Governance of Perspectives in a Relational Partnership Society

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Abstract

*The concept of a Projective Partnership is introduced, a tool that is apt to analyze a broad spectrum of organizational forms having some fundamental behavioral traits in common. The usual characterization that distinguishes a for-profit enterprise from a non-profit enterprise, or from a state-owned enterprise, is based on their institutional and legal attributes that don’t clarify the reasons of their existence. The projective partnership approach identifies a wider range of values: utilitarian, social, and imperial or collective values. It is based on a structure of relational capacities that reveal perspectives of a partner in the partnership.*

*This new tool consists of two components: a normative component positioning roles and rules that are invariant for all organizations, and the positive description, specifying those roles and rules for the chosen target system. The normative component is a mathematical structure, a projective geometric of order two, therefore both restricts and supports the structure of positive components. The dual relationship between roles and workplaces, which are spanned by pairs of roles, generates strong analytical tools.*

*Widely different organizations, fitting in the partnership concept, can be compared. It also characterizes these organizations by the degree in which they focus on businesslike economic values and resources, on cooperative or emotional human values and resources, or on public mentality values and resources. The hybridity of these organizations makes it hard to govern them. However, this hybridity can be resolved by making a partner accountable in her appropriate behavioral workplace.*

*The partnership tool also allows for the expansion and evolution of the partnerships. The integration of specialized partnerships in a hierarchical societal partnership economy allows for the construction of an input-output table with public, social, and private sectors and values. Since perspectives and organizations are not restricted to the utilitarian domain with its objective of achieving maximal profits or utility, the objective of enhancing the partners’ relational capacities by the balancing of perspectives and resources within each partnership generates a ‘well-being growth spiral’ for each partnership, inclusive the society as a whole, which surpasses the outcomes of the standard approach.*

Keywords: Relational modeling; partnerships; projective geometry; hybrid and competent enterprises; decomposition of perspectives; identity of partners: Econ, Human, or Imperial values; cross-sector partnerships; Institutional and Mechanism Design; Coevolution; Social Enterprises. JEL codes: H75, L31, L51, I18, K12, L33.

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# Introduction

## Motivation: Perspectives on the Social Economy

What is the distinction between a social enterprise and a private firm when both have commercial as well as social aims? The usual characterization that distinguishes a for-profit-enterprise from a non-profit enterprise, or a state-owned enterprise, is based on institutional and legal attributes that don’t clarify the reason of their existence. The standard neoclassical economic modeling embeds the social and public enterprise in an environment that is almost exclusively based on monetary and utility generating incentives. This paper deviates from this neoclassical approach and relies on the relational approach that is built on relational capacities between agents in an organization. That includes the capacity of well-being, or of money-making, depending on the situation.

The innovative idea in this paper is to construct a modeling tool that is apt to analyze a broad spectrum of positive organizational forms that have fundamental behavioral traits in common. This tool, *the Projective Partnership*, consists of two components: a normative component that is invariant for all organizations, and a positive component that focuses the partnership on the chosen target system. The target system is a partnership in which crucial roles are identified, but are not necessarily connected and its rules may be incomplete.

The normative component is based on a projective geometry, in which all positions are connected and interdependent. It completes therefore the possible lacunae of the original target system and describes organizational positions and their interaction rules that are invariant for partnership organizations. This component both *restricts and supports* the positive component of the target system. Its domain is a wide variety of descriptive and transient organizational capacities in ternary relations or ‘workplaces’, called the Relational Capacity space. On this space a ‘projective partnership’ is defined that assigns a structure of positive descriptions to the underlying geometric structure of normative positions and rules of motion. Organizations are differentiated by the way in which they choose to specify these roles and rules, and to enhance the relational capacity carried by some role.

The value added of this dual relational approach is summarized as follows:

* Properties of the normative structure of an organization can be transposed to the descriptive structure, carried by the normative structure. In particular:
	+ The construction of value-embodying workplaces in which value-driven partners (with private, social, or imperial perspectives on values) and resource-driven partners (with private, social, or imperial perspectives on resources) interact to generate intermediate outputs.
	+ The construction of balancing workplaces in which partners with countervailing powers act to identify competence and to balance their behavior.
	+ The construction of the governance workplace in which the common values of the partnership are embodied in the institutional resources; enhancing the stabilizing and allocative role of institutions.
* The construction of a partnership society, using the common normative structure. In particular:
	+ Growth and diversity generated by propagation of partnership structures with parallel or free positive values.
	+ Stability and hierarchy in a societal partnership
	+ A societal input-output table of value generation by, respectively, the private, the social, and the imperial sector.
* The common goal of partners: enhancing their relational capacity.
	+ Common knowledge of normative behavior, differentiated by individual specifications.

The ***Partnership model*** allows for comparing widely different organizations that are all transformations of a partnership. It also characterizes these organizations by the degree in which they focus on businesslike economic values and resources, on cooperative or emotional human values and resources, or on imperial mentality public values and resources. The observation that any organization contains a composition or an amalgamation of these identities makes it hard to govern such a hybrid organization. This hybridity of the partners’ perspectives and identities, can be resolved by making a partner accountable in her appropriate behavioral domain. For that purpose the fiscal regimes related to profit and non-profit enterprises have performed satisfactorily for some time.

But partnerships evolve and are establishing institutions that don’t necessarily fit any more. That is equally true for the static models describing the performance of both profit- and non-profit enterprises. That asks for a different, dynamic approach. The dynamics in the approach introduced here is based on perspectives of participants. Perspectives perform as drivers for people’s behavior. Perspectives are values, which can be embodied in actions.

The partners in a partnership may be individuals, business, [schools](https://en.wikipedia.org/wiki/School), governments or combinations. Organizations may partner together to increase the likelihood of each achieving their mission and to amplify their reach.

But there is more. The Partnership-model allows also for the expansion and evolution of the partnerships. Specialized partnerships are constructed in which hybrid interactions are made accountable by means of public, social, and private mechanisms. Second, by constructing parallel partnerships, which are micro-partnerships endowed with perspectives parallel to the partner’s actual perspectives, hierarchical societal partnership. or according to cross-sector influence: the *cross-sector partnerships*. An input-output table of values and services for a societal economy is constructed.

Since perspectives and organizations are not restricted to the Economic domain with its objective of achieving maximal profits or utility, the objective of enhancing the partners’ relational capacities by the balancing of perspectives and resources within each partnership generates a ‘well-being growth spiral’ for each partnership, inclusive the society as a whole, which outperforms the outcomes of the standard approach.

## Organization of the Paper

In Section 2 the concept of a projective partnership is constructed, after introducing some positive partnership models that are incomplete in the description of relationships between the various roles in the model, which are required to be interdependent. Next, a formal mathematical model is introduced that is closed under a binary operation and thus indicates the lacunae in the positive description. Partners are identified and restricted by the specific roles they assume in the partnership. These roles are generically hybrid as they interact with various other roles. But by making a partner accountable in the appropriate workplace, she is becoming a competent partner with a specific relational capacity.

Several applications are presented in Section 3, whereas Section 4 concludes.

# Constructing a Projective Partnership

The modeling vehicle in the relational approach is a triple consisting of (i) the space ℛ of incoherent partnership relations in organizations, (ii) a normative structure of interdependent positions and relations: the Projective Geometry, and (iii) a mapping that gives the incoherent structure a normative backbone, and completes the incoherent partnership structure with perspectives and normative roles and rules, called the ***partnership perspective closure***. The modeling tool is said to be *focused* on some organization if the organization’s positive descriptions are mutually consistent and its rule-structure fits (is isomorphic to) the normative structure. Assuming that this also applies on human phenomena, it gives a fundament for mutual understanding. For reasons of clarity in exposition, a *partnership* is chosen as the default organization on which – for the time being – this tool is focused.

## The Relational Capacity Space: Perspectives and Workplaces

The Relational Capacity Space is a network of incoherent partnership relations in an organization, described by relational capacities in ternary relations that drive an organization. These ternary relations can be decomposed in relational capacities, the building stones of Partnership models. An individual decision maker, for example, can be represented by the triple {value, act, resources}, indicated by, and by the interacting components of this triple, amalgamating the individual’s values with her resources. This equivalence of describing a decision maker in terms of her actions, for example her demand or supply function, and describing her deeper in terms of a ternary relation between the three relational capacities that are components in this relation, is a building stone in the Relational Capacity Approach that is introduced in this paper.

The following modeling approaches to the social welfare function show the incompleteness of relevance and of ternary relations in some form for a wide variety of organizational theories.

### Ternary relations in the literature, Connecting Mind and Body

The relation between the welfare seeking members of a society and the institutional organization they adopt for realizing these desires belongs to the core of economic theory. Several approaches to this problem have been developed, to mention, the Walras’ General Equilibrium model of the market; Coase’s Nature of the Firm; the Bergson-Samuelson Social Welfare Function, Arrow’s Social Choice Function, and Sen’s Capability Approach, each giving an insight in the difficulties that have to be solved.

In the Bergson (1938)-Samuelson (1947) Social Welfare Function, a state of the economy may be considered as an economic policy that generates utility for its members, called a utility-profile. Different policies generate different utility-profiles. Given a utility-profile, one may wonder which utility-profiles are considered indifferent by the members. The policies involved may include compensation for specific members. Next, all feasible utility-profiles of the society are assembled in the so-called utility-possibility set. The *social welfare function* then assigns the best utility-profile, and implicitly the best economic policy, in this set. Since the preferences of its members are given, the focus in this approach is therefore directed at searching *the best policy* for resource allocation in the economy. Sen has coined this approach the *Comparative Approach* to social welfare.

Intrigued by the possibility of cycling outcomes in the democratic majority rule, Arrow (1963) wondered whether this property was valid for any social choice rule. That may be a voting mechanism in the political domain, a market mechanism in the economic domain, or any other mechanism, including a dictatorship. He asked, more generally, (p.2) “if it is formally possible to construct a procedure for passing from a set of known individual tastes to a pattern of decision-making, the procedure in question being required to satisfy certain natural conditions.” These are: the rule must work for every possible configuration of individual preferences of the alternative social states (unrestricted domain); if all members agree with some ranking, then this is a social ranking (Pareto principle); the individual’s ranking of any pair is independent of a third alternative (independence of irrelevant alternatives); and the social ordering is not equal to some individual’s ordering (non-dictatorship). Arrow showed in his famous impossibility theorem that such a procedure does not exist[[2]](#footnote-2). This approach is called by Sen the *Contractarian Approach* to social welfare.

In the second edition, Arrow (1963; 106) maintains his unfavorable assessment of the BS-Welfare Function: “where Bergson seeks to *locate social values* in welfare judgements by individuals, I prefer to locate them in the actions taken by society through its rules for making social decisions. … ; the welfare judgements formed by any single individual are unconnected with action and therefore sterile.” Instead, Arrow treats values as combinations of judgements and actions, of Mind and Body, connected indirectly by some rule.

The connection between values – both individual and social – and action is strengthened and elaborated upon by Sen (2009; 231), who introduces the constructive *Capability Approach*. I quote: “In contrast with the utility-based or resource-based lines of thinking, individual advantage is judged in the capability approach by a person’s capability to do things he or she has reason to value. … The focus here is on the freedom that a person actually has to do this or to be that – things that he or she may value doing or being.” Sen thus forges a direct link between a person’s values and his or her capability to act. It is the interaction between these two perspectives – the person’s value perspective and the person’s resource or capability perspective – that leads the person to an action. It follows that in the Capability Approach, each person’s behavior and eventually the social realization is controlled by an institutional frame.

In the consumer’s choice model the ternary relation is applied in three causal directions.

* Firstly, the *consumer choice* (act) is derived from a utility function (values) on the budget set (resources) by maximizing this function over the individual’s budget set, as determined by the market price : .
* Secondly, the consumer’s utility function (values) can be derived from the consumer’s choice (act) and the budget sets available to the consumer (resources), if this demand behavior can be rationalized by preferences (axiom of *revealed preferences*).
* Thirdly, the consumer’s budget sets (resources) can be derived from the prices (values) and demand function (acts):

These operations connecting Body and Mind, take place in the ternary relation called the Embodiment Workplace. The individual decision maker in an economy is considered to be such a workplace, an embodiment-relation in which the three components: values, resources, action, interact. In cooperative game theory agents are assigned with certain mental states, such as values, beliefs and desires, which lead to actions that may predict behavior. Inversely, when agents behave rationally, their mental states may be deduced (or constructed) from the observed actions: the theory of revealed preference. The mental states are then derived from the acts of agents, and from assumed properties of behavioral rules, such as rationality.

Interaction between agents is formalized in *Game theory*, initiated by van Neumann and Morgenstern (1944), which assumes that players are rational and strive at maximizing their utility. Game theory is a model to frame agents’ behavior as players in a game. In cooperative game theory, agents have “… a possibility of choosing with whom to establish parallel interests, ... A parallelism of interests makes a cooperation desirable, and therefore will probably lead to an agreement between the players involved” (von Neumann and Morgenstern, 1947, p.221). So in cooperative game theory players may communicate and form coalitions, whereas in non-cooperative game theory “each party acts independently, without collaboration or communication with any of the others” (Nash, 1951). However, the distinction made between cooperative and non-cooperative games is misleading, as it does not refer to whether players cooperate or not, but to the difference in the rules of the game. In cooperative theory players are free to negotiate and its enforcing mechanisms are costless, in non-cooperative theory the players are bound by its rules, and contracts are binding and may be self-enforcing (van Damme, 2014:3). This observation stresses the importance of the third component in the ternary relation: the resource component. It is the intermediator between two agents, which means that their embodying workplaces have the resource factor in common.

### Disconnected structures of roles and ternary relations

The problem of combining the two relevant, possibly incomparable value or vision components of the two partners into a common vision of the partnership has been introduced in section 2.1.1. The problem of incomparability between the value-components has been resolved by embedding the mindset in a relational structure that models the partnership.

However, the Mind has reasons that Reason does not know. What is it that drives the interaction between the value components of two partners in a descriptive partnership? It should be based on the attraction caused by the bipolarity and reciprocity of the relational capacities that are aimed at Giving and Receiving. The generation of the common value or welfare resulting from alternating and rotating the roles of giver and receiver, takes place in the Mindset workplace. This requires a specific capacity in the Resource Component. This rotation in the roles of partners may generate the maximal attainable welfare, the highest quality of the relational capacity bestowed on each of both mental-partners.

However, this value creation requires an embodying workplace to transform value and resources into output (see section 2.1.1) and to allow the exchange between the pair Giving/Receiving and Receiving/Giving.

##### Figure 2.1. The Architecture of a disconnected structure of roles and ternary relations carried by agents in a Transaction situation.

|  |  |
| --- | --- |
| *V*(*E*) | The mental values (utility, production capacities) of an agent (rotating as a user and as a producer) interacting with the resource system |
| *R*(*E*) | The institutional and resource capacities available for the mental values  |
| *B*(*E*) | The demand and supply actions of a partner (rotating as a user and as a producer) resulting from a consumption or production process |
| *W*(*E*) | The exchange price resulting from interaction in the price formation workplace  |
| *X*(*E*) | The outcome resulting from interaction between the exchange price and the demand and supply actions. |

##### Table 2.1. Description of the roles of agents in a possible transaction situation.

A ***Partner*** is an entity –a person, a resource or an institution – that plays a ***role*** in a relational context by virtue of its ***relational capacities***, with which the role is endowed. She therefore can engage with partners in other roles that have complementary relational capacities. This interaction affects a partner in a third role such that it can combine capacities of the original pair of partners with her own capacity. These three roles, as well as the three partners playing the roles, constitute a *ternary relation*.

*The characterization and description of the partners’ capacities is restricted by the condition that their interactions must be consistent.* Consider, for example, a transaction situation in which two persons want to exchange commodities, say meat and bread. There exist a pair of opposite roles, the demander and the supplier. The role of the demander of meat implies that she is looking for a partner with the role of a supplier of meat, but who is also a demander of bread. In reverse, the meat-demander has to be also a bread-supplier. So, the opposite roles of demander and supplier are rotated in content. This affects the third role in the transaction situation: the allocation mechanism that specifies the exchange value of these services based on balancing demand and supply. To make exchange values comparable and an exchange possible, the partner in the mediating role needs a common denominator to value meat and bread. That can be a specific numeraire as bread, or a common numeraire as money. That requirement determines the mechanism of the third role in the transaction model in order to allow the opposite roles to meet and match.

What type of organizational problems qualify for being part of the Relational Capacity Space? Which, now, are the *fundamental behavioral principles* that the default partnership has to satisfy in order to be representable by/isomorphic to a closed and symmetric mathematical structure? Firstly, the default partnership is to be composed of ternary relations, meaning that any two partners may interact and generate a dependent third partner (the relational capacity clause). Secondly, each positional-partner interacts directly or indirectly with all other positional-partners (the interdependence clause). Thirdly, the relational capacity specification of each positional-partner corresponds with the position of that partner in the normative relational structure (the meaning clause). Finally,

But what about the value components in these workplaces? How can values be specified? Dietrich and List (2012) introduce two approaches to this problem: Mentalism and Behaviorism. “Behaviorism is the view that preferences, beliefs, and other mental states in social-scientific theories are auxiliary constructs, re-describing people’s behavioral dispositions. Mentalism is the view that they capture real phenomena, no less existent than the unobservable entities and properties in the natural sciences.” The revealed preference in the consumer’s choice model fits in the behavioristic approach.

Cooperative game theory is founded on Behaviorism, requiring ternary relations that reveal preferences from behavior. The Mentalist Approach requires a more integrated normative structure introduced in the next section. Its working is described in subsection 2.3. In the Mentalist approach, mental states may behave independently from observed behavior. The Mind has options that go beyond the possibilities of the Body, and inversely, the Body can incorporate, stabilize, and terminate the frivolities of the Mind.

## The Choice of a Normative Partnership Structure: The tripolar projective geometry

In the previous section some important organizational models have been presented that are incomplete with regard to the relations between some role-components of the model. These incoherent partnership-models hamper a thorough analysis of the interdependencies and the governance of the components of the partnership under scrutiny. The issue now is to find the mathematical model that can serve to indicate all relations that are generated by the crucial, spanning components of the partnership model. This model will perform as the normative backbone to be imposed on the incoherent partnership structure, and results in a projective partnership structure that includes the normative component in the modeling vehicle. That allows for constructing the missing components and relations.

### The rules of motion in the symmetric normative component

This problem is alleviated by the observation that the partnership-model is based on three spanning components: the two partners and their common resources. Analyzing the ternary relations in the descriptive models of the previous section, a common feature is that the Relational Structure is a network of roles and ternary relations satisfying:

* Each relation contains three roles;
* Some pair of roles constitute a unique (interactive) relation;
* Some pair of relations intersect in a unique role.

A stronger set of conditions gives more explanatory power and leads to a normative structure of the partnership that allows the construction of missing elements. These are:

1. Each relation contains three roles;
2. Every two roles are engaged in a unique relation;
3. Every two relations intersect in a unique role.

This set of conditions characterizes a geometric concept, called the ***projective geometry*** *PG*(2,2), also called a Fano hypergraph (after Gino Fano, 1871-1952). It has exactly 7 points and 7 lines or ternary relations[[3]](#footnote-3), with 3 points on every line and 3 lines through every point: see Figure 2.2 on the right. Each circle is a ternary relation and a 1-dimensional projective geometry, .


#### Figure 2.2. The architecture of the tripolar projective geometry, (left), which is specified from the projective geometry PG(2,2), called the Fano hypergraph (right), by assigning three independent points (that is, not laying on a circle) as the spanning positions (100), (010), and (001).

This finite projective geometry concept can be represented in a vector-space that allows to identify the position of each role vis-à-vis the other roles in the structure. In such a space, each role is represented by a vector consisting of a unique combination of ones and zeros. Consider the space, with seven vectors. Each vector is unique in this space, and can represent a role that allows for a relational capacity being assigned to the digit ‘one’ in the vector, except for the vector consisting of zeros. Deleting this vector results in the space, in which the roles are identifiable.

On this space, for each pair of vectors (roles) a unique relation is constructed by means of the operation ⨁ called addition modulo 2, on a pair of vectors. It assigns a third vector by the rule, for each component. For example, (100) ⨁ (110) = (010). The space (, ⨁) is the smallest field with only two elements: 1 and 0, and called a *two-dimensional projective space,* .

The relation {(100), (110), (010)} is a unique ternary relation in. This triple is called a dependent set and is represented by a circle in Fig. 2.2. Points that are not on a circle are called independent[[4]](#footnote-4) and span the structure. The set of ternary relations derived from is called the ***dual set*** of, and indicated by**.** This property allows for assigning positions to the relations in the dual relational structure, corresponding uniquely with roles in the primal structure.

Its ***dual relational structure*** is . The seven lines (relations) in the primal structure are points in the dual structure. These lines assume positions in the Fano structure, as defined by the inverse of the hyperspace map H : Pn → Pn\*. So , which is a point in. It follows that the binary operation on the set of relations[[5]](#footnote-5) is derived from the binary operation ⨁ in the projective space, with appropriate specifications for each pair of relations.

### The rules of motion in the tripolar normative structure

In the projective geometry PG(2,2), represented in Figure 8.1, each circle is a ternary relation specified above as a 1-dimensional projective geometry. The operator ⨁ assigns to each pair of positions a third position in the structure. From the symmetry in PG(2,2), it follows that *any* three independent positions may serve as spanning positions, from which the other four positions can be derived. However, when these positions are given a specific meaning, then the symmetry is destroyed and all other (dependent) positions and relations receive meanings that are determined by the interaction operator. The meaning of this operator is then determined locally by the pair of relational capacities that actually interact.

The ***tripolar projective geometry*** is defined by giving the three positions (100, 010, and 001) in the projective geometry PG(2,2) the generic meaning of polar positions, that is, two positions (100 and 010) represent roles with an opposite capacity, say giving and receiving. The third position (001) represents a role that mediates between these two, say, the rotation of the roles, or the common resources for these roles. The other positions receive meanings that are derived from the meaning of the operation on each pair of positions in the structure.

In the representational approach, the similarity relation between the representational vehicle and the target system consists of two complementary, interactive parts: one symmetric operational isomorphy, and the other asymmetric homomorphism between the vehicle and the target systems. Suarez (2004: 767), cited by Poznic (2016: 333), calls the asymmetry the “essential directionality” of representation: “the model points to the target and not vice versa” (Suarez, 2010:98). This asymmetry extends to the transient target systems that have been developed in time from the same, generic vehicle model. In the model of evolutionary development of the target systems presented in this paper, the similarity relation between the generic vehicle and the emerging transient targets carries over. This asymmetry in the relational vehicle allows for the reverse process: the target system reveals the working of its generic symmetric structure. That same reverse in orientation has been observed in section 2.1.1 on embodying workplaces.

## The Partnership

### The Partnership’s Role Map and its dual Workplace Map

The modeling vehicle in the relational approach is a triple consisting of (i) a descriptive relational capacity space ℛ (ii) a normative structure of ternary relations, the Projective Geometry representing roles and rules within that structure, and (iii) a mapping giving a descriptive content to the normative roles and rules, where the projective partnership closure of a possibly incoherent partnership structure is the ***perspective-partnership*** ***in the role mode***. From here, it will be assumed that all partnership models meet the conditions of a perspective-partnership, and will the term ‘partnership’ be used.

The imposition of a normative backbone on an incoherent partnership structure gives it a coherent, consistent, and interdependent structure. When some relation between a pair of components in an incoherent structure is missing, the interaction between this pair of components creates the appropriate relation, generating a perspective-partnership.

##### Property 2.1. Consistency of the Partners’ relational capacities in a Partnership.

Consistency of the relational capacities in the partners’ roles requires that there exists a cycle of partners – resulting from operations on pairs of partners – in *E* that contains all partners.

Consistency implies that the role-descriptions in the role-mode in Table 2.2 and presented in Figure 2.3 are defined in relation to each other, and cannot be defined independently[[6]](#footnote-6). In the relational approach the generic, normative structure may be understood as a ‘motor’ inside the descriptive target system that drives the transient target systems.

##### Figure 2.2. The Partner-Architecture of a **transaction perspective-partnership** between Performers, Receivers, and Resources in the **Role-mode**, ∇(E); each partner is specified by her relational capacities (left, and Table 2.2), which fit her normative position in the tripolar projective geometry, (right).

|  |  |
| --- | --- |
| ***Roles*** | ***Role description of partners in a Transaction Partnership***  |
| *V*(*E*) | The ***values*** (mental capacities) of a partner enabling her to interact with partners carrying (i) the *system-resource* *R*, and/or (ii) the *opposite human-resource* *B*, and/or (iii) the *opposite* *value* *V*. |
| *R*(*E*) | The ***institutional resources*** of a partner enabling her to interact with partners carrying (i) with individual values, and (ii) with common values in the Mindset.  |
| *B*(*E*) | The ***actions*** (embodied capacities) of a partner enabling her to interact with partners carrying (i) the private system-resource, (ii) the social human-resource, and in (iii) the actions of the opposite partner, generating a common value. |
| *W*(*E*) | The ***common value*** of a partnership, resulting from interaction in (i) the Mindset, (ii) the Balance relation, and (iii) the Governance relation |
| *X*(*E*) | The ***outcome***, the Partnership’s relational capacity, resulting from interaction with (i) the Governance relation, and (ii) the human-resource relations. |

##### Table 2.3. Description of the Relational Capacities carried by Roles and Workplaces in the default Partnership model.

Next, the architecture of ‘workplaces’ or regimes in the Workplace Mode ∇\*(E) of a default Transaction partnership is presented in Figure 2.3.3. The positions and descriptions of the workplaces are derived from the partner-mode, ∇(E). The generic positions follow directly from the duality property (Section 2.1); the transient relational capacities carried by the generic relations have to be defined such that the workplace-structure is consistent.

A workplace represents the interaction between partners carrying specific relational capacities. A pair of these capacities generate a third capacity. Since that pair is not assigned, each workplace has three potential functions. Which function will be activated depends on the impact this function has on the other partners (relational capacities) in the partnership. The balancing of relational capacities occurs in the governance workplace.

##### Figure 2.4. The Architecture of the roles of workplaces in the **Workplace-mode,** ∇\*(E), of a default Transaction model E, each workplace specified by **transient** relational capacities (right) fitting its **generic** position in themodeling vehicle.

|  |  |  |
| --- | --- | --- |
| **Workplaces** | **The Workplace description in a Transaction Partnership *E*** | **Position in**  |
|  | The **Econ Workplace**:[[7]](#footnote-7) contains an embodying function , a value-revealing function , and a resource-revealing function. The resources are system-resources that require competitive behavioral rules based on system-rationality.  | 100010 |
|  | The **Human Workplace**: contains a complementary human-resource function , a value-revealing function , and an outcome function . The inputs of the outcome function are entrepreneurial values and complementary group-instrumental, human-valued resources; their interaction requires cooperative, bounded-rational behavioral rules.  | 101011 |
|   | The **Imperial or Mentality Workplace**: (the Mindset) contains individual value-revealing functions , and a common-value (vision or mission) function. The inputs of the common mind value are complementary, balancing values. Their interaction is based on empathic and imperial behavioral rules. | 001 |
|  | The **Transaction Workplace** contains individual and complementary human-resource functions, and a common-value function . The inputs of the value-forming behavior are balancing actions. Their interaction is based on bounded-rational behavioral rules. | 111 |
|   | The **Governance Workplace** contains a common value function, an outcome function, and an institutional resource function. It generates a Fit between the Common-value and the Institutional Resource (Allocation mechanism): between the partnership’s Vision or Mind and her Resources  | 110 |

##### Table 2.5. Role-description of the Workplaces in the Architecture of the Workplace-mode of a default transient Transaction model.

All these workplaces interact pairwise, according to Figure 2.3.3 that shows the partnership in the Workplace-mode, denoted by. It also shows the impact that a pair has on the third workplace.

The three functions in the Econ Workplace, mentioned in Table 2.3.4, are equivalently described as follows:

* *Embodiment operation*: interpreted as: an act/body (*B*) is an amalgamation rule, ⨁, or a function, *b*, of the values (*V*) and resources (*R*).
* *Value-Perspective operation*: interpreted as: a value (*V*) is an amalgamation rule, ⨁, or a function, *v*, of the acts/body (*B*) and resources (*R*).
* *Resource-Perspective operation*: interpreted as: an (institutional) resource (*R*) is an amalgamation rule, ⨁, or a function, *r*, of the acts/body (*B*) and values (*V*).

### The hybrid identities induced by the normative structure

The crucial property of a perspective partnership is the interdependence of roles and rules. They are not performing in isolation but interact in their performance. A change in the capacities of some partner or workplace in the partnership has an impact on the behavior of other partners in the partnership. The architecture of a partnership, however, allows for distinguishing direct impact from indirect impact. In each role, a partner has direct access to three workplaces or regimes of the partnership, and an indirect access to the other four workplaces.

A *firm*, for example, has a *vision as provider* (giver) on the needs of her clients, and a *vision as procurer* (taker) on the resources needed (medium) to make these perspectives match. In the standard model, these visions are encapsulated in functions with given parameters. A firm is then reduced to a profit-maximizing operator on a given production set with combinations of labor and resources as inputs; it produces an output of utility generating commodities determined by the market demand function. The perspectives of *receiving* and *mediating* are combined in and restricted to the given production possibility set and the market demand functions for labor and resources. The perspective of *giving* is represented by the market demand function for utility generating products. The interdependence of these orientations is represented by the price formation process, resulting in a market price at which the three (fixed) orientations are in equilibrium.

These observations mean that there is no single partner in the partnership who can be made responsible for governing or controlling the whole partnership: a partnership is fundamentally *teamwork*[[8]](#footnote-8). But this interdependence also affects the identity of some partner: her relational capacities towards other partners are amalgamated and are not delineated. A Virtual or Mind-partner can transform her hybrid identities (in open brackets) in an accountable identity by her engaging herself to some specification of a Workplace. This accountability property will allow for a distinction between a profit- and a nonprofit-enterprise, and simultaneously question whether this accountability criterion (profit or no profit) is still appropriate.

A partner in the architecture is identified not only by *her position* in the generic structure of the partnership, but also by *the relations* or workplaces in which she is engaged. Workplaces identify a partner, conforming to the dictum: “tell me who your friends are, and I tell you who you are”. In the Role descriptions of Table 2.2, the emphasis is put on the relational capacity of a partner that is related to the positions of other partners in a transaction partnership. From Figure 2.3.3 and Table 2.3 it is clear that three specific, but dependent workplaces co- determine the relational capacities of one unique partner. This determines that partner’s ***hybrid identity***. In Section 2.4, it will be made clear that each partner can transform this hybrid identity into some *competent identity* in some workplace by making a choice of workplace and *being accountable* in that workplace.

##### Property 2.6. The hybrid identities of the seven partners in a transaction partnership E

* The partner ***V*** carrying value-capacities, is an amalgamation of three relational capacities: *the Utilitarian identity*apt for an Econ Workplace, the *Human identity*, apt for the Social Workplace, and the *Collective identity*, apt for the Mentality Workplace.
* The partner ***W*** carrying common-value capacities, is an amalgamation of three relational capacities: the *Leadership identity*, that is apt for the Mentality or Imperial Workplace, the *Balancing identity* that is apt for the Transaction Workplace, and the *Regulator-identity* that is apt for the Governance Workplace.
* The partner ***B*** carrying embodied-capacities, is an amalgamation of three relational capacities: the *Utilitarian identity*, that is apt for an Econ Workplace, the *Human identity*, that is apt for the Social Workplace, and the *Balancing identity*, that is apt for the Transaction Workplace.
* The partner ***R*** carrying resource-capacities, is an amalgamation of three relational capacities: the *Utilitarian identity* that are apt for an Econ Workplace, and the *Regulator identity* that is apt for the Governance Workplace.
* The partner ***X*** carrying outcome-capacities, is an amalgamation of three relational capacities: the *Human identity* that are apt for the Social Workplaces, and the *Regulator-identity* that is apt for the Governance Workplace.

#### Proof: the proof of this property is trivial when the description of the identities are transformed in ternary relations of the tripolar projective geometry, defined in Section 2.2.

##### Property 2.7. Properties of a Perspective-Partnership

1. Any Partnership can equivalently be described in two modes: the *Role-mode* and the *Workplace-mode*.
2. The tripolar architecture of the partnership implies (i) two opposed roles, carrying *value-perspectives* and (ii) one role carrying perspectives on institutional and other common *resources*.
3. The partnership’s *Workplace-operations* aim at either (i) *embodying* a partner’s superior relational capacity, or (ii) *balancing* *system behavioral outcomes* in the common value, or (iii) *balancing human behavioral outcomes* in the outcome (welfare) of the partnership
4. The overall aim of the partnership is to *enhance the relational capacity* of some partner performing a role.

### From Hybrid to Competent Partners: Accountability

Being ***engaged*** ***in a workplace*** means that the partner is ***accountable*** for her actions within that workplace according to the rules of the workplace.

A *firm*, for example, has a *vision as provider* (giver) on the needs of her clients, and a *vision as procurer* (taker) on the resources needed (medium) to make these perspectives match. In the standard model, these visions are encapsulated in functions with given parameters. A firm is then reduced to a profit-maximizing operator on a given production set with combinations of labor and resources as inputs; it produces an output of utility generating commodities determined by the market demand function. The perspectives of *receiving* and *mediating* are combined in and restricted to the given production possibility set and the market demand functions for labor and resources. The perspective of *giving* is represented by the market demand function for utility generating products. The interdependence of these orientations is represented by the price formation process, resulting in a market price at which the three (fixed) orientations are in equilibrium.

Consider, for example, a partnership in which the Econ regime: is specified by, resp., a price vector on the commodity space, the partner’s supply function, and its production set, which is an upper-bounded set characterizing the partner’s production technology. Its supply function is determined by the Mind-partner under the rule: maximizing profit at a given price over the production set. The result, the production output, characterizes the partner in the context of the workplace. For the production set can be recovered according to a duality theorem in micro-economics. When the duality operator in this workplace *κ* can transmit all information between *Y* and *s*, then [*κ*] = 1, and the Mind-partner is fully accountable by her Econ-Mind. However, assuming that the sum of accountability-degrees for a Mind-Partner adds up to one, this Mind-partner is then fully identified by the Econ workplace, and is unable to observe or to engage in the Human or Mentality workplaces. If that is undesirable, then it is in the interest of society to construct workplaces that are common for all partnerships in the economy, called a *societal workplaces*, which balance accountability between the different identities. This is elaborated in Section 3.2 on Societal Partnerships.

Consider the Transaction Model *E*, as described in Table 2.2.5. The interdependence in the generic system causes *hybridity in the identity of a partner* in the partnership, allowing the partner to escape the responsibility of her acts. However, this hybrid character of the partner can be transformed into an actual identity of the partner in the partnership in a degree at which the partner makes herself accountable in a workplace. This type of ***identity specialization*** by a partner overcomes her hybridity. A workplace, after all, implies a ruling such as optimizing a partner’s action under boundary constraints in the resource. This makes the partner comparable under various conditions and thus accountable.

The following definition gives a measure for a partner’s accountability.

##### Definition 2.8 A Partner in a Relational Partnership is **accountable for her actions in a workplace or regime** in which she is engaged, if (i) there are clear rules of behavior and well-defined outcomes in the workplace, (ii) the partner is competent to behave conformingly, and (iii) the partner agrees to accept the rules of behavior that are set for that workplace.

When in the Health Care Sector, the care providers are considered partners of the health care insurers, representing the insured patients. Then the competition intensities in the health insurance and in the health care provider markets may be a measure for their accountability. Boone (2017) analyzes the interaction between the two. To illustrate, if competition intensity falls in the health care provider market (say, due to a merger of hospitals) should it increase or decrease in the health insurance market?

An accountable Partner identity is accomplished by the restrictions imposed by the Partner-mode correspondence, has been observed above. The partner in this correspondence that is responsible for this accomplishment is the Common Resource Partner. By embodying Virtual Partners using a Common Resource, the opposed partners become comparable in some sense. Their roles in the partnership become identifiable, well-defined and delineated, which allows for assigning them responsibilities in organizations.

In order to *govern* a partnership and to make the partnership *controllable*, each partner has to be made *accountable* *in some degree* for her behavior in some workplace. In this section a *partial analysis* of accountability in a partnership is made, for each of the seven partners in a partnership. This partial analysis is integrated in the next section.

# Applications of the Perspective-Partnership concept

## Rotation between Giving Partners and Receiving Partners; Specialization

The evolution of partnerships can best be described by following the evolution of their perspectives on rotation. Let a *local transaction-partnership* be identified by *a pair of persons* with complementary relational capacities that evolve in time, depending on their perspectives on her own and her partner’s capacities and on their perspectives on the sophistication of the appropriate *allocation mechanism*, conform Definition 2.2.1. Their perspectives cover the rotation of tasks, of jobs, and of their products. See Section 2.4.1.

1. *Personal’s Task-rotation*: The partnership’s perspectives on *giving and receiving* are represented by the *social identities* of the mind-partners, activated and engaged in the *Human-workplaces*, which generate actions or tasks. These actions or tasks require a balancing act in the Transaction-workplace (the Arena) at conditions that are agreed upon in the Governance-workplace, having an impact on the mind-partners. (The Left- and Right rotations represent giving and receiving, which interaction generates value.)
2. *Job-rotation:* People become more efficient and *specialize* into a certain task, which becomes a job. The partnership’s perspectives on *giving and receiving* are again represented by the *social identities* of the mind-partners, activated and engaged in the *Human-workplaces*, which now generate *jobs* or professions (the Body-partners; see Table 2.3.2)[[9]](#footnote-9). The wide-spread acceptance – some 30,000 years ago – of these perspectives on agricultural jobs, has been coined: the agricultural revolution[[10]](#footnote-10).
3. *Commodity-rotation* loosens the tie between persons and products one step further: partners become the owners of products. The partnership’s perspectives on *giving and receiving* are now represented by the *utilitarian identities* of the mind-partners, activated and engaged in the *Econ-workplaces*, which now generate products or *commodities* (the Body-partners; see Table 2.3.2). These actions or tasks require a balancing act in the Transaction-workplace at conditions that are agreed upon in the Governance-workplace, having an impact on the mind-partners. It are the products that are the desirable characteristics, and the owners are just the carriers of those commodity bundles. A more elaborate institutional setting is then required, where each partner is considered to supply and demand some commodity or service[[11]](#footnote-11). This requires that the common resource includes a belief system regarding owners, such as trade-system, and an institution such as money in which there is a common exchange value that facilitates exchange and enhances the partners’ relational capacities.

This evolution shows an increasing separation in the original partner of the person from its product; in terms of Table 2.3.2: of the Mind from its Body, which trend of Economizing and Commoditizing is also visible in the identity of the mental partners (see section 2.4.1). It also causes a change from human identities to utilitarian identities in the mental-partners. The ‘more elaborate institutional setting’ required from this development implies the existence of a partnership that rules this setting. There exists therefore a hierarchy of transaction-partnerships in society.

A higher quality level of the reciprocal mental Relational Capacities requires an increased capacity in the Resource Component. This institutionalizing of the resource component coevolves with the increase of quality seen in the Mindset. An example is the specialization of hunters and farmers in a primitive society. Apartnership evolves when the Giving/Receiving relation has been mentally conceived, and put into practice. The rotation cycle is then very short: it contains two switches. The length of the interaction cycle, defined as the number of switches required to arrive at the starting point, indicates the degree of *specialization* in the Giving/Receiving relation. The Resource Component evolves simultaneously: from introducing money, human, tribal rights, to imperial, communal values. The aim of the partnership remains invariant: enhancing the relational capacities of partners within workplaces, and consequently, the welfare of partners.

## Societal Partnerships: Evolution and Aggregation; Micro-partners and Clone Formation

A *Societal Partnership* is a Perspective Partnership is an aggregate of micro-partnerships that perform in a role of the societal partnership. The***mindset*** *i*n a societal partnership describes the reciprocal cultural values of the members of a society (partners of partnership) that are to be embodied or institutionalized. According to Greif and Tabellini (JCompEc, 2016), the mindset of a societal partnership for the Chinese clan-based society is characterized by the ‘mutual moral obligations & personal interaction’. The Mindset of a Western city-based society is characterized by ‘generalized moral obligations & impersonal enforcement procedures’. These values are made accountable through appropriate institutional rules. If the mindset of a societal partnership changes in time, then coevolution between the mindset and the real transaction domain may occur, if the institutional rule changes such that it generates behavior in the transaction domain that is consistent with the mindset. Examples are given below for matching economies.

The transformation of some economy from a simple task-rotation between the ‘human-workplaces’ to an economy with specialized commodity-rotation between ‘econ-workplaces’, requires an innovation in the relational capacity of all the three spanning partners in the respective economies. This innovation in a partner’s relational capacity is carried further by the assumption that a mental partner is able to produce clonesormicro-partners of her in her embodying *workplace*.

##### Modeling assumption

If the ‘resource-partner’ of a partnership allows for repetitive interactions in the ‘human-workplaces’ of an economy, then this repetition of the ‘human workplace’ interaction aggregates over time in a newly-instituted ‘econ-workplace’ interaction.

Frequent repetition of a hunting experience, for example, may transform a person who hunts only incidentally in the context of a small – micro – partnership, into a professional hunter in a broader – macro –partnership. Or, for another example, when the human workplace transforms into an econ workplace with multiple partners having utilitarian identities, all persons engaged in this workplace have either to adapt their identity to the utilitarian identity and to behave rule-rational, or they feel alienated and are getting lost in the new environment. This may specify Aoki’s ‘endogenous-rules-of-the-game’ generated by interaction of agents in a relevant workplace (Aoki, 2000).

*Micro partnerships* emerge if the newly instituted interactions have obtained the structure of a partnership within the *Macro-partnership* from which they have emerged, and which has adapted to these micro partnerships.

Those micro partnerships are *Clones* if its behavior in the macro-partnership is just a contraction of the original macro partner’s behavior[[12]](#footnote-12). This clone-formation by a workplace expands her relational capacity in two directions: (i) the clones add *mass* to the workplace’s competent/body partner, and (ii) the clones are endowed with a *resource-infrastructure* that allows for value-diversity among the mental partners of the clones. Those ‘freed’ clones become the micro partners of a newly instituted macro partnership.

When the micro-partners are endowed with a resource-capacity that can mediate with other micro-partners that have complementary or opposite values, then they can form together a *cooperative partnership*. This opens the road to developing a common cooperative perspective in the Mind-workplace of the new partnership that supports actual cooperation in the partnership. This evolutionary process shows the ability of a partnership to create a limitless variety of relational capacities, if only the opposite partners possess rich enough values to support this process.

A partnership cannot only *grow* in relational capacities, but can also *decline* and *terminate* those capacities. An individual agent can as well switch between various partner-identities. The Consistency Condition 2.1 requires that for every identity of a partner, there exists some level in the combination of the three partner-endowments that is basic in the sense that lowering or diminishing that level means the end of that specific identity. A medical doctor, for example, as partner in a doctor-patient partnership, my loose her license after some time. That license belongs to the partnership’s resource-partner, which signals the doctor’s mind-technology to her patients’ minds. When losing a license, the resource-partner reveals a too poor technology in the mind of the doctor as partner in the doctor-patient partnership.

For an existing organization, aggregation and disaggregation play different roles, depending on the purpose of the organizational design. When the interest is focused on *the evolution* or *orientation of an organization or partnership*, then bottom-up *aggregation* of micro-partnerships into a macro-partnership becomes relevant: from micro-values to macro-values.

* + Aggregation of *separable, parallel-valued* micro-partners to a macro-partner in a partnership focuses on *creating mass* of a partner’s outcome by increasing the number of homogeneous micro-partners.
	+ Aggregation of *interactive, free-valued* micro-partners to a macro-partner focuses on *creating complexity* (*richness*) of a partnerships’ value, with higher level values such as solidarity and cooperation.

When the interest is focused on designing the *architecture of an organization*the*Disaggregation* of an organization or a partnership – from macro to micro – is relevant. A more precise description of these terms falls outside the scope of this paper.

## Stabilizing Matching Economies

### Matching Rules for a Bipolar Service; Matching Economies

Consider a Societal Partnership, which is a Perspective Partnership in which the opposite partners contain for each mental partner a set of micro-partnerships that represents the reasons for which the agents in society are seeking a match.

This partnership is shown to be an equivalent description of the *Bilateral Matching Economy*, where *N* is the set of agents, is a bilateral activity network structure in *N×N*, and *u* is a hedonic utility profile on. This *bipolar service* is assumed to be specified uniformly for all agents, but its effect on interacting agents may differ, just as in case of a hedonic utility function applied to pairs of agents. They specify the two sides of one medal[[13]](#footnote-13): what to give, and what to receive in return. Now let the mindset *ψ* of this partnership consist of all *N* *rotational capacities,* indicated by the set, where each right-turning or giving capacity can interact with a left-turning or receiving capacity. The (directed) interaction between two opposite capacities generates wealth: .

#### A Bilateral Matching Economy

Assume that the rotational capacities are separable, so there are no increasing returns in capacity when these are combined. Then the mindset of the partnership is described by: . The relational capacities can interact with many counterparts and stability is not to be expected.

Now let the Common Resource, *R*, in which the relational capacity can embody, be a bipartition of the set *N,* a set of two roles*.* The relational capacities are engaged in two workplaces, generating competent or body partners: Each pair chooses the best available option. This process continues until in the balancing workplace. The each relational capacity has found her role and has neither an opportunity, nor an incentive to change. Gilles, Lazarova and Ruys have given a formal proof for a matching economy:

##### Theorem (Gilles e.a., 2015)

*Given a bilateral matching economy in which a finite set of agents is endowed with a hedonic utility profile on the set of matches. If there is an institutional rule implying two socio-economic roles such that any match is feasible if, and only if, each pair of agents is partitioning over both roles, then this rule is bilaterally stable[[14]](#footnote-14).*

#### A Multilateral Matching Economy

This bilateral societal partnership coincides with a matching economy. Next, assume that the rotational capacities may coalesce, so there are increasing returns in capacity when these are combined. Then the mindset of the partnership is described by: . Each relational capacity can interact with many counterparts, composed or not. Since exit and entrance of a relational capacity are allowed, stability of an outcome cannot be expected. These groups belong to the mindset of the partnership and are therefore volatile perspectives. Examples of these groups are: a potential club or firm, receiving contributions in kind, and giving a specific service in kind to its members. Since it is essential that the tie between giving and receiving is not broken, these examples don’t apply on clubs or firms in general. Modern firms have separated this reciprocal giving and receiving in kind into giving and receiving in terms of money, by using the innovative intermediate institution of a market. That separation creates both global opportunities, but it is also the cause of crises, when the monetary values don’t represent the underlying real values any more.

The workplaces in which the relational capacities are embodying themselves are offering membership of a competent (not volatile any more) relational capacity group, , where is a partition of the set of agents *N*. The agents choose the best available group in this set. The partition that balances the groups, that is, making the outcome stable for the partnership.

This *transaction partnership* has and *R* is a set of membership groups. It is an equivalent description of the *Multilateral Matching Economy*, where *N* is the set of agents, is a multilateral activity network structure in *N×N*, defined by substructures and *u* is a hedonic utility profile on. In Gilles, e.a. (2015) several classes of utility profiles are distinguished, each requiring specific conditions on the network structure – additional to the partition condition – that are necessary and sometimes sufficient for universal multilateral stability.

One particular institutional arrangement for a matching economy transaction partnership is especially relevant for the societal partnerships in Section 3.5 of this paper.

##### Definition 3.1. A Strict Social Hierarchy

A *strict social hierarchy* is an institutional rule *R* in a Multilayered Social Economy that generates a partitioning of rules incorporating the following network structure rules: (i) Let for some *k* ≥2, then *i* has a feasible relation with exactly one agent it can have any number of feasible relations with agents in and it has no other relationships. (ii) If , then *i* can have any number of feasible relations with agents in and has no other relationships.
These classes in *R* can be interpreted as social classes, where is the highest class and the lowest, in a Multilayered Societal Economy. Every agent has exactly one superior and any number of subordinates in the next class. This network structure is acyclic. It follows that the institution of a strict social hierarchy is stable if the utility profile exhibits size-based externalities, allowing for cooperation in multilateral interaction (see Gilles ea., 2015, Theorem 5.3).

In Section 3.5, the rules are substituted for partnerships, with a focus on the resource partner containing rules. The agent (partnership) i is specified by a bipolar service for any class. It receives a value provided by the cooperative values in the higher class (which is an output for that higher class) and it procures or gives, in mutual cooperation, a value as output, which is an input for the cooperative values in that higher class. The partition condition balances the groups, that is, making the outcome stable in the partnership.

## Institutional Design; Stability

### Mechanism design

Mechanism Design aims at constructing institutional constraints on social behavior in an economy through which decision makers in society act and make transactions that lead to the common value which the society has in mind.

The formation of institutional constraints takes place in the Governance Workplace, where the institutional resources *R* result from the interaction between the actual outcome *X* and the aspired Common Value *W*, see Table 2.3. These institutional rules *R* on social behavior constrain the mindset *ψ(E*), which forms the social behavioral workplace such that the resulting transactions support the aspired Common Value of the partnership. The balancing in the social behavior workplace is therefore formed from interaction between the mindset workplace and the governance workplace, as is expressed in Equation 3.1.

(3.1) .

For some models of a societal economy, the structure of quantitative transactions is dual to the structure in terms of values in the Mindset. The duality operator is then the institutional component, R, of the governance workshop, from which follows[[15]](#footnote-15) that, or in terms of a function: . An example of mechanism design is the market mechanism for an economy. This performs also as a duality operator between the social behavior workplace and the mindset of the economy. If the mindset is becoming more complex, the mechanism has to be redesigned. Another example is the referendum mechanism for a pure public goods economy, see Ruys (1975). This mechanism performs as duality mechanism transforming a society-wide utility profile of public services into a single vector of public services demanded.

##### Example 3.2: Mechanism Design; Hurwicz and Reiter

The concept of Mechanism Design has been developed in the 1970s by Leonid Hurwicz and Stanley Reiter (2006: 14, 266) for processing information in a social economy. The model is not a perspective partnership, however. The problem of mechanism design is: find a mechanism[[16]](#footnote-16) that assigns an equilibrium message generating the desired outcome. A desired outcome cannot be generated without adequate signals or messages given to the agents in society. The equilibrium message correspondence *μ* represents the behavior of the agents. Hurwicz and Reiter focus on allocation mechanisms based on information signals that may converge to an equilibrium message of a static model. When the *MD*-problem is approached as a Partnership, the virtual partners in the Mindset of the architecture are endowed with an environment and a goal function: Θ and *F* in *ψ*(*MD*); each virtual partner can translate her environment in signals in the message space: in (*MD*), by means of the Medium *M*(*MD*). That leads to an equilibrium message in (*MD*), resulting in an outcome: in *X*(*MD*) in the institutional regime γ(*MD*).

The dynamics in this model is restricted to the movements of the message path, such as the famous tatonnement process of market prices. Alternatively, the behavior of the agents may be chosen by them strategically in a game. A game-form then implements the goal function. When this *MD*-model is to be adapted or extended further, the architecture designed above may be leading in the design. The competent micro-partners are transformations of the virtual micro-partners by means of the Medium partner in the partnership. This medium partner transforms networks of virtual partners into coalitions of relational capacities with legal or other powers to be specified, by which they are able to cooperate within the coalition, or to compete between coalitions.

## An Input-Output structure for a Hierarchically Layered Societal Partnership

The aggregated industrial organization of a social economy is conveniently represented by an input-output table between the sectors in the economy. The standard input-output table is constructed for a market economy, where all sectors provide marketable goods and services and are ruled by the same mechanism. In the relational capacity approach, three sectors are distinguished, each sector providing (giving) characteristic services, receiving characteristic services from the other two sectors, and ruled by appropriate allocation mechanisms. Furthermore, sectors can be ordered in levels, according to the extent of the service rendered: public, communal, or private. Each sector has its own characteristic output, but receives a ‘*layered input’*, meaning that an input is composed from the various sectors. Reversely, the output is assumed to be homogenous, but it is distributed over the three sectors and indicated as a ‘*layered output’.* For this social economy, analysis by means of the perspective partnership concept is helpful in determining the intricate relations in the economy.

Consider a society *E* that is organized in three sectors: a collective sector, a social sector and an economic sector. Each sector forms a partnership between the giving and receiving within the sector, or between two sectors. This is ‘cross-sector analysis’ has drawn attention recently: see Van Tulder (2016).

Consider a Hierarchically Layered Societal Partnership, , which is spanned by a vector of competent inputs, a vector of competent outputs, and a vector of institutional rules, . The term ‘competent’ means that the inputs and outputs are embodied values, embodied by the specific institutional rules contained in the vector of common resources. The term ‘layered’ means that each vector is an amalgamation of the three identities introduced in Section 2.4, a *collective* sector, a *social* sector, and an *economic* sector. Since these sectors are each accountable for their performance, they are not hybrid but competent.

Each of the nine possible input-output pairs can span a partnership with an appropriate resource mechanism. These mechanisms may be approximated and combined. This is the case when human services are treated as econ services in a market: the case of *commoditization* *of services*. That occurs in the blue fields of Table 3.2, in which the econ inputs in the row of *layered outputs* are rightly compared, and added to obtain the cost of the econ input for all sectors together. This row-sum is equal to the gross domestic product, *GDP* at market prices. The column of *layered inputs* of the econ output may not be added, strictly speaking, but its sum is equal again to *GDP* at market prices, approximating the cost of the layered inputs for the output of the econ sector by commoditizing these services.

It follows from this table that *GDP* is only a proxy for national wealth: the row-sums of imperial input and human input are only partly taken into consideration in the calculations. That remark also applies to the column-sums of imperial output and human output.

Since the *layered output* is hierarchically ordered, the collective or imperial output (output of the collective sector) has an impact on the output of the (lower) social and economic sectors, whereas the social sector has an impact on the (lower) economic sector. One may think of a great collective enterprise, as the flight to the moon, or winning the World cup, which have a great impact on the lower level sectors.

As for the *layered services for sector-input*, the collective or imperial input may drain resources away from more productive opportunities, causing the econ sector to be higher evaluated than the imperial sector, as far as inputs concerns. The input for the econ sector has an impact / precedence on the input from the social sector or collective sector; the input from the social sector het a precedence on the collective sector.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **Sector Output:** **Sector Input:** | **Imperial Output**  | **Social Output** (group-loyalty, network services and institutions) | **Econ Output** (refined and separable empowerment) | *Layered Societal Capital Produced****:*** |
| **Imperial Input** (leadership, culture, empowerment) | societal identity, vision, mentality, defense, safety, environment | empowering group identity, actions, human services, SGI, sector policy | empowering market organization, outsourcing, SOEs, SGEIs, eco policy | Row ‘sum’ = layered output from imperial input  |
| **Human/Social Input** (group-empowerment)  | Imperial/collective welfare (national health) from Human input actions  | Human welfare from human input in social enterprises  | Human actions enriching Corporations | Row ‘sum’ = layered output from human input |
| **Econ Input** : production by private enterprises | Imperial/collective welfare (mentality) from Econ actions  | Human welfare from Econ input in social enterprises  | Econ welfare from private enterprises | Row sum = GDP = econ input at market prices generating layered output  |
| *: Layered Societal Capital used (received)* | Column ‘sum’ = Imperial capital (mentality) generated by layered input | Column ‘sum’ = Social Capital Revenue/ output generated by layered inputs | Column sum = GDP = Econ Output at market prices generated by layered input  |  |

##### Table 3.1. Input-Output Table of a three-layered Sectoral Societal Partnership

When focusing on designing the architecture of an organization the disaggregation of an organization or a partnership – from macro to micro – is relevant. What kind of responsibilities have to be assigned from macro-units and values to micro-units at a lower level? The simplifying underlying assumptions for this analysis are:

##### Assumption 3.1.2. On a three-level Relational Societal Partnership.

* Each partnership in the societal partnership is based on *bipolar* values, specifying the notions of giving and receiving by the partners.
* Their spanning mental partners generate a rotation or a *circular flow of giving and receiving*, which transcends an individual partnership.
* The identity of a *Minds-Partner* in each partnership is determined by three hierarchical workplaces or specializations (see also Property 2.3.1):
Level 1. The Imperial Workplace (*ψ*), focusing on visionary and moral values, and apt for mass media and political resource appropriation mechanisms.
Level 2. The Social Workplace (*β*), focusing on human and cooperative values, and apt for network concession mechanisms.
Level 3. The Econ Workplace (*κ)*, focusing on separable and competitive values, and objective, systemic resource-allocation mechanisms (including the market mechanism).
* In the *workplace of Giving Macro-partner*, the values of a lower level specialization (Econ) control and affect – bottom up – the values of a higher level specialization (Human, Imperial): see Table 3.2.
* In the workplace of the *Receiving Macro-partner*, the values of a higher level specialization (Imperial) control and affect – top down – the values of a lower level identity (Human, Econ). This generates a ‘well-being growth spiral’.

Finally, the balancing values in the ‘*mindset workplaces*, ψ’ of the nine sector-partnerships can be inferred from the balancing ‘*transaction workplaces*, α’ of the nine sector-partnerships (see Section 2.3). For a more precise description of these components the consistency check between components has to be performed. That analysis goes outside the scope of this paper. The tentative description of the input-value ‒ output-value table is given in Table 3.2. The balancing occurs in the transaction workplace, which requires an appropriate mechanism, such as the market for Econ values, or a voting mechanism for collective values. The development and construction of these and other balancing mechanisms seems to be a task of the specialized mechanism authorities.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sector Output Values:** **Sector Input Values:**  | **Imperial Output-Values and Perspectives**  | **Human Output-Values and Perspectives** | **Econ Output-Values and Perspectives** |
| **Imperial Input-Perspectives** | ***Balanced Collective/imperial values*** | *Human Output-Values adapted by*  *Imperial**values*  | *Econ**Output****-****Values adapted by Imperial**values, SGEI*  |
| **Human Input-Values and Perspectives** | *Human Input-values enriching Imperial Output-Value*,  | ***Balanced Communal Values,***  | *Econ**Output****-****Values adapted by Human values*  |
| **Econ Input-Values and Perspectives** | *Econ Input-values enriching Human & Imperial Value* | *Econ values enriching Social Values*  | ***Balanced Econ Values***  |

##### Table 3.2. The input-value‒output-value table of sectoral partnerships with their common values, in the **Mindsets** ψ of a three-level Sectoral Societal Partnership.

 When those values can be derived from empirical data for the input-output Table 3.1, then those values can be used to orient decision makers in the sectoral economy, just as the market prices orient the participants in the market.

## Cross-sector Partnerships

The partnerships within a sector, on the diagonal of the input-output table, are certainly not the most frequent partnerships: they are rather exceptions in the societal organization. The interplay between partnerships of different levels are customary: see Figure 2.1.

Top (CEO)

**Human** **Performers** of care services

**Human Needy** of care services

Management

**Econ Supply** of care services **by a Provider**

**Econ Demand** of care service**s**

**Transactions**

**Treatment Interactions**

Principal-Agent relations

##### Figure 2.1. Architecture of a Social Enterprise in the Care Sector with a Human Interaction Workplace and an Econ Transaction Workplace

Another example of the interplay and competition between enterprises of different level is given by Douma e.a. (2017: 179). They describe the choice of farmers between a cooperative and a commercial dairy firm. Dairy-farmers in nineteenth century the Netherlands were making cheese and butter from fresh milk at the farm. In 1878 was the centrifuge for separating cream from milk invented. An individual farmer could not afford such an investment, so economics of scale had to be found, leading to a dairy factory. One solution was the founding of a farmers cooperative, sharing the investment costs and maximizing the price they received for milk. Another solution was the transformation of some farmer to an entrepreneurial dairy firm, maximizing profits. Twenty years later, Friesland had 46 dairy factories run by entrepreneurs and 66 run by farmers’ cooperatives. Some firms went broke, and the cooperatives expanded in the next century, which made cooperatives the dominant organizational form in Friesland around 1925. In Holland, however, just the reverse process occurred: the dairy firms got the lead. Why?

Apart from a possible difference in the farmers’ mentality, there is also a difference in risk caused by the distances between farmers, the dairy firms, and the population. For a distributor of fresh milk needs a daily supply of fresh milk, preferably on short distance. That makes her investment in the distribution channels transaction-specific, which favors the cooperative, given her relation with the farmers. When a dairy firm concentrates the production to butter and cheese, it is less dependent on fresh milk and on distance. The perspectives of farmers as suppliers of milk and dairy products are weighted against the perspectives of consumers, and the perspectives on resource possibilities. The in alternative partnership models: cooperative and commercial, have more or less balanced in the 20th century. Today, they have been integrated in an international dairy giant: FrieslandCampina, showing that both cooperative and commercial partnerships can effectively be organized both between sectors and within sectors.

# Conclusion: Governing Perspectives

The central idea that is conceptualized in this paper is the insight that all partnerships have a common backbone on which their specific attributes are built and evolve. That generic structure is a tripolar projective geometry, carrying three spanning poles that drive the organism: the giving component or partner, the receiving component, and the (institutional) resource component. This common structure is recognizable for all organisms that need partnerships to survive and evolve: partnerships that are driven by their desire to expand their relational capacity and perspectives. That common knowledge makes governance of perspectives a feasible endeavor.

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2. Igersheim (2017) describes the controversy between Arrow and Samuelson in answering the question whether this result also applies on the Bergson SWF. [↑](#footnote-ref-2)
3. Larger projective planes, with 4, resp., 5 points on each line, have 13, resp. 21 both points and lines, but these don’t meet the duality property, implying that the primal and dual structure have the same form. [↑](#footnote-ref-3)
4. Three spanning points of a Fano hypergraph are form an independent set, from which the concept of a matroid is defined. Several properties of matroids carry over to the Fano hypergraph. [↑](#footnote-ref-4)
5. This operator is defined by the operator on vectors ⨁ in: if and only if in. [↑](#footnote-ref-5)
6. This structure-related way of defining contrasts with the standard way of defining in epistemic logics, where concepts are defined linearly and liberally from primitive concepts without recourse to the effects these definitions have on each other. [↑](#footnote-ref-6)
7. This diction between a Human and an Econ workplace corresponds in my opinion with the distinction made by Kahneman (2012). In his view, people on the ***Econs*** level, are slow thinkers because they are endowed with specific but refined separable values, which require computations and cognitive techniques. On the ***Human*** level people are fast thinkers and behave fast, because they have incorporated relational capacities from the past, which enables them to assess a complex situation fast. At the ***Mentality*** or ***Imperial*** level people act immediately and intuitively, following imperial group values. [↑](#footnote-ref-7)
8. This observation has consequences for the ownership of a partnership. [↑](#footnote-ref-8)
9. The labor time that was needed for a job to make a left-right rotation – from hunting to farming and back, for example – is the base of the Marxian theory of labor value. [↑](#footnote-ref-9)
10. However, in his Sapiens, Yuval Noah Harari says, "the domestication of wheat was a Faustian bargain between humans and grains" in which our species "cast off its intimate symbiosis with nature and sprinted towards greed and alienation". It was a bad bargain: "the agricultural revolution was history's biggest fraud". "The agricultural revolution was history's biggest fraud". More often than not it brought a worse diet, longer hours of work, and greater risk of starvation, crowded living conditions, greatly increased susceptibility to disease, new forms of insecurity and uglier forms of hierarchy. Harari thinks we may have been better off in the Stone Age, and he has powerful things to say about the wickedness of factory farming, concluding with one of his many superlatives: "modern industrial agriculture might well be the greatest crime in history". Galen Strawson (2014). [↑](#footnote-ref-10)
11. Lancaster (1966) firstly proposed the idea of distinguishing a commodity from its desirable qualities in the context of consumption theory. [↑](#footnote-ref-11)
12. The following conditions qualify a clone: given a transaction-partnership, with competent partners A ***clone*** of a workplace of type *a,* is a workplace, such that*.* The relation says that both values are *parallel*, that is, the hyperplanes at the intersection between the preference curves and the resource half-line from the origin are parallel. [↑](#footnote-ref-12)
13. Yang defines an agent as a consumer-producer. [↑](#footnote-ref-13)
14. An outcome is stable if all matches support Individual Rationality and Pairwise stability (Jackson and Wolinski, 1996). [↑](#footnote-ref-14)
15. For the general format of the Institutional Design Map, without reference to the economy *E*, the proof runs as follows: , and. From}, for *R* in, it follows that. [↑](#footnote-ref-15)
16. A mechanism π consists in equilibrium form of three elements, a message space, denoted *M*, a (group) equilibrium message correspondence, denoted *μ*, where , and an outcome function, denoted *h*, . Let be such a mechanism. When operated in an environment,*θ*, it leads to the outcomes in the outcome space, *Z*. If it is the case that for all environments in a given space, Θ, the mechanism leads to an outcome desired by the client in that environment, then we say that the mechanismπ *realizes* the goal function *F* if for all environments θ in Θ, . This concept can be represented in a commuting diagram: : an environment assigns a desired outcome; and the same environment generates a message, which message generates the desired outcome.
 [↑](#footnote-ref-16)