of the idea that humans are naturally endowed with "rationality" (especially in the sense of consistency and utility maximization, as in microeconomic) in favor of an evolutionary view in which the brain evolved together with the affordances and problems offered by living in larger groups. Rather than seeing humans as having evolved to pursue their self-interest in a utility maximizing way, what is emerging is to see humans as having evolved to draw adaptive advantage from living in larger groups by a set of self-regulatory abilities (some of which are more or less automatic and can be overridden by less automatic capabilities). The self-regulatory abilities, in turn, can vary and are much dependent on the social environment. For example, having significant others is vital for one's self-regulatory ability, as is the capacity to change one's environment in order to strengthen one's self-regulatory capacity. The sociologically interesting part of all this is exactly this social dependence of self-regulatory capacity. Rationality, if that term would still be used, is thus thoroughly a matter of person by environment interaction. This has fundamental consequences for how social science is done.

THE INTUITIVE IDEA OF RATIONALITY AND SELF-REGULATION

Imagine you live in a country in which freedom of expression is suppressed, in which supernatural forces are said to provide the right to govern, and in which women or certain races or lower classes are seen as inherently cognitively inferior, even by leading scholars. In such a society, the idea that all human beings are rational (in the sense of being equally endowed with reason) and that this rationality would guide them if only they were free to act as they see fit, is revolutionary, emancipatory, and scientifically progressive. This is basically what happened in the age of enlightenment. When human

rationality is claimed to be inherently innate only in people of a certain gender, or certain race or class, it is, from what we know now, a scientific advance to proffer an ideal typical counter claim that all human beings are equally rational.

Much has happened since the dawn of the age of enlightenment. By now, the cultural achievements of the enlightenment themselves created the space for scientific advances that deviate from the conceptions of rationality that were born in the enlightenment. The new trend described in this essay is that the priorities are seriously changing and thereby what is desirable as microfoundation in the social sciences: ideal-typical conceptions of human capacities and simplifications made for the sake of the formalism should not have priority over realism. Instead, the realism of the theory should have priority over working with ideal types and over tractability in formal models, be that in economics or in sociology. The main drivers of advances that show the way to go are, in my opinion, cognitive psychology and cognitive sociology on the one hand, and evolutionary anthropology and evolutionary psychology on the other, both aided by social neuroscience (Cacioppo, Visser, & Pickett, 2006). The trend is toward a greater integration of social, cognitive, and biological levels of analysis. In the following, I present what I consider to be the most important developments in this regard. These developments have important consequences for virtually all fields in which behavioral theories are applied to social contexts, importantly including institutional design.

I argue later that we would advance our theories in the behavioral and socioeconomic sciences if we would think about human rationality in terms of human self-regulatory ability rather than in terms of decision making and consistency concerning ordered preferences and constraints (economics) or values and behavior (sociology).

To make things not too complicated, I dichotomize a continuum of self-regulatory processes into two orders: a lower and a higher order. An example of the lower order is falling asleep when one is very tired. An example of the higher order is the suppression of outward signs of anger. If there were only lower order self-regulatory processes, they would have much to do with functionality (e.g., for the survival of the organism) but not with rationality (in the widest intuitive sense of involving purposeful action). However, as we will see, higher order self-regulatory processes involve the dynamics of overarching goals (not just plain functionality) and these goals are subject to considerable social influence.

What is so different by taking this turn and replace "rationality" by self-regulation? Some forms of behavior that look irrational have more recently been analyzed with regard to the possibility that they make evolutionary sense (Gigerenzer, 2002). This is certainly an important advance. However, more to the point of this essay, a great deal of behavior that looks

irrational is actually a failure of self-regulation (e.g., in terms of choosing inferior short-term options at the expense of better long-term options, or letting oneself be influenced by seemingly trivial cues in the situation). Self-regulatory ability varies and has coevolved with social and cultural developments, and because it is thoroughly dependent on social supports, one can also speak of "social rationality" (Lindenberg, 2013a).

Much of human self-regulatory capacity is dedicated to making humans able to take care of themselves, and to establish and maintain the conditions for being able to take care of themselves (such as the ability to elicit the cooperation of others, and to be able to adequately cooperate with others). This implies that part of self-regulatory ability is to seek out conditions that help maintain this ability. Not everybody succeeds equally in this effort, so that, contrary to the concept of rationality in rational choice theory, self-regulatory ability as conceived here is assumed to vary among human beings not just as a trait but also as a state that is heavily dependent on social factors. For example, if somebody is surrounded by others with low self-control, his own self-regulatory ability will suffer (Christakis & Fowler, 2007).

Considering this dependency explicitly opens up a new perspective on institutional analysis. Institutions have much to do with the way people deal with conflicting goals (e.g., short-term vs long-term). The concept of "rationality as consistency" does not only neglect such conflicts but rules them out if they cannot be conceptualized as trade-offs.

The evidence that self-regulatory capacity differs among people and that it matters for income, status, health, crime, and many other important outcomes of behavior that would possibly be covered by an intuitive idea of acting rationally is overwhelming (see, e.g., Moffitt *et al.*, 2011; Steverink & Lindenberg, 2008).

THE SOCIAL BRAIN

My point of departure for thinking about self-regulation is human evolution. This vantage point allows us to draw on a wide variety of research that directly impacts self-regulation and its antecedents. Human evolution is a coevolution of genes and culture in the sense that genetic predispositions affect culture (including social norms and the way people interact), and when culture is adaptive, genetic selection will code improved cognitive processes to absorb and transmit culture (Richerson & Boyd, 2005). Nested in this process is the coevolution of the brain and the size of the social group (Dunbar, 2003). The importance of this finding is that it allows us to integrate a great variety of results from evolutionary anthropology and psychology, from cognitive psychology and sociology, and from (social) neuroscience around the

social aspects of the brain, prominently including the capacity to self-regulate (Lindenberg, 2013a, 2014).

Pair bonding and cooperative breeding are likely to have been the main initial driving forces behind the development of the social brain (Dunbar & Shultz, 2007; Hrdy, 2009). However, the gene-culture coevolution is likely to have driven the process further and further by pushing the sophisticated correlated brain and culture adaptation to such heights that human beings can draw huge adaptive advantages from living in larger groups *because* they can equip these groups with sophisticated collective goods (Lindenberg & Foss, 2011; Sebanz, Bekkering, & Knoblich, 2006; Tomasello & Carpenter, 2007). In other words, the better humans can jointly create collective goods, the higher the individual advantage from being part of such a group. In this light, looking for "altruistic" preferences in humans is only a small step in the right direction because it does not even come close to finding (let alone searching for) the "social brain" conditions that govern the joint creation of collective goods. As I argue, these conditions have much to do with self-regulatory capabilities and the elaborate cognitive and motivational brain power they require (Lieberman, 2007).

SELF-REGULATION AND DYNAMICS OF OVERARCHING GOALS

Human beings are equipped with many lower order self-regulatory capacities, such as generating emotions, reflexes that are mostly regulated by the "old" brain (e.g., brain stem, basal ganglia, and thalamus). The higher order regulatory processes, such as emotion regulation, involve virtually all regions of the brain, but they prominently include the "new" brain (the neocortex, especially the frontal lobes). In contrast to the lower order processes, higher order self-regulation very much involves *consideration of context* (such as the presence of conflicting lower order processes, appropriateness of a (re)action; expectations of others, longer term consequences of one's (re)action, and norm-oriented behavior (Goldberg, 2009). For understanding both lower and higher order self-regulatory processes, we have to look at the dynamics of overarching goals. Roughly, the idea is that overarching goals are crucial for the balance between lower and higher order self-regulatory processes. In turn, by and large, it is the social environment and not the individual that determines the salience of a particular overarching goal and thereby behavior. Self-regulation thus consists, to a large degree, of the anticipation of these saliency effects and of a choice of environments.

Even though the concepts of "goals" and "preferences" are often used interchangeably, goals represent a whole mental architecture, whereas preferences to not. Goal pursuit involves our most sophisticated brain power and it is not necessarily conscious (Bargh, Gollwitzer, Lee-Chai, Barndollar,

& Trötschel, 2001). Goals are mental constructs that rely on a considerable number of mental capacities: the capacity to cognitively represent desired states; to monitor the degree to which a goal that is presently activated has been achieved; to detect errors; and to react to this information in such a way that, when the goal is realized, one turns to another goal, or, when progress is not satisfying, to take action for improvement; to respond emotionally to success and failure in goal pursuit and to quickly determine the direction of action (approach or avoidance); and to inhibit incompatible goals (Carver & Scheier, 1998). Concrete goals are nested in overarching goals or "mindsets" (Lindenberg & Steg, 2007). To some degree, overarching goals are chronically activated, thus making "mixed motives" the "normal" situation. However, in most situations, one overarching goal is more strongly activated than the others and it "frames" the entire situation, largely governing what we attend to; what information we are sensitive to; what we expect others to do; what we like and dislike; and what criteria we use for success of failure of goal achievement. The more strongly one overarching goal is activated, the more the other overarching goals are inhibited. Related to this is the fact that overarching goals can make effects spread from an episode with one subgoal to an episode with a possibly completely different subgoal by a so-called cross-episode effect. The first episode (e.g., eating chocolate) can increase or decreases the activation of a particular overarching goal (in this case, it increases one that is related to indulgence) which, in turn, can change the relative balance between overarching goals and thereby influences the next episode (e.g., shifting channels on TV to watch—against one's original plan—a low-brow erotic film). Overarching goals can capture the entire mind and frame the perception of and reaction to the world. In that sense, such goals can make us act very differently when changing social contexts activate different overarching goals. How they differ is described in an emerging perspective called *goal-framing theory* (Lindenberg & Steg, 2007), a perspective that relates directly to a goal-related conception of self-regulation. As a first step in the analysis of self-regulation, I present the overarching goals.

HEDONIC, NORMATIVE, AND GAIN GOALS

The Hedonic Goal

The most basic overarching goal is related to the satisfaction of fundamental needs (consummatory behavior). The state of need satisfaction is indicated by the way one feels. For example, if the body needs food, one feels hungry. The link of need state to feelings is itself a lower (albeit imperfect) self-regulatory device. Focusing on improving (or maintaining) the way one

feels is a basic overarching goal, called *hedonic* goal. Its level of activation can be increased by cues in the environment. For example, seeing food can trigger an urge to eat and thereby increase the focus on improving the way one feels. This hedonic goal is characterized by a focus on feelings here and now, with considerations of context (such as decorum, or health, future consequences) playing a subordinate role. The cross-episode effect has been well demonstrated for the hedonic goal. For example, being exposed to the picture of an attractive woman in an advertisement for loans increased loan demand by about as much as a 25% reduction in the interest rate (Bertrand, Karlan, Mullainathan, Shafir, & Zinman, 2010).

The Normative Goal

The ability to put oneself in the shoes of others is not unique to humans but in humans it has evolved to unprecedented heights, with cognitive (theory of mind), emotional (empathy), and mirror neuron capacities (Blair, 2005). This mentalizing virtuosity probably evolved in the context of pairbonding and cooperative breeding (Dunbar & Shultz, 2007; Hrdy, 2009), and it is the basis for the possibly most important mental change in human evolution: the development of both a normative overarching goal and a gain-oriented overarching goal. First, the normative goal. Living with others and also encountering other and potentially competing groups very likely created selective pressure on being able to put oneself in the shoes of the whole group, adopting group goals as one's own (Lindenberg, 2014; Tomasello, Melis, Tennie, Wyman, & Herrmann, 2012). The overarching goal is to do what is socially expected, what is appropriate; what furthers the realization of group goals (norm-oriented behavior). One can hardly overestimate the importance of such an overarching goal for the possibilities that group have adaptive advantages for individuals within them.

Group goals are often codified in terms of norms, hence the name *normative goal*. When this goal is salient, people are especially sensitive to information about social expectations and to others' (dis)respect for norms. Even though the positive effects for the group of following a norm may lie in the future, the feeling of obligation created by a salient normative goal is "here and now," making future discounting effects unlikely. In a normative goal frame, people cooperate even if they do not consider the consequences of their prosocial action (Burton-Chellew & West, 2013). The cross-episode effect that characterizes an overarching goal has been amply demonstrated for the normative goal. For example, when people see others disrespect norm A, this will weaken their normative goal and they are more likely to disrespect an unrelated norm B. We demonstrated this with a number of simple field experiments (Keizer, Lindenberg, & Steg, 2008). For example, graffiti (compared to

no graffiti) on a mailbox doubled the percentage of passersby who stole an envelope hanging from the mailbox and showing a 5 Euro bill as content. We could show that this effect was not due to the idea that where there is graffiti, sanctions are unlikely and thus I may steal with impunity. Observing disrespect for the norm "not to disfigure others' property" decreased the salience of the normative goal and thus increased in the observer the likelihood of disrespect for a completely different (and in general highly internalized) norm "not to steal." True to the hypothesized cross-episode effect of overarching goals, we also found the converse: observing respect for norm A increased respect for norm B in the observer (Keizer, Lindenberg, & Steg, 2013).

THE GAIN GOAL

The very same ability to put oneself in the shoes of others was also the basis for the development of the ability to put oneself in one's own shoes projected into the future. This is the basis for planning, investing, and quite generally for resource-oriented behavior. People are by no means always good at considering the future (Gilbert & Wilson, 2000), but the ability to have a future-oriented overarching goal is there and can be trained. The overarching goal that is linked to this future orientation is "to increase (or keep from decreasing) your resources," called a *gain goal*. It has a longer term orientation and makes people highly sensitive to changes in resources (such as winning opportunities, possible losses, and out-of-pocket costs). This sensitivity combined with the ability to put oneself in the shoes of others and of oneself in the future is also the basis for cheating and exploitation (Epley, Caruso, & Bazerman, 2006). Thus, the same ability that supports a truly social overarching goal (to realize group goals) also allows a quite selfish overarching goal that relates to the improvement of one's resources (be that in terms of valuable goods, status or money). The cross-episode effects that belong to overarching goals have also been demonstrated for the gain goal. For example, Caruso, Vohs, Baxter, and Waytz (2012) found that the mere exposure to money (strengthening the gain goal) increased the willingness to rationalize social injustice through strategies of blaming the poor and unfortunate for their fate, that is, it decreased the normative concern about social injustice. Other examples are the many investigations of a "crowding out" effect (Frey & Jegen, 2001). For example, Falk and Szech (2013) conducted experiments on markets (bilateral and multilateral double auctions) and concluded that "markets erode moral values." People are by no means always good at considering the future (Gilbert & Wilson, 2000) and the salience of the gain goal is highly dependent on the social environment. Even though both hedonic and gain goals can be said to be linked to rewards, they are linked

to different kinds of rewards and to different time perspectives, even in the neural systems (McClure, Laibson, Loewenstein, & Cohen, 2004).

For behavior, it is thus important which of the three overarching goals is the most salient. This depends to a large extent on cues that influence the interpretation of the situation. For example, Liberman, Samuels, and Ross (2004) found that labeling one and the same social dilemma as either a "Community Game" or a "Wallstreet Game" made cooperation rates differ markedly.

RELATION OF OVERARCHING GOALS TO SELF-MANAGEMENT

There are at least three important links of overarching goals to self-regulation. First, each of the three overarching goals is all by itself a form of self-regulation in the sense that when it is salient, it helps realize important aspects of adaptive behavior. The hedonic goal helps regulate the satisfaction of fundamental needs, the normative goal helps regulate contributions to collective goods, and the gain goal helps realize resources that are necessary for both the satisfaction of fundamental needs and the ability to contribute to collective goods.

Secondly, "effortful" self-regulation involves dominance relationships between the overarching goals, because the *a priori* strength of the overarching goals is not equal. In terms of lower and higher level self-regulatory processes, there is an important difference. When the hedonic goal is salient, lower level processes (not much sensitive to context) are highly active. By contrast, the other two overarching goals are mainly instruments of higher order self-regulation, that is, of processes that involve much attention to context. In addition, they involve inhibiting lower order self-regulatory processes, such as falling asleep, giving in to inappropriate urges, giving priority to short-term benefits, and help regulate emotions.

Both, attention to context and inhibitions, require much mental energy and thus the gain and normative goal need extra support to be strong enough to inhibit the hedonic goal. For this very reason, the most prominent example of "effortful" self-regulation is impulse control, that is, the tendency to counteract or override a prepotent response (often called *self-control*). In most cases this involves the gain- or the normative goal inhibiting the hedonic goal. Effortful self-regulation also entails the normative goal inhibiting the gain goal. An example is finding a wallet with a sizable amount of money, being tempted to keep the money, and deciding nonetheless to turn it in to the lost and found without removing all or some of the money.

Third, because each overarching goal is important for achieving important aspects of adaptive behavior, self-regulation also entails finding a balance between the three goals. What it involves to achieve a balance depends, however, on the supports for overarching goals that are present. For example,

resisting temptations is very important when the hedonic goal is relatively strong. However, when the support for the normative goal is very strong, one may even have to plan one's "fun" and other hedonic experiences (Kivetz & Simonson, 2002). We thus have to look at the supports (and lack of supports) of overarching goals that are present in a culture (macro level), in the group and organizational contexts (meso level) and in relationships and individual differences (micro level). I briefly discuss each of these levels.

SUPPORTS FOR THE OVERARCHING GOALS

THE MACRO CONTEXT

Institutions can influence the conditions for self-regulatory capacity in a variety of ways, but mostly importantly via their supports (or lack of supports) of overarching goals (2006). If you lived in a society in which the institutional context strongly supports, say, the normative goal, as in Victorian society, self-regulation would meet different challenges than if you lived in a society in which institutions strongly support the gain or hedonic goal. Classical sociologists have shown time and again that institutions can push a society in one of the three directions of the overarching goals. For example, against economists who assume the gain goal to be the human default orientation, Max Weber has spent much of his career showing that it takes considerable institutional changes in law (e.g., due process and property rights), religion (e.g., methodical life conduct), governance (e.g., technically expert bureaucrats and predictability) to make the gain goal as prominent in society as it is in Western societies (see, e.g., Weber, 1961 [German original 1923]). Similarly, Durkheim went to great lengths to show that religious institutions and educational institutions are important supports for the normative goal and that institutions that favor individualization are likely to weaken the normative goal [Durkheim, 1951 (French original 1897); Durkheim, 1961 (French original 1925)]. More recently, social critics have focused on aspects of dehierarchisizing market societies with their institutional emphasis on both the gain and the hedonic goal (Lindenberg, 2006). The gain goal is vital for the effort of entrepreneurs, for the competitive nature of market transactions, and for the earning power of consumers. The more market institutions become prominent, the more support the gain goal gets in market settings, and the more domains will be treated as market settings. Thus, self-regulatory problems are likely to occur with regard to the normative goal frame (such as fraud and corruption) and with regard to the balance between overarching goals (e.g., burnouts and work–home interference in the context of career striving). Many social critics have described what they consider an excessive salience of the gain goal. For example, in his book "What Money Can't Buy. The Moral

Limits of Markets" (Sandel, 2012), the social philosopher Sandel criticizes that what he calls "market values" (i.e., a salient gain goal) crowd out "none market norms" (i.e., the normative goal) in virtually every aspect of life. At the same time, the more market institutions become prominent, the more salient the hedonic goal will become in consumption settings, because in a market economy, consumption needs to be kept on a high level. For example, Galbraith (1958) observed that in affluent societies many wants are created by the very processes that satisfy them. Dangers include overspending and overeating.

THE MESO CONTEXT

Influences of institutions on overarching goals also play a major role inside organizations. There, the governance structure can support a particular over-arching goal, with pronounced consequences for behavior. For example, a governance structure that is mainly based on incentive alignment between the organization and each employee will make the gain goal very promi-nent. To the degree that the governance system works, the self-regulatory problems of employees will mainly lie in keeping to the rules when mon-itoring is low and rules are in the way of personal advancement. By con-trast, a governance structure that mainly focuses on teamwork and jointness of production or on a common cause appeals mostly to the normative goal (Lindenberg, 2013b). In such organizations, the self-regulatory failures will be mainly linked to the difficulty of combining following rules with intel-ligent effort concerning the organizational goals (Birkinshaw, Foss, & Lin-denberg, 2014). If organizations try to motivate employees by emphasizing hedonic aspects of work (such as fun at work, fancy offices, and cafeterias), the self-regulatory failures will be related to the difficulty of keeping to the rules and doing unpleasant but necessary tasks, and self-regulatory balance failure by many will lead to an organizational culture of procrastination and last-minute efforts, with hero status for those who can get things done in the face of disaster (Perlow, 1999).

The relation between groups also affects the relative strength of the overar-ching goals. For example, group competition increases the relative strength of the gain goal for interactions between groups and of the normative goal for interactions within groups (Lindenberg, 1998; McCallun, Harring, & Gilmore, 1985).

THE MICRO CONTEXT

Self-regulation presupposes a fairly stable sense of self. In the relational sphere, factors that affect the strength of the self negatively (such as social

exclusion) will lower the self-regulatory ability (Baumeister, DeWall, Cia-rocco, & Twenge, 2005). Because self-regulatory ability needs to be socially embedded, there are also strong contagion effects. For example, being related to others with low self-control negatively affects one's own self-regulatory ability (Evans & Kutcher, 2011).

This holds prominently for the important role of the normative goal in self-regulation. Because this overarching goal needs so much extra support to be able to dominate the hedonic (and also the gain) goal, relational supports are of crucial importance, especially when neither the culture nor the organizational context provide strong supports. In the relational sphere, this support consists mainly of positive (and lack of negative) cross-episode effects (as described earlier). Significant others have potentially an especially strong impact on the strength of the normative goal (Lindenberg, 2013a), so that failures of secure attachment to significant others (e.g., because the ethnic group of one's immigrant parents is despised) is likely to be associated with lowered self-regulatory ability.

Lastly, there are trait-like individual differences in self-regulatory ability. Such differences make it important that people can self-select into environments that best fit their self-regulatory capacities and associated personality traits (Dohmen & Falk, 2011; Lindenberg, 2013a). This also creates interaction effects between the macro, meso, and micro levels. Yet, the costs of changing environments can be prohibitive (such as changing countries, or moving from inner city slums; or breaking out of criminal networks) and that means that people may be stuck with negative influences on their self-regulatory capacity and seemingly behave more "irrational" than others. When self-regulatory ability is low and cannot be improved, the government would do well to provide default contracts that protect people with regard to important decisions concerning mortgages, marriages, partnerships, and so on, and other "nudge" devices (Thaler & Sunstein, 2008).

CONCLUSION

Rationality, as it is conceived of in economics, is linked to a highly stylized theory of self-regulation that misses out on the behavioral roots of self-regulation in the dynamics of overarching goals and on the strong dependence of self-regulation on factors of the social environment. Human self-regulatory capacity developed in a process of gen-–culture coevolution for making humans better able to take care of themselves in the context of larger groups, and to establish and maintain the conditions for being able to take care of themselves (such as the ability to elicit the cooperation of others, and to be able to adequately cooperate with others). The basis for

the self-regulatory capacity is the mental architecture of overarching goals (mindsets): the hedonic goal directed at improving the way one feels, the gain goal directed at improving one's resources, and the normative goal directed at the realization of collective goals. Self-control consists of the domination of the normative and gain goals over the hedonic goal, and of the normative goal over the gain goal. But self-regulation is more than self control: it is also seeking a balance between the three overarching goals, each of which governs important aspects of adaptive behavior. The crucial point is that the relative strength of these overarching goals depends on social factors on the macro, meso, and micro levels. If somebody seems to behave irrationally, say because he buys things he cannot afford, or lashes out at people on whose support he depends, it can be interpreted as a failure of self-regulation. But because the ability to self-regulate depends crucially on factors in the social and institutional environments, it can be influenced in either direction. This changes how we should look at institutions (including norms). Their power to channel behavior via incentives is only a small part of what they do. The way they affect self-regulatory ability itself (including the ability to respond to incentives) is centrally important.

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