Relational Incentives Theory

Jana Gallus*, Joseph Reiff, Emir Kamenica, Alan Page Fiske

Social life frequently involves incentivizing people to do things, and do them well. Relational incentives theory posits that the effects of incentives depend on whether they fit the relational structure between the persons involved. The theory distinguishes between ‘means’ (what is used as an incentive) and ‘schemes’ (how the incentive is used). Prior research has focused on means (e.g., monetary vs. non-monetary incentives). Our theory highlights the importance of schemes. The schemes we posit are derived from relational models theory, which indicates that people generally use only four models to structure their relationships, across all domains and cultures. Incentivizing is part of social relationships, and hence follows the same structures: participation schemes for communal sharing relations, hierarchy for authority ranking relations, balancing for equality matching relations, and proportional schemes for market pricing relations. We show that these four schemes comprise some of the most prevalent variants of incentives. We argue that incentives are most effective if the scheme is congruent with the relational model coordinating the activity, thereby reinforcing the relationship. Incongruent incentives disrupt relational motives and emotions, which undermines the coordinating relationship and reduces effort. But there is one important exception: Incongruent incentives can be used to shift to a new relational model. The theory contributes to research on relational models by showing how people constitute and modulate relationships. It adds to the incentives and contracting literatures by offering a framework for analyzing the structural congruence between incentives and relationships, yielding predictions about the effects of incentives across domains. Keywords: incentives, relational models, congruence, schemes
Jana Gallus, UCLA Anderson School of Management, University of California, Los Angeles; Joseph Reiff, UCLA Anderson School of Management, University of California, Los Angeles; Emir Kamenica, Booth School of Business, University of Chicago; Alan Page Fiske, Department of Anthropology, University of California, Los Angeles.

Corresponding author: jana.gallus@anderson.ucla.edu; UCLA Anderson School of Management, 110 Westwood Plaza, Los Angeles CA 90095.

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Incentives are central to all spheres of social life. People constantly use and respond to incentives in their interactions with others at home, at work, and in public life – incentivizing is an integral feature of relationships, and indeed of all social coordination. We posit that people interpret incentives against the backdrop of the relationships in which they are used. Conversely, people interpret relationships in light of the incentives that are being employed.

We propose a theory of how incentives and social relationships interact, which provides insights into when and why incentives ‘work’, and when and why they have unintended consequences. We introduce a distinction between schemes (how the incentive is used) and means (what is being used as an incentive). Much of the prior research on incentives has focused on the effects of different means, particularly the distinction between monetary and non-monetary incentives. In contrast, we argue that the schemes may be even more important.

We build on prior work in anthropology, psychology, and sociology which shows that, across cultures, people use just four fundamental structures to coordinate most interaction (Fiske 1991, 1992). These coordinating “relational models” are communal sharing, authority ranking, equality matching, and market pricing. Since incentivizing is part of relationships, we propose that its fundamental structure, too, can be derived from relational models theory. This reveals four distinct types of incentive schemes: participation, hierarchy, balancing, and proportionality, respectively. These four schemes encompass some of the most prevalent variants of incentives in organizations (e.g., fixed salaries, rank incentives, revenue sharing, and piece rates), and beyond.

The crux of our thesis is that the effectiveness of incentives depends on the structural congruence between the incentive scheme and the relational model that coordinates the incentivized activity. The scheme and the coordination of the activity are congruent when both are based on the same relational model: participation incentive schemes for
activities coordinated by communal sharing, hierarchy incentive schemes for activities coordinated by authority ranking relationships, balancing incentive schemes for equality matching, and proportional incentive schemes for market pricing relationships. The means, in contrast, are only one among many cues to the type of relationship underlying the activity. And any means can in principle be used in any scheme, though in a given scheme some means are more commonly used than others.

Congruent incentive schemes tend to be effective and incongruent schemes backfire because people expect others’ behaviors – including their choice of incentives – to follow the same structure as that of the coordinating relational model. Congruent incentives generally motivate greater effort and commitment by reinforcing and evoking congruous relational motives, and thus reinforcing the relationship: participation incentive schemes reinforce the unity motives undergirding communal sharing relations, hierarchy incentives reinforce the hierarchy motives in authority ranking relations, balancing incentives reinforce the equality motives in equality matching relations, and proportional incentives reinforce the proportionality motives in market pricing relations. Relationships, we contend, are a major source of motivation. So when the incentive scheme reinforces the relationship, it will strengthen the motivation to exert effort in the coordinated activity. In contrast, incongruent incentives cause confusion, friction, disengagement, or condemnation that decreases devotion to the relationship and thereby reduces motivation to effectively perform the coordinated activity.

But there is an important exception: An incentivizer can use an intentionally incongruent incentive to invite the incentivized person to shift to a different relational model. In that case, if the incentivized person also prefers that new relational model, the incentivizing act facilitates the shift.

This observation makes an important contribution to relational models theory, which has so far mostly focused on categorizing social interaction and identifying each relational
model in new domains of human activity. Relational models theory has previously failed to address agency and process (Whitehead, 1993). That is, relational models theory has not explained how people modulate their engagement in social relationships, or how people resist or reject imposed relationship structures. Nor has it explained how people are able to shift from using one relational model to using another. In this paper, we show how agentic incentivizing and responding to incentives constitute one such dynamic process, thereby animating relational models theory. That is, we show one way how people can sustain, change, or resist changing the relational model with which they coordinate in a given domain.

Conversely, relational models theory provides a well-grounded theory that we can build on to identify and understand the major types of incentives that are universally used, and then theorize when and why each is effective, ineffective, or even backfires. Beyond that, our theory contributes to the literature on incentives in several complementary ways. Previous work has focused on the distinction between monetary and ‘non-monetary’ means (e.g., Deci, 1971, Frey, 1997, Fehr & Gächter, 2000, Gneezy et al., 2011, Frey & Gallus, 2017). Our taxonomy shifts the focus from the means to the incentivizing schemes. Prior research on the mechanisms behind the effects of incentives has emphasized signals about the task and the incentivized individual (Deci, 1975; Bénabou & Tirole, 2003, 2006). We shift the focus to the relationship, and in particular to the incentivizer’s and incentivized persons’ relational motives and moral sentiments. By doing so, we extend previous work that suggests that ‘economic incentives’ (money) may backfire by signaling that the relational coordination is a market pricing transaction and not a ‘social exchange’ (e.g., Kreps, 1997; Fehr & Falk, 2002; Heyman & Ariely, 2004; Bowles, 2016). We illuminate the contingent efficacy of incentives by building a broader theory of relationships and incentives, going beyond the simple dichotomizations into market vs. ‘social’ relations, and monetary vs. non-pecuniary incentives. Our mechanisms are cognitive, as in the economic accounts of backfiring effects (e.g., Bénabou & Tirole, 2003); but we also add and emphasize
motives and emotions, not just information about individuals or tasks. Moreover, our approach analyzes incentivizing as an essentially social relational process, in which people’s motives and actions are to a large degree oriented toward sustaining or changing relationships. Thus we transcend the methodological individualism which restricts itself to the separable or additive utilities of individuals.

Our theory is consonant with and extends a major theme in the social sciences. Adam Smith (1759) famously wrote about man’s “natural” desire to be loved and lovely. Other scientists have made somewhat similar arguments to ours, writing about the motivating effects of the ‘social environment’, and have studied related constructs such as “social rewards” (e.g., Tamir & Hughes, 2018), “social factors” (e.g., the desire for status, Bernheim, 1994), “social approval” and “reciprocity” (e.g., Fehr & Falk, 2002), “social image concerns” (Bénabou & Tirole, 2006; Gneezy et al., 2011), or “social incentives” (e.g., Bandiera et al., 2010; Ashraf & Bandiera, 2018). Harsanyi proposed that “[p]eople’s behavior can be largely explained in terms of two dominant interests: economic gain and social acceptance” (1969:524). In organization theory, Barnard wrote that the “need for communion is […] essential to the operation of every formal organization” (1968:148; see also Ouchi, 1980). In sociology, Granovetter considered social networks “an important source of reward and punishment, since these are often magnified in their impact when coming from others personally known” (2005:33). In social psychology, social identity theory has brought to the fore the importance of group memberships and identities (Tajfel et al., 1971, 1979; see Akerlof & Kranton, 2000, for the connection between identity and labor supply). Baumeister and Leary have prominently argued that “the need to belong is a powerful, fundamental, and extremely pervasive motivation” (1995:497).

We contribute to, integrate, and go beyond these important streams of literature by examining how the four fundamental types of social relationships shape the uses and effects of incentives, and how incentives in turn shape relationships. We suggest that
when assessing the effectiveness of incentives, we need to go beyond standard instrumental outcomes such as effort and performance and instead also consider the effects on relationships. Is a relationship strengthened, is it weakened or destroyed – or is it shifted to a different relational model? Moreover, unlike previous work in relational contracting and theories of social exchange that consider ‘relationships’ instrumentally, as a means to an end (e.g., Baker et al., 2002), we posit that people also often perceive social relationships as vital ends in themselves.

At a most fundamental level, we contribute to the foundational work in social psychology showing that human motives, judgments, and behavior are highly dependent on the situation (e.g., Ross & Nisbett, 2011; O'Reilly, Chatman, & Caldwell, 1991). More specifically, situations consist of social relationships. As Clark, Lemay, and Reiss (2018:27) summarize their review, social-psychological research indicates that “relationship contexts are one of the most powerful and pervasive situational influences fundamentally shaping human behavior.” Similar arguments have been made in other literatures, such as the organizational behavior literature on relational contracts that emphasizes the importance of “social context” (e.g., Rousseau & McLean Parks, 1993:4). Researchers and practitioners have pointed to the importance of ‘fit’ between incentives and such social-contextual factors as organizational culture (Schein, 1985). We provide a parsimonious theoretical framework to identify and analyze fit in terms of congruence between incentive and relational structures, and to make testable predictions about just what incentives are congruent with what social relational contexts, and how incentives can be used to shift relational models. We further explain why fit affects effort: Congruence reinforces the relationship mode that structures the coordinated activity and that aligns the relational motives of the people involved.

In Part 1, we use relational models theory to develop a novel taxonomy of incentive schemes. Part 2 discusses congruence between the incentive schemes and the relational model that coordinates the activity. It deals with incongruence of two kinds:
unintended and intended. This introduces the notion that parties may use incongruent incentives to facilitate a coordinated transition to a new relational model. Part 3 presents the potential of relational incentives theory to illuminate questions as wide-ranging as why contracts are often incomplete; when motivational crowding out does and does not occur; why managers compress performance ratings; why entrepreneurs often choose even equity splits; how persons sort into activities, organizations, and occupations; how incentivizing functions in contexts with multiple layered relationships; and the limiting case of our theory, which is when the relationship itself becomes a sufficient incentive. We end with a brief discussion of the long-term consequences of incentive schemes.

1. Incentives: Schemes and Means

We use the term “incentives” to designate a method by which one person attempts to induce another to do something via a modification of the targets’ motives or sentiments. Thus, incentives refer to the combination of what is being used (the means), and the way in which it is used (the scheme).

We use the term “relationships” not in the colloquial sense of relatively enduring friendship or loving relations, but in the technical sense of socially coordinated activity in which the participants are all generating action; interpreting and evaluating action; encoding and processing action; shaping goals; and motivating and generating emotions with reference to the same culturally implemented cognitive model.

1.1 Deriving the four fundamental incentive schemes from relational models theory

Incentives and social relationships are inherently connected: Social relationships are premised on incentives, and incentivizing is an essential part of human relationships. As we discuss below, what economists study as ‘incentives’ has substantial overlap with what psychologists call ‘influence.’ Reviewing the extensive social psychology literature on social influence, Cialdini and Goldstein (2004:591) conclude that one of the key
factors underlying a person’s susceptibility to other’s influence is the motivation “to develop and preserve meaningful social relationships”. They show that when people are influenced to do something, it is often because they seek approval, and feel bound by social commitments they have made. In accord with this, we construct a theory of incentivizing that builds on relational models theory, a general theory of human social coordination, its motivation, and the relational commitments people recognize (Fiske, 1991, 1992). Relational models theory is based on an integration of major social theories, joined to a synthesis of ethnographies and histories from diverse cultures. It has been validated by hundreds of researchers in social cognition experiments, and used to make sense of scores of real-world social phenomena (for early reviews see Whitehead, 2003; Haslam, 2004a).

Building a relational incentives theory on relational models theory has the virtue of giving the incentives theory a broad ethnologically and historically validated base with extensive support from social cognition experimentation. It also provides a formal axiomatic-analytic framework for a derivation of incentive schemes, pre-empting reliance on culturally-particular common-sense categories as scientific constructs (Fiske 2019).

Relational models theory posits that social coordination in virtually all domains in all cultures throughout history is based on four fundamental relational models. People use a relational model to generate action, understand others’ action, encode it in memory, reflect on and recall social interaction, as well as to morally evaluate and sanction it. Coordination is possible just to the extent that the persons who interact are using the same relational model, implemented in the same culturally-informed manner. The four relational models are communal sharing, authority ranking, equality matching, and market pricing. Each has a distinct formal relational structure and corresponding measurement scale type (Fiske, 1991, 1992), which we can use to derive homologous incentive schemes. Table 1 provides an overview.
Communal sharing relationships are ones in which people feel that they are the same in respect to whatever they are coordinating: they are socially equivalent. When we coordinate in a communal sharing manner, your happiness is my happiness, what’s mine is yours. Formally, communal sharing is an equivalence relation. People belong to many communal sharing relationships, being equivalent in some respects to members in a work group or sports team, in other respects to members of the same family, home town, race, or gender. The relations and operations that are socially meaningful in a communal sharing relationship are precisely those that are metrically meaningful in a nominal (categorical) scale of measurement. The motive generating communal sharing is the need for unity (also called the need for ‘communion,’ ‘need to belong,’ ‘affiliation motivation,’ or ‘intimacy motivation’).

Authority ranking relationships consist of asymmetrical relations ordered in a linear hierarchy. Subordinates owe deference, respect, and sometimes obedience to their superiors, who have a pastoral responsibility to guide, lead, and stand up for their subordinates. Examples of authority ranking include the relationships between ‘boss’ and employees, superior officers and subordinates, a divinity and her worshippers, and, in many cultures, hierarchical relations between genders or among castes. Formally, authority ranking is a linear ordering; the relations and operations that are metrically meaningful in an ordinal scale of measurement correspond to those that are socially meaningful. Authority ranking is a relationship regarded by its participants as proper, legitimate, and natural. It is created and sustained by the need for hierarchy (also called ‘power motivation’).

Equality matching relationships are based on additive differences with reference to even balance. Examples include turn-taking, voting, conscription lotteries, rotating credit associations, tit-for-tat in-kind reciprocity (but not other sorts of ‘reciprocity’), and a-tooth-for-a-tooth, an-eye-for-an-eye vengeance. Formally, equality matching relationships are ordered Abelian groups, giving social meaning to the same relations
and operations that are metrically meaningful in an interval scale of measurement. A specific equality motivation undergirds these relationships (Rai & Fiske, 2011).

Market pricing relationships consist of coordination with respect to some socially constituted ratio, rate, or proportion. They include all sorts of cost-benefit analyses and proportional allocations; expecting to spend time in purgatory in proportion to one’s sins, or determining penal sentences in proportion to the crime with its aggravating circumstances – that is, justice as proportionality ("equity"). The relations and operations that are socially significant in market pricing are precisely those of an Archimedean ordered field, and hence are homologous with a ratio scale of measurement. For the study of incentives, it bears emphasizing that the market pricing construct need not involve money or selfish utility maximization – people often use market pricing to coordinate without any of these other features posited by economic theory. Proportionality motivation, closely allied to ‘need for achievement,’ is behind market pricing.

[Insert Table 1]

1.2 Incentive schemes according to each relational model

Since incentivizing is a central aspect of social coordination, we argue that it, too, is structured according to the four fundamental relational models that are used for all human coordination.

What we call participation incentives consist of acts and expressions of inclusion in the group, given for making a sincere effort to participate, regardless of the amount or quality of the contribution. Participation incentives say to the recipient “you belong in our group, you are one of us.” Thus participation incentives establish an equivalence relation, as in a categorical scale, indicating that what the person did makes them a member of the group – they are just the same as us (in this respect and context, at least).
In contrast, *hierarchy incentives* consist of *acts and expressions of rank* based on any ordinal criterion. A hierarchy incentive may be a promotion, prize, or award that ranks the recipient in a linear social ordering, as in a tournament or race in which the outcome is that someone comes in first, someone comes in second, another competitor is the third-place finisher, and others follow behind. Absolute performance on the task is not the basis for the incentive; what matters is relative performance. Hierarchy incentives are often bestowed by someone higher in rank than the recipient, although peers may also choose to set up tournaments or select a person for an award, as academic societies name a “Distinguished Scientist” or make a person the keynote speaker. Hierarchy incentives are linear orderings, like ordinal scales.

*Balancing incentives* consist of acts and expressions that make the recipient even with others in the reference group. To balance is not to be equivalent, not to be the same. It is to be on the same *level*, to be equal in the sense of being *evenly matched*. A balancing incentive is a return in kind for what the person did: In effect, the balancing incentivizer puts weights in one pan of a balance scale until the two pans are level, demonstrating that what one recipient is getting matches in one-to-one correspondence what the others are getting – everyone is equal, in the sense of being even. Balancing incentives use an interval scale of reciprocation or distribution, using addition and subtraction just as in an ordered Abelian group.

*Proportional incentives* consist of acts and expressions that are given *in a ratio according to the amount that the recipient contributed* to the coordinated activity – whether measured in time, pieces, effort, efficiency, impact, or on some other dimension or magnitude denominated in rational numbers. Proportional incentives are given according to a ratio scale of measurement with the relational properties and operations defined in an Archimedean ordered field. That is, a proportional incentivizer can multiply the value of each different kind of contribution by its magnitude, then add them together.
to compute the total – and then calculate the amount of an incentive that is qualitatively distinct from the incentivized contribution, but fungible with it. So everything being coordinated is measured in the common currency of the utility of what the person did, which also measures the value of the proportional incentive. Unlike balancing incentives, which consist of even distribution or in-kind reciprocity where each person gets a unit of the same entity, in one-to-one correspondence of like kinds, proportional incentives consist of the bestowal of the means in proportion to something different. Thus driving you to work in return for your driving me to work is a balancing incentive. Shortening your prison sentence by a period of time commensurate to your good behavior is a proportional incentive. So is awarding grades according to the quality of work done in a course.

To illustrate the distinction between participation and balancing schemes, consider a case where the incentive means is a watermelon, a balancing incentive could consist of cutting equal-sized slices and assigning them to persons, one slice for each incentivized person. In contrast, a participation incentive would consist of everyone simply helping themselves to the watermelon, taking as much as they like – without keeping track of individual consumption – because it belongs to them all together; they are participating in its consumption. Another example: in childcare, a participation incentive could consist of being inducted into the family-like group where everyone takes care of everyone’s children; childcare is a joint, undivided responsibility of the group as a whole. Perhaps they all gather every day and together watch after all of the children. A balancing incentive in childcare might consist of receiving care for your child on some occasion in return for your taking care of another person’s child on a previous occasion: the incentive balances the incentivized act, in one-to-one correspondence. Of course, the delineation of the act depends on the local culture and conventions, which will determine, for example, whether participants balance babysitting occasions or hours of babysitting, whether babysitting two children counts the same as babysitting one child, and so on.
1.3 Instances of the four incentive schemes

A look at the empirical and theoretical literatures shows that the principal ways of incentivizing indeed correspond to the four incentive schemes we derived from relational models theory. We do not claim that these are the only valid ways of thinking about incentive structures. For some purposes, one needs to consider combinations of schemes; for others, one needs to make distinctions regarding the amount of the incentive (e.g., Williams et al., 2006), their public or private nature (e.g., Gallus & Heikensten, 2020), and so forth. But we do argue that classifying incentive schemes according to this taxonomy of fundamental forms is crucial for understanding incentive effectiveness.

Tables 2-4 catalogue incentives that people use in social life and that scientists in different literatures study. They show that despite the superficially great variety of ways of incentivizing, most are well-characterized as instances of one of just four fundamental schemes: participation, hierarchy, balancing, or proportional.

Table 2 considers incentives as they are used within and beyond organizations. The table shows that the four schemes help us classify the major incentive ‘types’ in formal organizational life, such as, respectively, fixed salaries (one kind of participation incentive scheme), discretionary bonuses and promotions (one kind of hierarchy incentive scheme), profit sharing (where equal splits are a balancing scheme), and piece rates (proportional). It also spans the main ways of incentivizing in informal coordination efforts, such as within the family: respectively, participation in a joint reward, hierarchically ordered rewards, balancing incentives through turn-taking or random draws, or offering rewards in proportion to some criterion, such as time spent cleaning the house.

[Insert Table 2]
Table 3 covers prior literature on incentives. It shows that researchers in different fields of the social sciences have repeatedly and independently observed the four fundamental structures of incentives. They have usually considered incentives in one specific field (e.g., the labor market, education), often without discussing the generality of the underlying incentive structure. A few scientists have recognized all four schemes in one domain of sociality, but without appreciating that they all operate to enable coordination across all domains. Many researchers have identified one incentive scheme, or contrasted a pair of schemes – without considering all four. Other researchers have made binary distinctions that conflate schemes that are differently structured and hence are effective in different kinds of activities, such as treating all ‘social’ incentives as functionally identical, or lumping all ‘economic’ or ‘monetary’ incentives together.

The table includes many of the important lines of research related to incentivizing, though it is far from exhaustive. Even this selection shows that there are fundamental similarities among the phenomena studied in different fields of the social sciences, under different construct rubrics. These parallels only become visible when incentivizing is analyzed in terms of the four schemes. As Panel A of Table 3 shows, economists, organizational behavior- and management scholars have identified variants or subsets of the four incentive schemes (e.g., Ouchi, 1979, Trice & Beyer, 1984, Prendergast, 1999, Rynes et al., 2005, Dohmen & Falk, 2011, Kagan et al., 2020).

The social psychological construct of ‘social influence’ closely corresponds to the construct of ‘incentives’ in economics and management (see Panel B of Table 3 for the following discussion). Colloquially speaking, all three fields are concerned with how people get other people to do something (though they also sometimes address how people unintentionally or even unknowingly affect other people’s behavior, motivation, attitudes, or beliefs.) It is striking that the vast social psychology literature on influence has revealed three of the four incentive schemes (generally leaving out proportionality,
which they take for granted or leave for economists to study; for comprehensive reviews see Cialdini, 2008; Cialdini & Goldstein, 2004). In contrast to most of economics and management research and theory on incentives, social psychology research on influence, compliance and conformity explores how the social relationship itself shapes a person’s behavior, motivation, attitudes, and beliefs – even in the absence of any manifest, tangible means. For example, if one aims to get someone to try a new food, having a dinner party with her close friends eating the new food is likely to be effective. The phenomena studied under the rubric of ‘influence’ are, if you like, the limiting case for relational incentives theory: where the schemes are not merely congruent with the coordinating relationship, but where the schemes are the relationship and there is no palpable means other than the relationship. Note that for the relationship itself to be an effective incentive, it is crucial that the ‘incentivizer’ be acting in accord with the relational model that the incentivized person expects or prefers: the two have to be ‘on the same page.’ Which is precisely what relational incentives theory predicts in this limiting case. Conversely, if, say, the incentivizer is acting as a superior authority while the other person expects, wants, and believes that an equality matching relationship is the only legitimate possibility, then the relationship, discordant as it is, has no incentive effect and may instead provoke anger.

In their classic theory, French and Raven (1959; Raven, 1993) use the term “power” to encompass all kinds of social influence (and they sometimes use the terms interchangeably). One mechanism is “referent” power, in which a person seeks to conform to a group that they belong to, or wish to join; this corresponds closely to our participation scheme. Using behaviorist concepts, French and Raven also identify legitimate “reward” and “coercive” processes in which a person exerts influence by providing reinforcements such as piece rate payments; this corresponds to our proportionality scheme, in which the rate and intensity of behavior that an incentive yields depend on the rate of reinforcement, positive or negative (this later became known as Herrnstein’s (1970) matching law, or the law of effect). French (1993) also
describes influence based on legitimate expectations of reciprocity (more or less corresponding to our balancing scheme), as well as influence through formal position, based on Weber’s (1978) conceptualization of obedience to the will of a legitimate authority (our hierarchy scheme).

People often comply with influence attempts in order to develop or preserve legitimate authority relationships (hierarchy incentives; for comprehensive reviews of influence research, see Cialdini, 2008; Cialdini & Goldstein, 2004). Relationships based on reciprocity is another kind of influence that Cialdini highlights: When A does something for B, such as offering a concession, B feels obliged to reciprocate in kind (balancing incentives). Cialdini also discusses some of the vast literature on conformity, citing studies showing that one reason why people accede to others’ requests is to maintain consensus: People want to be one with the group in terms of behavior and attitudes (see also Falk & Scholz, 2018) – whatever group they are categorizing themselves in at the moment. This is the foundation of participation incentives, which facilitate becoming one with a group – belonging. Perceiving and thinking like others is crucial to one’s social identity as a member of a group that defines who one is (Kelman, 1958; Moscovici, 1980; Spears, 2020; Turner, 1991). This theme is salient in self-categorization theory, consonant with our central thesis that what matters is whether an incentivizing act is congruent with the social relationship in which it occurs. Spears (2020:8) writes that “Self-categorization theorists have long argued that self-categorization is highly flexible, fluid, and context dependent”. People think and act like other members of the group with which they are identifying at the moment – particularly when they feel that their group identity entails a moral prescription to loyally conform, or to favor the group (Spears, 2020).

Although nearly everyone is inherently motivated to engage in all four fundamental types of social relationships, and hence is sensitive to all four incentive schemes, there are individual differences in proclivities to engage in each type of relationship (Haslam,
These individual differences, we hypothesize, result in differential sensitivity to each type of scheme (see Panel C of Table 3). Individual degree of inherent motivation to engage in communal sharing, and hence responsiveness to participation incentives, is measured and studied by the constructs of intimacy motivation or need for affiliation (Hill, 1987; McAdams, 1988, 1989). Individual degree of motivation to engage in authority ranking, and hence in motivation to respond to hierarchical incentives, is variously conceptualized as need for power, authoritarian personality, or social dominance orientation (Winter, 1973; McClelland, 1975; McAdams, 1988; Adorno et al, 1950; Prato et al, 1994). Disposition to engage in market pricing, and hence sensitivity to proportional incentives, is conceptualized as need for achievement – the need to rationally calculate the expected utilities of the options for social coordination (Atkinson & Feather, 1966; McClelland, 1976; McClelland et al., 1953).

[Insert Table 3]

Drawing these connections between incentives, relationships (e.g., forms of power and influence), and individual-level differences in motives and cognitive relational proclivities sheds further light on a “central thesis” advanced prominently by Rousseau and McLean Parks (1993); namely, that contracts in organizations are fundamentally mixed-level phenomena: Understanding contracts (and incentives) requires the study of individual cognition and organizational context, but research has typically looked at these in isolation. Our table shows how they can be integrated under one theoretical roof, mutually supporting each other and extending the range of phenomena covered by our integrative theory.

Table 4 further visualizes these deeper connections across different literature streams in the social sciences. Besides showing the fundamental importance of the four
schemes and their relevance for any social scientist studying incentives, we hope that laying out the four schemes will help researchers in these literatures adopt a new perspective on what they have been studying. We hope that this will encourage researchers to investigate the additional incentive types that may have received little or no attention in their respective fields. Even if a researcher’s interest is limited to understanding one specific incentive scheme, it is only by understanding the alternatives that the researcher can develop a full understanding of that scheme. That is, we can understand what each scheme is only by appreciating what it has in common with others and precisely how it differs. Furthermore, full understanding of how a scheme functions in one sphere of social life in one culture requires comprehension of how that scheme functions in other spheres of life within and across the full panoply of human cultures.

[Insert Table 4]

By displaying the four distinct incentive schemes as they are used in different spheres of social life and studied in different literatures, Tables 2-4 also make the fundamental point that schemes matter – and that they can and should be analyzed separately from the means.

1.4 Incentive means

Previous research has put a strong focus on the means that people use to incentivize: the medium of the incentivizing act, and money in particular (e.g., Deci, 1971; Frey, 1997; Deci et al., 1999; Gneezy & Rustichini, 2000a; Cameron et al., 2001; Heyman & Ariely, 2004; Vohs et al., 2006; DeVoe & Iyengar, 2010; Lacetera et al., 2013; Frey & Gallus, 2017). We argue that the entity that is given to the incentivized person is not in itself crucial to its effectiveness or backfiring. What ultimately matters is the incentivizing scheme. Any means can be used in any scheme.
For example, when Fiske lived in Africa, when he visited a village family for the first time, his host presented him with a live chicken. Looking back on this, we can identify the chicken as an incentive. Before he knew the cultures, Fiske did not know if the chicken was a participation incentive intended to make him want to join the community. Or was it a hierarchy incentive, showing deference and offering him a superior position in the hierarchy – or an act of largesse from the host, claiming superiority over Fiske. It could have been a balancing incentive, inviting an equality matching relationship in which he should (after some culturally apt interval of time) return a chicken (of some sort, or perhaps some other balancing gift). It might have been an offer of sale, for which proportional payment was expected (in currency or in barter goods), offered in the hope of establishing some sort of trade relationship. A chicken can incentivize in any of these schemes and until you know the culture you do not know how the means – the chicken – is intended.

Certain means may be cues of one relational model or another – e.g., money for market pricing, trophies and titles for authority ranking, lottery tickets for equality matching, flowers for communal sharing. Frequent association may have turned these means into strong cues. But people also use other cues to identify the predominant relational model in a given coordination, such as other artifacts in use, surrounding architecture, and role terms (e.g., ‘boss’ and ‘subordinate’). The means are just one of the cues, and they vary according to activity and culture. Even money, the canonical market pricing means, is fruitfully used in communal sharing relationships (see the important work by Zelizer, 1994). And awards, the canonical authority ranking means, can foster communal sharing relationships – and thus motivate greater effort (see the field experiment by Gallus, 2017).

It is the way in which the means are used (the scheme), in conjunction with the relational model underlying the activity, that determine the effects of incentivizing. Whatever the activity or the culture, this structural congruence is the determining factor.
2. Congruence and Incongruence

2.1 The importance of congruence between incentive schemes and relational models

What is crucial for coordination is that the people interacting do so with reference to the same relational model, implemented in the same manner (Fiske & Haslam, 2005). Relational models generate expectations about others’ behaviors and motives. If people use different relational models, coordination breaks down. The effects of such breakdown go beyond the failed actualization of whatever was meant to be coordinated. Using discrepant relational models reduces or reverses motivation, engagement, and the complementarity of action necessary for social coordination. Furthermore, the use of an incongruent incentive makes people reconsider their assumption of a shared understanding about the relational model coordinating their activity; it often leads to the attribution that the incentivizer perceives and intends to coordinate according to a different relational model.

People care strongly about social relationships, and they can be powerfully motivating ends in themselves. When people behave in ways that reinforce the predominant relational model, shared commitment to the relationship increases, resulting in greater effort. However, when one person behaves in a way that is at odds with the predominant relational model, the other will be confused, disappointed, hurt or angry – and will judge that person to have acted inappropriately or even immorally (e.g., Rousseau, 1989; Rousseau & McLean Parks, 1993; Fiske & Tetlock, 1997; Rai & Fiske, 2011). Congruent incentive schemes generate moral obligations, while incongruent schemes evoke repugnance or retaliation. For example, when a superior provides wise guidance, stands up for subordinates, and leads them to success and distinction, followers are likely to feel that this leadership constitutes a more or less binding obligation to support the superior and do as she wishes (Weber, 1978). The fact that the authority is leading his followers to victory and success creates moral obligations to him.
whose incentive effect may transcend the effects of the material rewards his followers gain. Good leadership in itself is thus a hierarchy incentive because followers ought to support the good leader – and she ought to lead them well. Likewise, a strong communal sharing bond in which people take care of each other when they are in need is in itself a participation incentive because devoting oneself to the communal sharing dyad or group is a moral imperative. That moral imperative is added to the incentive effect of the caring the members receive. Likewise, in a market pricing relationship, when the other party has committed to or has a record of paying a fair price or wage, that alone creates a proportional incentive because one is morally obligated to fulfill one’s obligation to give fair value in return. The incentive effect of the price or wage paid is augmented by the moral imperative. When coordinating in accord with equality matching, for example by taking turns at an onerous or dangerous task, the fact that others have taken their turn constitutes a moral balancing incentive: one should take an equal turn. People implicitly know all this, with the result that they are often motivated to conscientiously do their part in a relationship partly in order to exert moral suasion that prompts the other(s) to do their part: assiduously performing his duties as a loyal subject, a person puts himself in the position of being morally entitled to his lord’s favor. A person may also explicitly evoke moral obligations to incentivize others: “I served in the Army in the last war; now it’s your turn.” The benefit received in the past from the other’s military service is an incentive to serve only because of the moral obligation to do for others what they have done for you. Such moral obligations are sometimes such strong incentives that people’s sense of duty motivates them to risk their lives or die. A soldier’s wages typically are not strong enough incentives to motivate that.

Thus, the mechanisms that relational incentives theory proposes are both cognitive and emotional. They involve judgments and emotions about the relationship, together with the motives inherent in the relationship and obligations that the relationship entails. When people perceive congruence between the incentive scheme and the coordinating relationship, their efforts in response are driven by the congruous relational motive –
that is, they exert effort to reinforce and enhance the relationship. These relational motives, and resulting effort, are sustained by sociomoral judgments that the incentive is fair, appropriate, and ‘right,’ together with the ensuing sociomoral emotions.

These mechanisms are fundamentally different from those in some prominent earlier theories that focus on how a person perceives a task or activity as such, asocially (e.g., Deci, 1971; Bénabou & Tirole, 2003). Relational incentives theory posits that it is not so much that people lose interest in the task (although that may be a result of the decreased or changed relational motivation underlying task engagement); it is not so much that they draw inference about their own abilities or motivations, or about the incentivizer’s beliefs about those. Instead, the mechanisms we are theorizing concern relational motives that depend on the form of relationship that the incentivized persons have and prefer with the incentivizer, and the relationship that the incentivizer appears to prefer.

Relational incentives theory is consonant with a major theme in cognitive science. A person’s response to an object – such as, we argue, the means used to incentivize – depends on the person’s expectations – including, we argue, their social relational expectations. To function socially, people need to understand the relational meanings of the objects that mediate their interaction. Using the language of Gibson’s (1979) theory of affordances, McArthur and Baron (1983:219) state it succinctly: “Perceivers with one expectation interpret the same stimulus information differently from those with another expectation”. They conclude: “What is perceived is first and foremost what perceivers need to perceive for adaptive interaction with their environment. . . . [A]ffordances are typically complex properties that have no one-to-one connection to the static, stimulus elements that are provided to perceivers in traditional research paradigms” (McArthur & Baron, 1983:234). Thus, for example, whether a means, say, money, incentivizes a person depends on the social relational meaning of that means in the current relationship.
Some major paradigms simply take congruence for granted. Social exchange theories have long been prominent in anthropology, sociology, social psychology, and management (for reviews, see Ekeh, 1974; Befu, 1977; Cook et al., 2013; and Cropanzano et al., 2017). In our terms, these theories assume that people incentivize others by offering something of value; it is usually assumed that the value of what each participant gets is somehow ‘equal’ to the value of what they give. For the most part, social exchange theories see coordination as instrumental and based on some sort of ‘reciprocity,’ in which people give things in order to get something back. Like relational incentives theory, social exchange theory aims to explain how people shape others’ behavior, motives, and sentiments. Yet there has been hardly any attempt to connect incentive theories with social exchange theories (though see Gächter & Fehr, 1999). Social exchange theories offer to incentive theories the insight that the processes involved are bilateral: there is giving and getting on both sides of the social relationship, and receiving entails a commitment to reciprocate in some manner. Exchange theories notably theorize social life as if virtually all interaction consisted of reciprocal incentivizing, which is a prompt to incentives researchers to consider the limits to such a theory. At the very end of the article we return to this question: When are incentives not needed, and in fact it is better not to offer any?

Relational incentives theory offers to social exchange theory the insight that when a person offers something to someone, what the person gets back from the recipient, if anything, depends on whether the scheme of the giving is congruent with the recipient’s perception of the social relationship in which the giving occurs. Our theory also highlights the existence of types of ‘exchange’ that are not primarily instrumental, nor adequately delineated by the binary contrast between ‘economic’ and ‘social’ exchange. Up until now, to our knowledge, social exchange theory has devoted little or no attention to exchanges in which the two or more parties differ in their perceptions and preferences for the type of exchange, or their judgments of the type that is legitimate.
So it appears that integrating the two theories in future work would be mutually and conjointly beneficial.

Relational incentives theory offers a distinct, complementary and partly alternative account of some of the phenomena that have heretofore been explained as the ‘crowding out’ of intrinsic motivation purported to result from a person’s changing attributions for her performing a task (Deci, Koestner, & Ryan, 1999; Kruglanski, Friedman, & Zeevi, 1971; Frey, 1997; Gneezy et al. 2011; Bénabou & Tirole, 2006; Kruglanski et al., 2018; Bénabou & Tirole, 2006; Ariely, Bracha, & Meier, 2009). Our theory is more closely aligned with crowding out theories that emphasize the person’s re-interpretation of the social relational structure of the coordinated activity (e.g., Gneezy & Rustichini, 2000a, 2000b; Gneezy et al., 2011). As Bowles (2016:191) puts it, “the crowding-out problem may arise from the relationship between the person imposing the incentive and its target, or from the meaning of the incentive.” While, like all cognitive processes, the mechanisms of incentives certainly involve interpretation of actions and events, the mechanisms that we posit are social-relational. Incentive schemes are not just sources of information about the task, the target’s individual asocial motives, or the incentivizer’s assessment of the target’s motives. Schemes are relationally-constitutive acts whose effects are due to their emotional, moral, and motivational impact on the relationships among the persons involved.

In sum, incongruent incentives backfire if people perceive them as violations of the existing social relationship. However, there is one important exception: when the use of the incongruent incentive is an invitation to shift to a new and mutually preferred mode of relating.

2.2 Deliberate use of incongruent incentives to shift the relational model

We assume that people’s use of incentives signals the mode of relating that they take for granted or prefer. Hence they can use incentives to coordinate shifts to different relational models.
In some cases, one or several parties to the coordination may prefer to coordinate according to a different relational model than the one they have been using. Incentivizing in a manner that is congruent with that aspirational model facilitates the shift. The incentivizer uses an incentive scheme that is incongruent with the existing relational model but congruent with the aspirational model, and thereby invites the shift. The incentivized person or persons can recognize, accept, and respond to the incentive with greater effort, thus demonstrating commitment to the new relationship.

Examples of incentives used in an apparent effort to shift a relationship to communal sharing include the provision of free food and beverages to be festively consumed by all members of an organization. This uses a participation scheme in which the commensal eating signals that “we are a ‘family’, we did this together, and we will go on to succeed together.” Such incentives appear particularly prominently in many contemporary technology companies and “co-working” spaces. (For an example, see Google’s statement of “How we care for Googlers”; or Segel et al., 2016, for details and trends on co-working spaces.) In experimental economics, the “gift exchange” paradigm is premised on paying participants a greater than expected salary, independent of effort or performance on the job and simply for participating (see the seminal field experiment by Gneezy and List, 2006, built on Fehr, Kirchsteiger, and Riedl, 1993). Again, the intent appears to be a shift to communal sharing. (Though full study protocols are often not available, we may assume that absent the “gift” the default and predominant relational model between experimenter and participant is market pricing or authority ranking). As Kreps (1997) argues, an employer’s “symbolic acts of gift giving … may engender [quasi]-kinship relations” (p. 363).

An example at the household level is when parents start paying their children’s caregiver a fixed salary instead of paying by the hour, in order to shift the relational model from market pricing to communal sharing. The caregiver is meant to feel “part of
the ‘family’.” Experimental evidence indicating that people use participation schemes to effectuate communal sharing relations comes from Clark (1984), in whose study participants were asked to complete a number circling task with a confederate. They were unobtrusively given the choice to use pens of the same color, thereby obscuring individual contributions and credit, or of a different color. She found that male participants who may have hoped for communal relationships – potentially dating an attractive female confederate – were more likely to choose pens with the same color, compared to men working with an unavailable female partner. This may indicate that individuals who aspire to a communal sharing relationship forego tracking their relative contributions, preferring instead to share jointly in the credit and the reward, as a team.

For an example of balancing incentives used to shift to equality matching, consider companies where managers’ offices are brought to the same floor as those of employees, to symbolize and effectuate a ‘flattened’ company structure and culture. If the offices and the furniture in them are balancing incentives, then everyone gets an office or desk of just the same size, with identical chairs and equipment. If offices are pre-set and differ in important ways, rotating assignments or random allocation mechanisms balance incentives in expectation. (In contrast, a participation incentive would consist of giving everyone the right to share in the use of a common large room workspace in which anyone may work anywhere.) In private interactions among romantic partners, one person’s insistence on starting to split the bill instead of accepting the other’s unobtrusively paying it all signals and promotes a shift from communal sharing (or authority ranking) to equality matching (see also Schwartz, 1967).

Hierarchy incentives are used to shift a relationship to authority ranking. Giving someone an award, such as an order of merit, thrusts the person into a status hierarchy. This has provoked strong resistance among artists, who regularly protest against the seeming imposition of rank by ‘outside’ award giving bodies (e.g., Kehlmann, 2008). Accepting an honor can be seen as conceding that the giver “[has]
some prestige to grant, that they enjoy legitimacy as an honor-conferring [entity]" (Goode, 1978:180). Similar tendencies can be observed within organizations, such as when vertically differentiated award ranks are created, or when an expiring award status compels winners to compete in the future so as not to lose their status (Gallus & Frey, 2016). In the voluntary sector, organizations may aim to reap the presumed benefits of greater control and therefore introduce hierarchy incentives: according staff rank-ordered titles or different size offices, as an attempt to shift certain relations among staff, or the organizational culture as a whole, towards authority ranking.

Proportional incentives are used to shift to market pricing, such as when a person insists on paying a former classmate in proportion to the time he spends repairing the person’s automobile. This can be particularly relevant in contexts where artifacts and architecture otherwise risk cuing a relational model that is not desired by the incentivizer; consider sex workers or psycho-therapists. In these cases, proportional incentive schemes such as payment in proportion to time spent with the client may help maintain and emphasize a market pricing relationship when the client may prefer a communal sharing relationship.

This example also illustrates that incentives can be used more generally for ‘steering’ relational models, which includes reinforcing and maintaining an existing relational model. Another example of such ‘steering and counter steering’ of relational models through incentive schemes comes from Wikipedia. The online volunteer community is often seen as a canonical example of the ‘peer production’ model. But given the growing number of contributors, some had to be given greater decision rights, and the role of “administrator” was created (Gallus & Bhatia, 2020). Yet, as is still highlighted in Wikipedia’s policy documentation, “Administrators were not intended to develop into a special subgroup. Rather, administrators should be a part of the community like other editors” (Wikipedia, 2020). In an effort to maintain the communal mode while introducing the new position, founder Jimmy Wales announced his possible recourse to a balancing
scheme: “I just wanted to say that becoming [an administrator] is *not a big deal*. I think perhaps I'll go through *semi-willy-nilly* [randomly] and make a bunch of people who have been around for a while [administrators]. I want to dispel the aura of "authority" around the position. It's merely a technical matter that the powers given to [administrators] are not given out to everyone” (Jimmy Wales in 2003, as cited in Wikipedia, 2020; emphasis added).

Incentive recipients, too, can use incentive schemes to steer relational models – both referring to their relation to the giver but also to modulate their relation to third parties. Thus, individuals refuse awards or return them in order to shape their relation to the giver (see Goode, 1978; Frey & Gallus, 2017; or Emerson’s “balancing operations” in power relations), or they accept an award ‘on behalf’ of a group or community, thus ‘deflecting the glory’ to reinforce communal sharing relations with that group.

3. Some Implications and Applications

3.1 Incentive choice and contract design at the organizational level

One implication of relational incentives theory is that it offers a new approach to the choice of incentives and to the design of contracts. Organizations design incentives and contracts to motivate existing members, as well as to attract suitable individuals to join the organization. Our theory provides new explanations for several puzzles in the literature, and it suggests new avenues for empirical work.

*Puzzle 1: Why are contracts often incomplete?*

One long-standing puzzle, particularly prominent in law and economics and in the incentives literature, has been the prevalence of “incomplete” and simple contracts (e.g., Macaulay, 1963; Rousseau & McLean Parks, 1993; Eggleston, Posner, & Zeckhauser, 2000). Why is it that "most workers face simple compensation schemes in which rewards are insensitive to performance, at least over short periods" (Prendergast & Topel, 1993)? Why is it that “a traditional piece-rate system is rarely used” (Lazear,
Why do organizations “frequently … reward people for membership (through pay tied to seniority, for example) rather than for performance” (Nadler & Lawler, 1989:11)? Proposed answers include issues of measurability and verifiability of outcomes, uncertain future requirements, contracting costs and bounded rationality (see Hart, 1995, and Tirole, 1999, for reviews). But, as others have noted (e.g., Macaulay, 1963), these explanations may need to be complemented by theories that account for social factors such as the presence of “reciprocal types” (Fehr & Gächter, 2000); intent to establish norms of cooperation (Sliwka, 2007; Kessler & Leider, 2012); or the setting of implicit or explicit expectations through reference points (Hart & Moore, 2008).

Our theory offers an additional reason for why contracts can be less complete and much simpler than standard theory would predict: “Incomplete” contracts that do not specify a proportional incentive scheme often serve to reinforce existing non-market-pricing modes of coordination, or invite a shift to non-market-pricing modes. Further, relational incentives theory also predicts the specific structure of the (simple, incomplete, non-proportional) incentive contracts we expect to be used instead: We predict that the alternative types depend on the incentivizer’s aspirational relational model. Thus, for example, paying employees “for membership” (Nadler & Lawler, 1989) can be a participation scheme that sets the basis for a communal sharing relationship in the organization if employees perceive that the scheme indexes and effectuates their being a part of the whole; the organization assures their needs with a long-term income rather than hourly or performance-contingent payments. (Ouchi (1981) describes a salient example of participation that was once pervasive in Japanese corporations – but not spelled out in any contract: mutual responsibilities of employees to their corporation and the corporation to its employees, corporate concerned involvement in employees’ personal lives, and the lifetime employment.) Where the length of membership is rewarded with discrete salary increases, authority ranking relationships are reinforced among the individuals at different salary levels.
Puzzle 2: When should we expect “crowding out” of motivation?

Previous work in psychology and economics has shown that the use of relatively complete contracts specifying performance-based pay can backfire. Such backfiring has largely been attributed to using the wrong means, and money in particular (see our discussion above). Our theory suggests that it might have been the proportional incentive schemes that backfired. In many experiments, money treatments also involve greater perceived proportionality, making it impossible to disentangle whether backfiring effects were driven by the monetary means or by the proportionality scheme (e.g., Gneezy & Rustichini, 2000a; Heyman & Ariely, 2004). Moreover, we emphasize that it is important to account for the relational environment, and specifically for the predominant relational model. Failure to do so may be one explanation for the mixed findings on “crowding-out” and other phenomena such as “gift exchange”. Non-profit and academic contexts typically rely on communal sharing or equality matching (Aggarwal, 2004; McGraw et al., 2012), where proportional incentives are relationship-incongruent. Indeed, the seminal crowding-out results show that proportional incentives backfired when used to motivate volunteer fundraising (Gneezy & Rustichini, 2000a), academic testing (Gneezy & Rustichini, 2000a), and child-care pick-up (Gneezy & Rustichini, 2000b; for a review see Gneezy et al., 2011). Conversely, in market-pricing contexts, where proportional incentives are relationship-congruent, proportional incentives typically motivate more effort than participation incentives (DellaVigna & Pope, 2018). This is in line with our thesis that incentives based on any given relational model can backfire in contexts in which a different relational model predominates.

As aptly summarized by Delfgaauw et al. (2019): “Given that many firms and employees value social relations at work … it is surprising how little evidence exists on how organizational policies affect social relations among employees” (p. 4, emphasis added). Like our theory, this work begins to shift the focus on relational outcomes. This adds to the important accumulating evidence on how social relations at work (equality matching and at times possibly communal sharing) shape the effects of financial incentives (e.g., Bandiera et al., 2005, 2009). Our theory is intended to inform this
growing literature, by proposing a framework of incentives and relational structures which makes clear and testable predictions about the effects of incentives on effort and relationships among employees and others, and by emphasizing the importance of studying relationships as outcomes as well as inputs.

### 3.2 Incentive design by individuals

Team work is becoming more and more prevalent, in science (Wuchty et al., 2007) and beyond. Within organizations in the private sector, as Lazear and Shaw (2007) noted, from 1987 to 1996 “[t]he percent of large firms with workers in self-managed work teams rose from 27 percent to 78 percent” (p. 92). In such self-managed teams, individuals decide on what incentives to use. Other examples of such decentralized incentivizing by individuals come from ‘peer production’ models such as Wikipedia (Benkler, 2006; Gallus, 2017) or commons management more broadly (Ostrom, 1990), contracting among entrepreneurs (Kagan et al., 2020) or among neighbors (Bubb et al., 2018), or contract choice within the family such as when marrying couples make financial decisions (Gladstone, Garbinsky & Mogilner, 2020). (These phenomena tend to be the subjects of separate streams of literature in innovation, entrepreneurship, technology management, economics, political science, consumer behavior, and marketing.) In these contexts, incentives are decided on either by a team leader who is part of the team (e.g., Rahmani, Roels & Karmarkar, 2018), or by equal team members (‘peers’).

Yet we know surprisingly little about the social psychology of such incentivizing decisions (e.g., Heath, 1999), let alone their effects. Relational incentives theory sheds light on incentivizing in such settings where team members choose incentives to motivate others. There are several puzzles that these settings have posed, and for which it can offer a new perspective.

**Puzzle 3: Why do managers compress performance ratings?**

One such puzzle is the prevalence of supervisors’ compression of performance ratings (Prendergast, 1999). As reviewed by Prendergast, the literature calls this “biased” behavior, implying that it is problematic. Our theory argues that compression of
performance ratings does not necessarily result from bias, but may rather result from supervisors’ aiming to implement equality matching by making ratings even. Alternatively, compression can result from supervisors’ aiming to implement communal sharing by not differentiating among team members.

**Puzzle 4: Why do entrepreneurs so often opt for even equity splits?**

Another puzzle related to individual incentive choices and which we shed further light on comes from the entrepreneurship literature (e.g., Wasserman, 2008; Kagan et al., 2020): Much attention has been put on the observation that founders frequently use balancing incentives (even splits) to allocate equity, despite the founders’ disparate added-value and opportunity costs. Previous research explains the prevalence of even splits as the result of widespread inequity aversion (Wasserman & Hellman, 2016). Our theory suggests alternative explanations that can be tested: (i) founders prefer even splits if they are friends or classmates guided by equality matching (in line with the results in Polcz, 2020, for music bands’ royalty contracts); (ii) when co-founders do not have an established relationship, they may use even splits if they aspire to form an equality matching relationship; and (iii) in contrast to warnings that even splits are usually mistakes (e.g., Wasserman & Hellman, 2016), relationship-congruent incentives may result in high motivation, satisfaction, and commitment. In short, our theory implies that founders may use even equity splits because these are congruent with the type of existing or aspirational relational model among them. (A similar argument can be made for decisions about credit allocation among scientists, such as alternating the authorship order as apparently done by Daniel Kahneman and Amos Tversky.)

In this case as in others, the ‘right’ incentive scheme cannot be specified independent of the relational model that people are using to coordinate. And again, it appears that incentives work when they evoke, strengthen, or shift and align relational motives and emotions.
3.3 New questions

**Question 1: How do individuals sort into activities, organizations, and occupations?**
Besides influencing existing relationships among employees and others, incentives play an important role in attracting people who are a good ‘fit’ for the organization (e.g., O'Reilly et al., 1991; Lazear, 2018). As discussed above, it has been shown that people vary in their predominant relational motives: Some people may seek to coordinate in hierarchies, others may tend to quantify proportional contributions, while other people typically see the world as composed of in-groups and outgroups, needing to belong to their focal in-group (e.g., Haslam & Fiske, 1999; Caralis & Haslam, 2004; Strasser, 2013). Thus, if homogeneity, or at least prevalence of a given proclivity, is recognized as favorable for the operations of the organization, regardless of the means the organization uses, we would expect the organization to use congruent incentive schemes to attract suitable candidates (e.g., participation schemes for a service organization that needs employees who affiliate or closely identify with service recipients and fellow members of the organization). For the understanding of individual self-selection into organizations and occupations, this adds a heretofore unstudied dimension: people’s relational proclivities and motives, such as need for affiliation, power motivation, and achievement motivation. It also reinforces a publication standard, the importance of presenting full study protocols, including recruitment materials. Such protocols can include cues to the predominant relational model, which may influence self-selection into the study and, thus, generalizability (see Caruso et al., 2017, for a similar argument about variance in methods and participant populations, or List's, 2020, “transparency checklist”).

**Question 2: Whose relationship should incentives be congruent with?**
When a teacher incentivizes her pupils to work together to complete a class project, should she use an incentive scheme that is congruent with her relationship with her pupils, or one that is congruent with the pupils’ relationships with each other? When a child wants her parents to plan a family vacation, should she incentivize them with a scheme that is congruent with her relationships with them, or her parents’ relationship
with each other? In these and many other cases an incentivizer aims to influence third-parties’ coordination among themselves. Typically, the incentivizer relates to the targets according to one relational model, while the targets coordinate with each other according to a different relational model. Hence an incentive scheme cannot be congruent with both of these relationships. What determines which type of incentive scheme is most effective?

**Question 3**: *When are separable incentives needed, and when is the relationship itself a sufficient incentive?*

When one wants someone to do something, often an incentive is needed. But sometimes no incentive is needed – and the other person would be confused or offended if an incentive was offered. When the relationship itself is sufficiently important for its own sake, people often do what the other(s) want(s) without even being asked, let alone offered an incentive. The relationship is its own reward, or is felt to be morally binding (see Weber, 1978, on obedience resulting from the legitimacy of the authority). We posit that there are exactly four types of relationships that have this potential to be incentives in themselves. Moreover, congruence in this limiting case consists of the participants’ perceiving that the type of relationship that they intend – and that motivates action to conduct and sustain the relationship – is the same as the type of relationship that the other(s) are engaged in and committed to.

In an inherently highly motivating relationship, a person will often do what the other wishes without any need for that wish to be expressed. Indeed, it is a salient sign of devotion to know what the other wishes without being told, and do it without being asked. When the battle situation suddenly changes, a soldier who is devoted to his commander might risk his life to acquire intelligence that the soldier knows his commander will want, even before the commander knows that he needs the intelligence. In doing what his duty demands, the soldier may risk his life without even any consideration of future reward, simply to do what a subordinate should, or to please his commander and protect his comrades. So the question is, when should an explicit
incentive be offered, and when should one show that one appreciates that the relationship alone is sufficient, and believes that the other is fully engaged and committed to it?

4. Incentives Sustain, Modulate, or Change Relationships

Much of social life consists of maintaining or modulating social relationships, or trying to get others to do something. Incentivizing is central to both processes. People’s use of a particular incentive scheme not only signals the kind of social relationship that they expect, but in the long run partly determines the kind of relationship that they will have. The manner in which parents and teachers incentivize children, and how employers incentivize workers, will shape their social relationships. Along with the schemes that policy makers select to incentivize persons, organizations, and nations, these choices of incentive schemes will shape our future social relationships and society as a whole.
References


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### Table 1. Alignment of the Schemes with the Relational Models, Scale Types, Relational Structures, and Motives

<table>
<thead>
<tr>
<th>Relational model</th>
<th>Participation</th>
<th>Hierarchy</th>
<th>Balancing</th>
<th>Proportionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement scale type</td>
<td>Categorical or nominal</td>
<td>Ordinal</td>
<td>Interval</td>
<td>Ratio</td>
</tr>
<tr>
<td>Relational structure</td>
<td>Equivalence relation</td>
<td>Linear ordering</td>
<td>Ordered Abelian group</td>
<td>Archimedean ordered field</td>
</tr>
<tr>
<td>Relational motive</td>
<td>Unity</td>
<td>Hierarchy</td>
<td>Equality</td>
<td>Proportionality</td>
</tr>
<tr>
<td>Within organizations</td>
<td>Fixed salary contracts with long-term employment and rare layoffs – paid simply for showing up at work. E.g., Hewlett-Packard’s practices conveying the message of “being part of a family” (Baron &amp; Kreps, 1999: 38). Japanese “Theory Z” business model where the firm takes care of its employees for life (Ouchi 1981)</td>
<td>Discretionary bonuses and promotions, competitive awards</td>
<td>Profit sharing schemes with even division</td>
<td>“Pay for performance” (e.g., piece rates)</td>
</tr>
<tr>
<td>Example 1: Co-founder equity divisions (e.g. the four “contract archetypes” emerging in Kagan et al.’s 2020 experiments)</td>
<td>Getting whatever one needs from the resources of a commune, kibbutz, or other group</td>
<td>Career incentives</td>
<td>Partnerships with even payouts (e.g., in many law firms)</td>
<td>Hourly wage</td>
</tr>
<tr>
<td>Example 2: Incentives for soldiers (e.g., Costa &amp; Kahn 2003)</td>
<td>Threshold vesting</td>
<td>Difference vesting</td>
<td>Equal-split contracts</td>
<td>Proportional division</td>
</tr>
<tr>
<td>Beyond organizations (e.g., parents-children)</td>
<td>‘Having the back’ of fellow soldiers in a platoon. Collective victory</td>
<td>Promotion</td>
<td>Random allocation. Taking one’s turn serving in the military; taking turns standing watch or guard duty</td>
<td>Pay (e.g., for mercenaries); “bounties”</td>
</tr>
<tr>
<td></td>
<td>Joint experiential incentives (e.g., barbecue for a day of joint work)</td>
<td>Giving awards and prizes for winning competitions: sports tournaments, first to complete their chores</td>
<td>Turn-taking, random draw, even resource splits</td>
<td>Screen minutes per time spent cleaning up</td>
</tr>
</tbody>
</table>

Table 2. Phenomena Corresponding to the Incentive Schemes
### Table 3. Research and Theory Relating to the Incentive Schemes

<table>
<thead>
<tr>
<th>Participation</th>
<th>Hierarchy</th>
<th>Balancing</th>
<th>Proportional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(A) Organizational Level (Economics, Management, Organizational Behavior)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Relational motives, often entailing the gift giving process and evidence of correspondence with the recipient.</strong></td>
<td><strong>Incentives in firms:</strong> Companies provide profit-sharing schemes, &quot;where the benefits of increased effort are shared with others.&quot; (p. 6)</td>
<td><strong>Incentives in human resources:</strong> Financial rewards based on &quot;fair performance contingent's which require performance that exceeds specified criteria.&quot; (p. 586)</td>
</tr>
<tr>
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Table 4. Literatures Elucidating the Schemes

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<thead>
<tr>
<th>Literature</th>
<th>Participation</th>
<th>Hierarchy</th>
<th>Balancing</th>
<th>Proportional</th>
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<tr>
<td>Loyalty (e.g., Simon 1991)</td>
<td>X</td>
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<td>Organizational citizenship (Organ 1990)</td>
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<td>Awards (e.g., Frey &amp; Gallus 2017), prestige (Goode 1978)</td>
<td>X</td>
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<tr>
<td>Gift giving, gift exchange (Schwartz 1967; Akerlof 1982)</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<td>Leadership (e.g., Hermalin 2012)</td>
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<td>Status, tournaments, rank (Veblen 1899, Frank 1985, Becker &amp; Huselid 1992)</td>
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<td>Social comparisons (Festinger 1954. Experiments: e.g., Goldstein et al. 2006)</td>
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<td>Principal-agent theory (e.g., Alchian &amp; Demsetz 1972), transaction cost economics (Williamson 1975)</td>
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<td>Team incentives, partnerships (e.g., Kandel &amp; Lazear 1992)</td>
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<td>Crowding-out (e.g., Greezy &amp; Rustichini 2000a,b)</td>
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