Functional Rights and Duties at the Micro and Macro Social Levels

Antônio Carlos da Rocha Costa

Programa de Pós-Graduação em Computação
Centro de Ciências Computacionais
Universidade Federal do Rio Grande - FURG
96.201-900, Rio Grande, RS, Brasil.

ac.rocha.costa@gmail.com

Workshop on Rights and Duties of Autonomous Agents

RDA2@ECAI, Montpellier, 2012

Delimitation of the scope of the presentation

- Presentation of an ongoing reflection:
  - taken from no established doctrine
  - mainly informal and conceptual (general ideas)
  - concerning the introduction of RD in a specific model of agent societies

  with an aside on the issue of non-functional rights and duties

Delimitation of the scope of the presentation

- Presentation of an ongoing reflection:
    - taken from no established doctrine
    - mainly informal and conceptual (general ideas)
    - concerning the introduction of RD in a specific model of agent societies

    with an aside on the issue of non-functional rights and duties

Please: interrupt for questions/comments/criticisms at any time.

Summary

Rights & Duties (vs. Permissions & Obligations)

Rights & Duties (vs. Permissions & Obligations)

Rights are NOT permissions
Duties are NOT obligations

Rights & Duties (vs. Permissions & Obligations)

Rights are NOT permissions
Duties are NOT obligations

- ▶ Behaviors vs. Interactions:

Rights & Duties (vs. Permissions & Obligations)

Rights are NOT permissions
Duties are NOT obligations

- ▶ Behaviors vs. Interactions:
    - ▶ behavior = what is externally observable about the functioning of a SINGLE agent
        - ▶ *behaviors concern INDIVIDUAL agents*

Rights & Duties (vs. Permissions & Obligations)

Rights are NOT permissions
Duties are NOT obligations

- ▶ Behaviors vs. Interactions:
  - ▶ behavior = what is externally observable about the functioning of a SINGLE agent
    - ▶ *behaviors concern INDIVIDUAL agents*
  - ▶ interaction = what is externally observable about the JOINT functioning of TWO OR MORE agents
    - ▶ *interactions concern TUPLES of agents*

Rights & Duties (vs. Permissions & Obligations)

Rights are NOT permissions
Duties are NOT obligations

- ▶ Behaviors vs. Interactions:
    - ▶ behavior = what is externally observable about the functioning of a SINGLE agent
        - ▶ *behaviors concern INDIVIDUAL agents*
    - ▶ interaction = what is externally observable about the JOINT functioning of TWO OR MORE agents
        - ▶ *interactions concern TUPLES of agents*

- ▶ Permissions & Obligations concern BEHAVIORS
  Rights & Duties concern INTERACTIONS (EXCHANGES)

Rights & Duties (vs. Permissions & Obligations)

That is:

Permissions and obligations may occur in isolation.
Rights and duties are correlative to each other.

Rights & Duties (vs. Permissions & Obligations)

That is:

> *Permissions and obligations may occur in isolation.*
> *Rights and duties are correlative to each other.*

Thus:

$\mathrm{Obl}(i)[\alpha]$ = agent i has the obligation of performing action α

Rights & Duties (vs. Permissions & Obligations)

That is:

> *Permissions and obligations may occur in isolation.*
> *Rights and duties are correlative to each other.*

Thus:

$\mathrm{Obl}(i)[\alpha]$ = agent i has the obligation of performing action α

But:

$\mathrm{Dty}(i)[\alpha] \wedge \mathrm{Rgt}(j)[\alpha]$ = agent i has the duty to perform action α and agent j has the right to have α performed

Rights & Duties (vs. Permissions & Obligations)

That is:

> *Permissions and obligations may occur in isolation.*
> *Rights and duties are correlative to each other.*

Thus:

$\mathrm{Obl}(i)[\alpha]$ = agent i has the obligation of performing action α

But:

$\mathrm{Dty}(i)[\alpha] \wedge \mathrm{Rgt}(j)[\alpha]$ = agent i has the duty to perform action α and agent j has the right to have α performed

So:

$$\mathrm{RD}(j, i)[\alpha]$$

Rights & Duties (vs. Permissions & Obligations)

For instance, we say:

- Internal norm of a shop (obligation):
  - Prices should NOT be exposed in windows with the VAT amount included.

  Obl(*employee*)[not include VAT amounts in exposed prices]

Rights & Duties (vs. Permissions & Obligations)

For instance, we say:

- Internal norm of a shop (obligation):
   - Prices should NOT be exposed in windows with the VAT amount included.

    $\mathrm{Obl}(employee)[\texttt{not include VAT amounts in exposed prices}]$

- General consumer regulation (duty & right):
    - In every shop, prices should be exposed in windows with the VAT amount included, so that consumers may know the total amount they will pay for each product.

    $\mathrm{RD}(consumer, shop)[\texttt{total amount be readily accessible}]$

Rights & Duties (vs. Permissions & Obligations)

The basic structure underlying of a situation of right and duty:
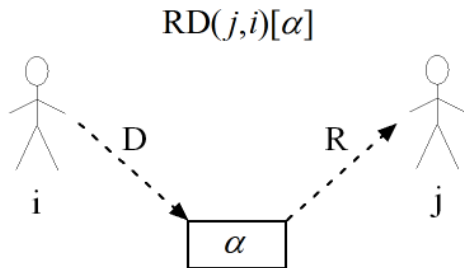
$$RD(j,i)[\alpha]$$

- α = the object of the right and duty (*the object exchanged*)
- j = the subject of the right (*right to acess/use the object*)
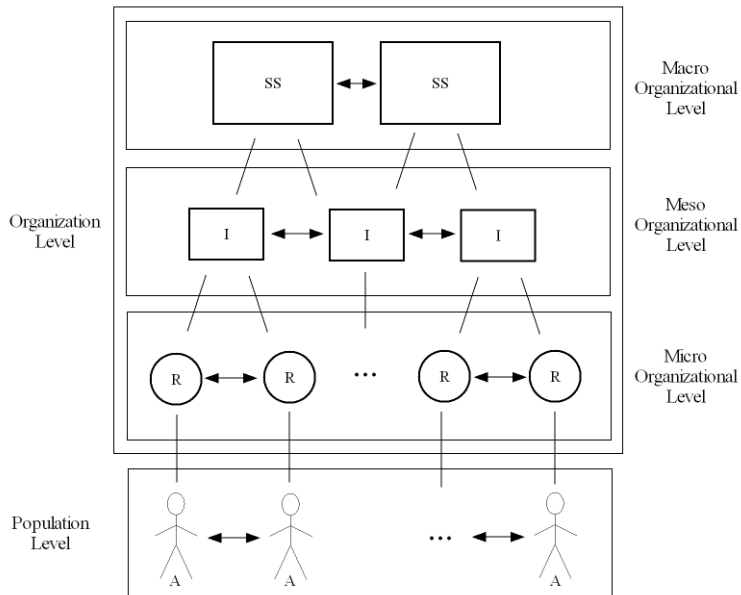- i = the subject of the duty (*duty to produce/transfer the object*)

Rights & Duties (vs. Permissions & Obligations)

More generally:

- $\mathrm{RD}(j, i)[\alpha; \beta]$, with

    - $\mathrm{D}(i)[\alpha]$
    - $\mathrm{R}(j)[\beta]$
    - and $\alpha \rightsquigarrow \beta$, that is, β enabled by α

A Reference Model of Social Organization (PopOrg)

A Reference Model of Social Organization (PopOrg)

The Notion of Social Function

The Notion of Social Function

Social function:

- *Activity* performed by an element that *satisfies a need* of another element (or, of the society as a whole)

The Notion of Social Function

Social function:

- *Activity* performed by an element that *satisfies a need* of another element (or, of the society as a whole)

Implicit in the notion of social function:

- performed in the context of an interaction
  - implies a dependence relation between the elements
  - implies persistent, periodic exchanges between the participants

The Notion of Social Function

Social function:

- *Activity* performed by an element that *satisfies a need* of another element (or, of the society as a whole)

Implicit in the notion of social function:

- performed in the context of an interaction
    - implies a dependence relation between the elements
    - implies persistent, periodic exchanges between the participants

Thus:

*Social Functions $\rightleftharpoons$ Social Exchanges $\rightleftharpoons$ Social Dependence Relations*

The Notion of Social Function

Social functions establish operational requirements on:
- the behavior of the beneficiary of the function
  - characterizing the way its need may be satisfied
- the interaction process
  - characterizing how the exchange between the beneficiary and the performer of the function should occur

The Notion of Social Function

Social functions establish operational requirements on:
- the behavior of the beneficiary of the function
  - characterizing the way its need may be satisfied
- the interaction process
  - characterizing how the exchange between the beneficiary and the performer of the function should occur

Thus, e.g., at the Population level:
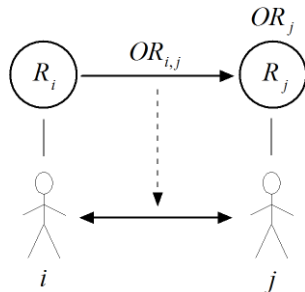- Agent i performs a function for agent j:
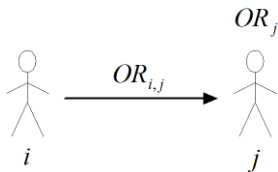
$$(i : OR_{i,j} : j) \rhd (j : OR_j)$$

The Notion of Social Function

- ▶ Social functions are performed under interaction patterns determined by the social roles played by the agents
  - ▶ interaction patterns inherited by the agents when they adopt their social roles

The Notion of Social Function

▶ Social functions are performed under interaction patterns
  determined by the social roles played by the agents
  ▶ interaction patterns inherited by the agents when they adopt
    their social roles

The Notion of Social Function

That is:

- ▶ Social functions are rooted in the organization level, not the population level

The Notion of Social Function

That is:

- ▶ Social functions are rooted in the organization level, not the population level

And:

- ▶ Social functions also exist in upper organizational levels (meso and macro), besides the micro organizational level
    - ▶ Social functions performed by institutions and social systems

A General Notion of Functional Rights and Duties

A General Notion of Functional Rights and Duties

- ▶ Social functions persist in a society only if supported by a certain set of rights & duties assigned to the elements involved in its performance

A General Notion of Functional Rights and Duties

- Social functions persist in a society only if supported by a certain set of rights & duties assigned to the elements involved in its performance

- The rights & duties that support a social function concern the operational requirements involved in the definition of the social function

A General Notion of Functional Rights and Duties

- Social functions persist in a society only if supported by a certain set of rights & duties assigned to the elements involved in its performance

- The rights & duties that support a social function concern the operational requirements involved in the definition of the social function

- Formally:

  If $(i : OR_{i,j} : j) \triangleright (j : OR_j)$ denotes a social function performed by element i for element j, according to the operational requirements $OR_{i,j}$ and OR_j and if that social function is persistent then:
    - $\mathrm{R}(j)[or_j]$: the beneficiary j has the right to some $or_j \models OR_j$
    - $\mathrm{D}(i)[or_i]$: the function performer i has some duty or_i
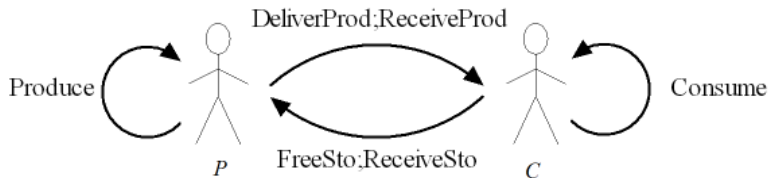   - such that $or_i \odot or_j \models OR_{i,j}$

A General Notion of Functional Rights and Duties

Simple examples of functional rights and duties:

A General Notion of Functional Rights and Duties

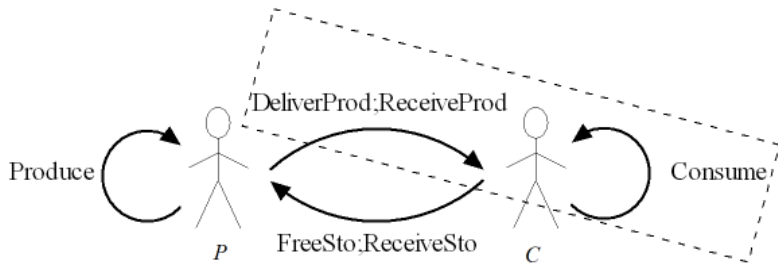Simple examples of functional rights and duties:

- ▶ Context: a *producer-consumer* system:

A General Notion of Functional Rights and Duties

Simple examples of functional rights and duties:

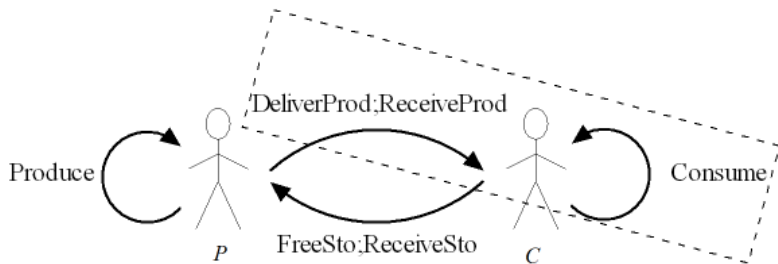- ▶ Context: a *producer-consumer* system:

- ▶ One social function being performed:

$(P : \texttt{DeliverProd}; \texttt{ReceiveProd} : C) \rhd (C : \texttt{ReceiveProd}; \texttt{Consume})$

A General Notion of Functional Rights and Duties

Simple examples of functional rights and duties:

- Context: a *producer-consumer* system:

- One social function being performed:

  $(P : \texttt{DeliverProd}; \texttt{ReceiveProd} : C) \rhd (C : \texttt{ReceiveProd}; \texttt{Consume})$
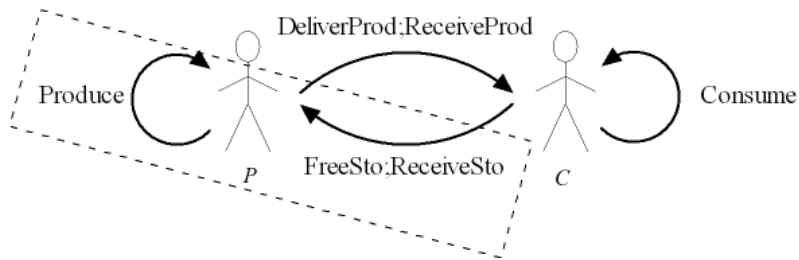
- Right and duty involved:

  Duty of the Producer: $\mathrm{D}(P)[\texttt{DeliverProd}]$

  Right of the Consumer: $\mathrm{R}(C)[\texttt{ReceiveProd}]$

  And: $\texttt{DeliverProd} \odot \texttt{ReceiveProd} \models \texttt{DeliverProd}; \texttt{ReceiveProd}$

A General Notion of Functional Rights and Duties
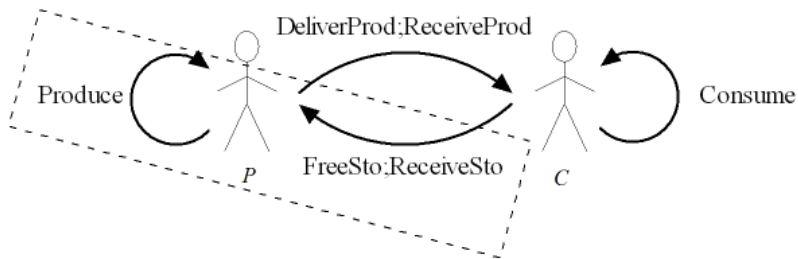
But also, reciprocally:

- Another social function being performed:

  $(C : \texttt{FreeSto}; \texttt{ReceiveSto} : P) \rhd (P : \texttt{ReceiveSto}; \texttt{Produce})$

A General Notion of Functional Rights and Duties

But also, reciprocally:

- Another social function being performed:

  $(C : \texttt{FreeSto}; \texttt{ReceiveSto} : P) \rhd (P : \texttt{ReceiveSto}; \texttt{Produce})$

- Right and duty involved:

    Duty of the Consumer: $\mathrm{D}(P)[\texttt{FreeSto}]$

    Right of the Producer: $\mathrm{R}(C)[\texttt{ReceiveSto}]$

    And: $\texttt{FreeSto} \odot \texttt{ReceiveSto} \models \texttt{FreeSto}; \texttt{ReceiveSto}$

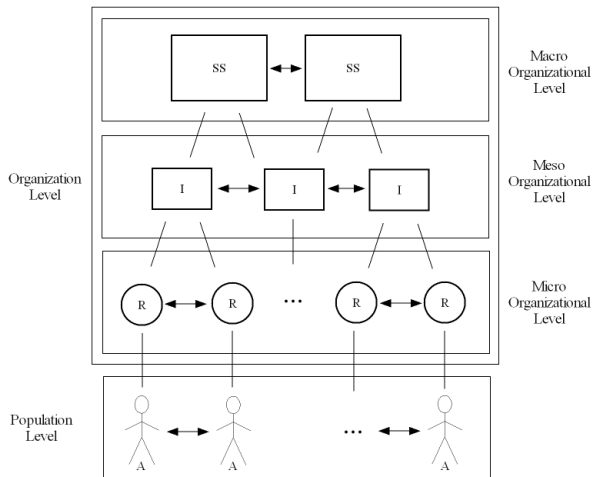# A General Notion of Functional Rights and Duties

Thus:

- ▶ The performance of a social function implies:
  - the constitution of a set of functional rights and duties

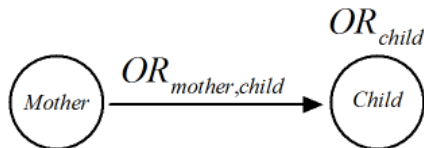# Functional Rights and Duties at the Micro-organizational Level

Functional Rights and Duties at the Micro-organizational Level
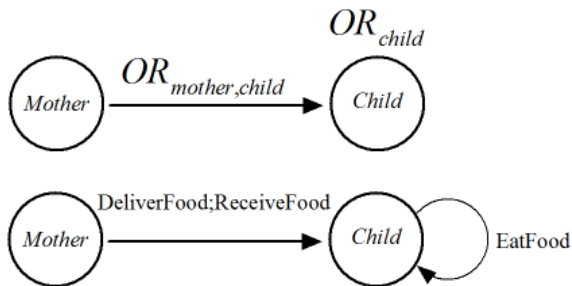
The PopOrg model:

Functional Rights and Duties at the Micro-organizational Level
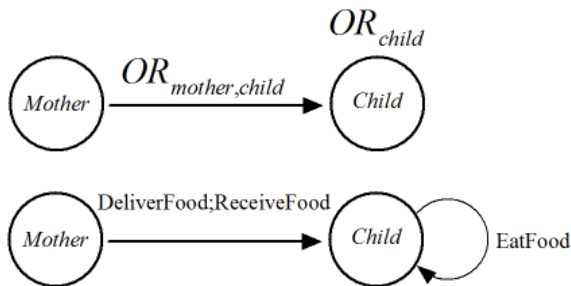
At the micro-organizational level:

Functional Rights and Duties at the Micro-organizational Level

At the micro-organizational level:

Functional Rights and Duties at the Micro-organizational Level

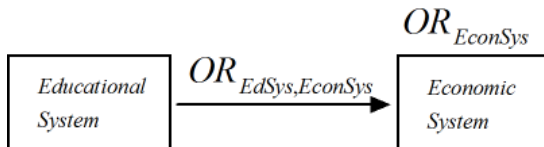At the micro-organizational level:

Rights and duties:

- Mother: duty to provide food
- Child: right to receive food

Functional Rights and Duties at the Macro-organizational Level
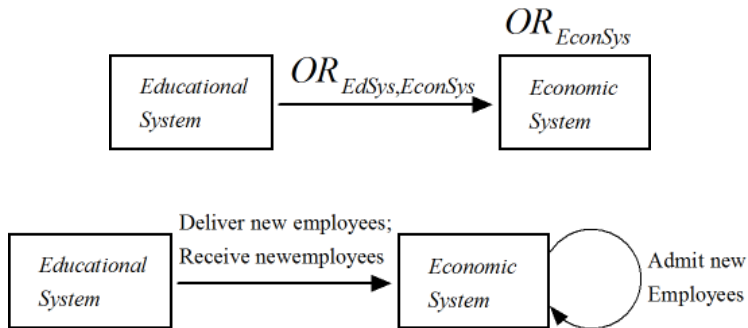
Functional Rights and Duties at the Macro-organizational Level

At the macro-organizational level:

Functional Rights and Duties at the Macro-organizational Level

At the macro-organizational level:

$$OR_{EconSys}$$

Educational System $\xrightarrow{OR_{EdSys,EconSys}}$ Economic System

Educational System — Deliver new employees; Receive newemployees → Economic System — Admit new Employees

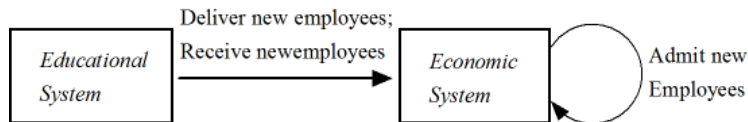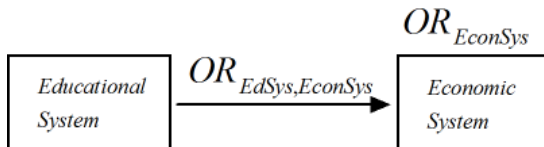# Functional Rights and Duties at the Macro-organizational Level

At the macro-organizational level:

Rights and duties:

- Educational system: duty to form new employees
- Economic system: right to receive new employees

Functional Rights and Duties at the Macro-organizational Level

Of course:

- ▶ Both examples are instances of the Producer-Consumer scheme

Functional Rights and Duties at the Macro-organizational Level

Of course:

- ▶ Both examples are instances of the Producer-Consumer scheme

But this hints on the importance of the Producer-Consumer scheme for the functional analysis of agent societies

- ▶ against, e.g., the Client-Server scheme
    - ▶ cf. later in this presentation

Functional Rights and Duties, and the Modularity of Agent Societies
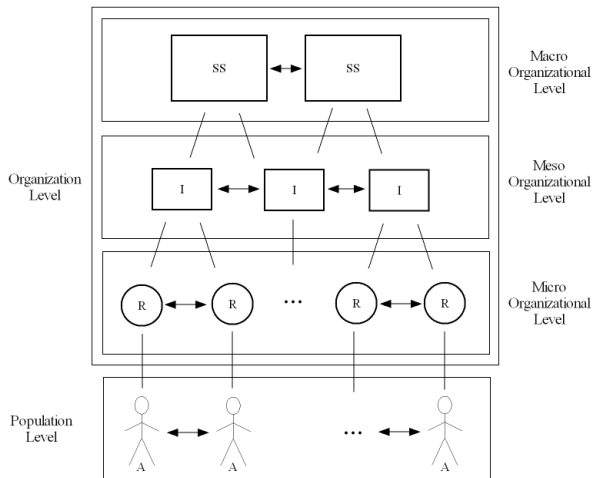
Functional Rights and Duties, and the Modularity of Agent Societies

Claim: the basic level for the modularity of agent societies is the meso-level (the level of the institutions)

Functional Rights and Duties, and the Modularity of Agent Societies

Claim: the basic level for the modularity of agent societies is the meso-level (the level of the institutions)

Functional Rights and Duties, and the Modularity of Agent Societies

Institution:

- ► Two main senses:

Functional Rights and Duties, and the Modularity of Agent Societies

Institution:

- ► Two main senses:
    - ► institution = system of rules regulating the behavior of social roles
      (notion typical, e.g., in Economic Theory and in Social Theory strongly influenced by Economic Theory)
      Ex.: electronic institutions

Functional Rights and Duties, and the Modularity of Agent Societies

Institution:

- ▶ Two main senses:
    - ▶ institution = system of rules regulating the behavior of social roles
      (notion typical, e.g., in Economic Theory and in Social Theory strongly influenced by Economic Theory)
      Ex.: electronic institutions

    - ▶ institution = organization
      (functional view, emphasizing the function performed by the organization in/to the society)
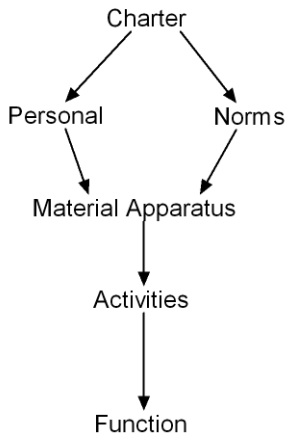   Ex.: university

Functional Rights and Duties, and the Modularity of Agent Societies

Institution:

- ▶ Two main senses:

    - ▶ institution = system of rules regulating the behavior of social roles
      (notion typical, e.g., in Economic Theory and in Social Theory strongly influenced by Economic Theory)
      Ex.: electronic institutions

    - ▶ institution = organization
      (functional view, emphasizing the function performed by the organization in/to the society)
      Ex.: university

- ▶ Functionalism takes the second sense

    (*Malinowski, A Scientific Theory of Culture*)

Functional Rights and Duties, and the Modularity of Agent Societies

Malinowski's own view of institutions:

Functional Rights and Duties, and the Modularity of Agent Societies

Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties, and the Modularity of Agent Societies

Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties, and the Modularity of Agent Societies

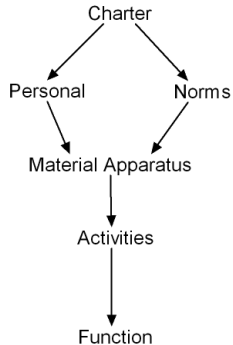Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties, and the Modularity of Agent Societies
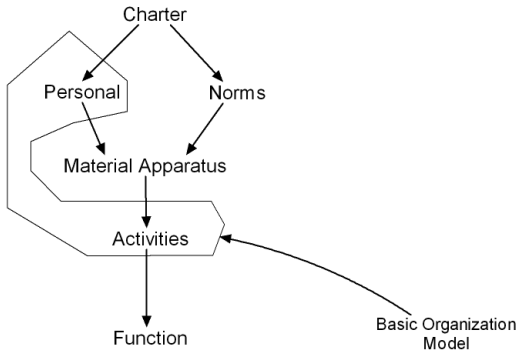
Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties, and the Modularity of Agent Societies

Malinowski and the evolution of the MAS notion of organization:

Charter

Personal   Norms

Material Apparatus   Structural Organization
                            Model

Activities   Organization + Environment
                            Model

Function   Basic Organization
                            Model

Functional Rights and Duties, and the Modularity of Agent Societies

Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties, and the Modularity of Agent Societies

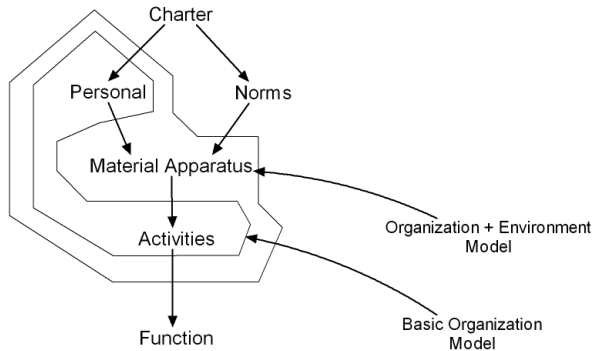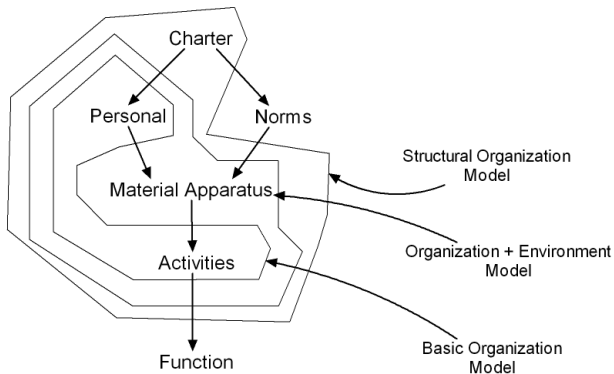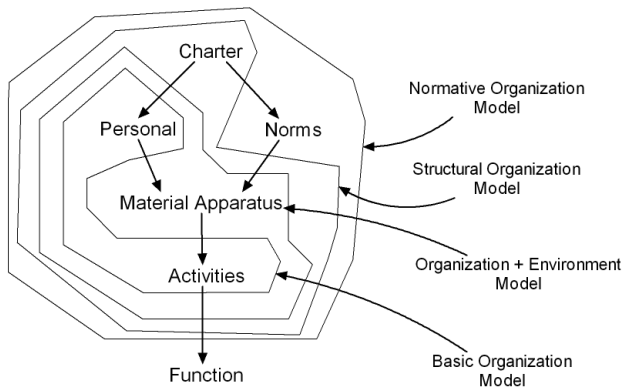Malinowski and the evolution of the MAS notion of organization:

Functional Rights and Duties and the Modularity of Agent Societies

Modularity of agent societies:

Functional Rights and Duties and the Modularity of Agent Societies

Modularity of agent societies:

- ▶ Requires an external view of organizations
    - ▶ institutions = functional view of organizations
    - ▶ an inter-organizational point of view

Functional Rights and Duties and the Modularity of Agent Societies

Modularity of agent societies:

- ▶ Requires an external view of organizations
  - ▶ institutions = functional view of organizations
  - ▶ an inter-organizational point of view
- ▶ Society = network of social systems
  - ▶ Social system = network of institutions

Functional Rights and Duties and the Modularity of Agent Societies

Modularity of agent societies:

- ▶ Requires an external view of organizations
    - ▶ institutions = functional view of organizations
    - ▶ an inter-organizational point of view
- ▶ Society = network of social systems
    - ▶ Social system = network of institutions

Basic social module = institution

Functional Rights and Duties and the Modularity of Agent Societies

Modularity of agent societies:

- ▶ Requires an external view of organizations
  - ▶ institutions = functional view of organizations
  - ▶ an inter-organizational point of view
- ▶ Society = network of social systems
  - ▶ Social system = network of institutions

Basic social module = institution

Basic links among institutions = functional links

- ▶ specified, e.g., through agreements/contracts (*statements of the rights and duties of the involved institutions*)

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

- ▶ Most common notion of function:
  - ▶ Function = service (e.g., *web service*)

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

- ▶ Most common notion of function:
  - ▶ Function = service (e.g., *web service*)
- ▶ Problem of the idea that *function = service*:

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

- ▶ Most common notion of function:
  - ▶ Function = service (e.g., *web service*)
- ▶ Problem of the idea that *function = service*:
  - ▶ service is a very restricted functional notion:
    - ▶ lacks the idea of reciprocity
      (client has all rights, server has only duties)

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

- ▶ Most common notion of function:
  - ▶ Function = service (e.g., *web service*)
- ▶ Problem of the idea that *function = service*:
  - ▶ service is a very restricted functional notion:
    - ▶ lacks the idea of reciprocity
      (client has all rights, server has only duties)
  - ▶ appropriate for the *permissions & obligations* approach
    - ▶ not for the *rights & duties* approach

Functional Rights and Duties, and the Modularity of Agent Societies

The notion of function is not completely new to MAS:

- ▶ Most common notion of function:
    - ▶ Function = service (e.g., *web service*)
- ▶ Problem of the idea that *function = service*:
    - ▶ service is a very restricted functional notion:
        - ▶ lacks the idea of reciprocity
          (client has all rights, server has only duties)
    - ▶ appropriate for the *permissions & obligations* approach
        - ▶ not for the *rights & duties* approach
- ▶ That's why the Producer-Consumer scheme should be the preferred analytical scheme

Functional Rights and Duties, and the Morality of Social Exchanges

Functional Rights and Duties, and the Morality of Social Exchanges

Morality:

- ▶ Jean Piaget's conception: the basic system of regulation of social exchanges

Functional Rights and Duties, and the Morality of Social Exchanges
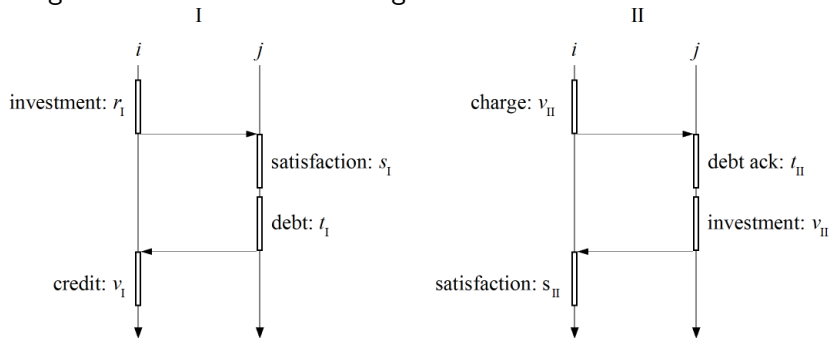
Morality:

- ▶ Jean Piaget's conception: the basic system of regulation of social exchanges

Model of social exchange:

- ▶ social exchange:
  - ▶ exchange of services between two agents
  - ▶ subject to evaluation through some qualitative exchange values
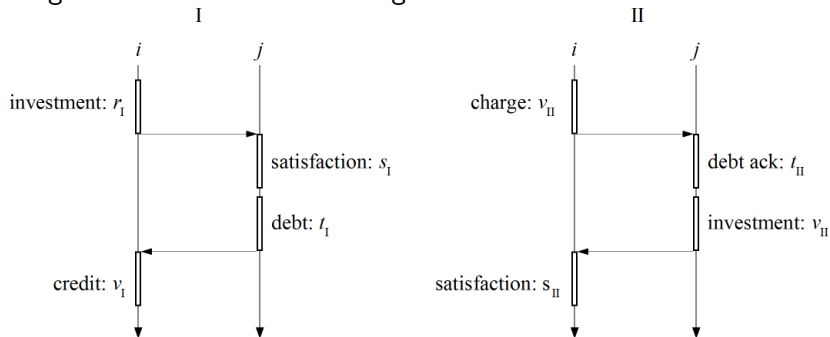 - ▶ well-defined operational structure (protocol)

Functional Rights and Duties, and the Morality of Social Exchanges

Piaget's model of social exchange:

Functional Rights and Duties, and the Morality of Social Exchanges
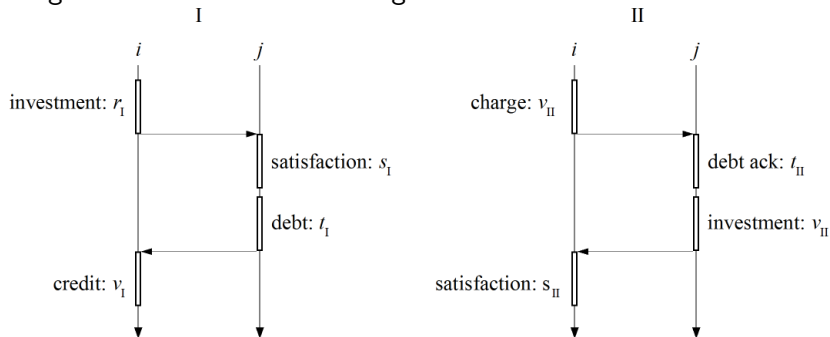
Piaget's model of social exchange:

with qualitative exchange values submitted to some equilibrium conditions (qualitative algebraic constraints)

Functional Rights and Duties, and the Morality of Social Exchanges

Piaget's model of social exchange:

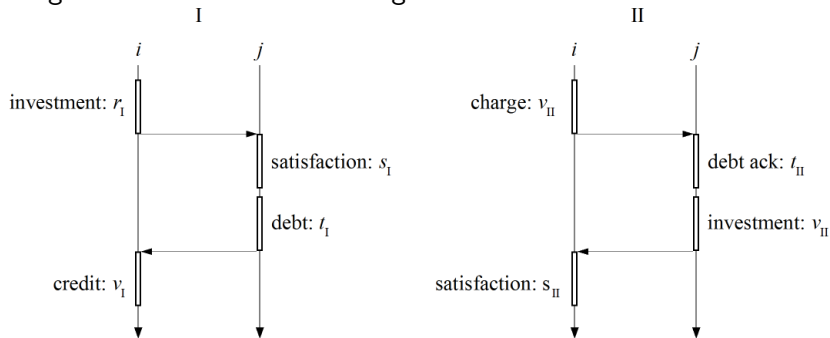Equilibrium conditions:

- $r_k \simeq s_k$ and $s_k \simeq t_k$ and $t_k \simeq v_k$ so that $r_k \simeq v_k$ (for $k =$ I,II)

Functional Rights and Duties, and the Morality of Social Exchanges

Piaget's model of social exchange:

Equilibrium conditions:

- $r_k \simeq s_k$ and $s_k \simeq t_k$ and $t_k \simeq v_k$ so that $r_k \simeq v_k$ (for $k =$ I,II)
- $v_{\text{II}} \simeq v_{\text{I}}$

Functional Rights and Duties, and the Morality of Social Exchanges
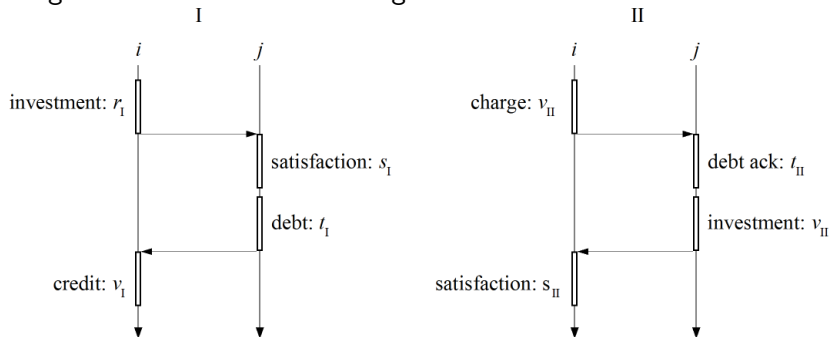
Piaget's model of social exchange:

Equilibrium conditions:

- $r_k \simeq s_k$ and $s_k \simeq t_k$ and $t_k \simeq v_k$ so that $r_k \simeq v_k$ (for $k =$ I,II)

- $v_{II} \simeq v_{I}$

- so that $s_{II} \simeq r_{I}$

Functional Rights and Duties, and the Morality of Social Exchanges

Piaget's model of social exchange:
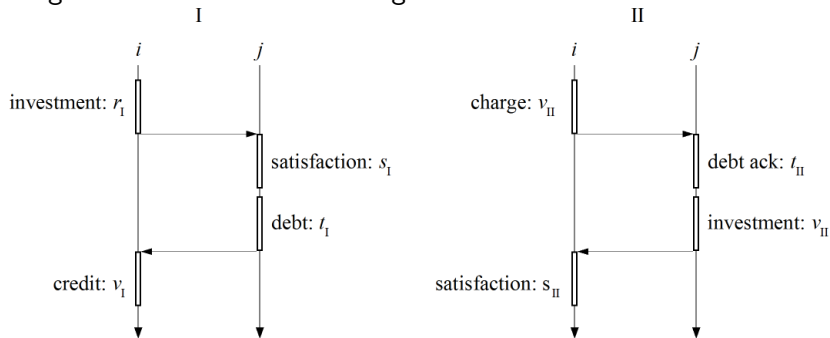
In disequilibrium:

- $r_I > s_{II}$: agent i is not being properly compensated

Functional Rights and Duties, and the Morality of Social Exchanges

Piaget's model of social exchange:
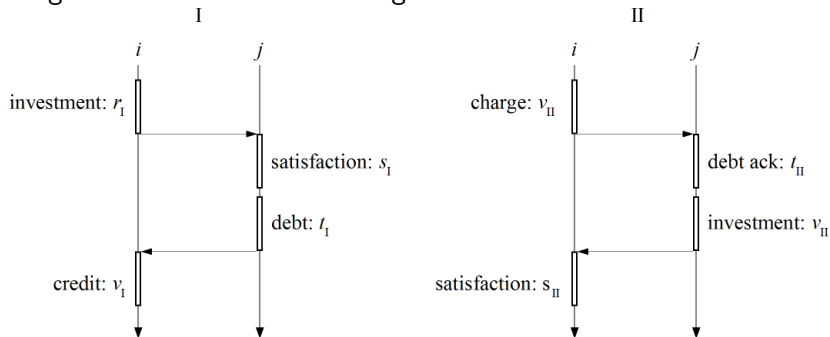
In disequilibrium:

- $r_I > s_{II}$: agent i is not being properly compensated
- $s_I > t_I$: agent i is being depreciated by agent i

Functional Rights and Duties, and the Morality of Social Exchanges

The basis of the moral system of social exchanges:

Functional Rights and Duties, and the Morality of Social Exchanges

The basis of the moral system of social exchanges:

> The mutual need for equilibrated balances of exchange values arises only if i and j see each other as equal.
> - autonomous exchanges

Functional Rights and Duties, and the Morality of Social Exchanges

The basis of the moral system of social exchanges:

The mutual need for equilibrated balances of exchange values arises only if i and j see each other as equal.
- autonomous exchanges

If i and j see i as superior to j (w.r.t some issue), then they will tend to accept that the balance of the exchange values favors i.
- heteronomous exchanges

Functional Rights and Duties, and the Morality of Social Exchanges

The basis of the moral system of social exchanges:

> The mutual need for equilibrated balances of exchange values arises only if i and j see each other as equal.
> - autonomous exchanges
>
> If i and j see i as superior to j (w.r.t some issue), then they will tend to accept that the balance of the exchange values favors i.
> - heteronomous exchanges

The first case arises when there is *autonomous respect* between the agents.

The second case arises when there is *heteronomous respect* between the agents.

Functional Rights and Duties, and the Morality of Social Exchanges

In the case of *autonomous respect* between the agents ($i \approx j$):

- Always the case that:
  $\mathrm{RD}(i,j)$[claim the equilibrium] and
  $\mathrm{RD}(j,i)$[claim the equilibrium]

Functional Rights and Duties, and the Morality of Social Exchanges

In the case of *autonomous respect* between the agents ($i \approx j$):

- ▶ Always the case that:
  $\mathrm{RD}(i,j)$[claim the equilibrium] and
  $\mathrm{RD}(j,i)$[claim the equilibrium]
    - ▶ specially if $r_{\mathrm{I}} < s_{\mathrm{II}}$ or $s_{\mathrm{I}} > r_{\mathrm{II}}$

Functional Rights and Duties, and the Morality of Social Exchanges

In the case of *autonomous respect* between the agents ($i \approx j$):

- Always the case that:
  $\mathrm{RD}(i,j)$[claim the equilibrium] and
  $\mathrm{RD}(j,i)$[claim the equilibrium]
  - specially if $r_{\mathrm{I}} < s_{\mathrm{II}}$ or $s_{\mathrm{I}} > r_{\mathrm{II}}$

In the case of *heteronomous respect* between the agents ($i \succ j$):

- In any situation: $\mathrm{RD}(i,j)$[claim the equilibrium]

Functional Rights and Duties, and the Morality of Social Exchanges

In the case of *autonomous respect* between the agents ($i \approx j$):

- Always the case that:
  $\mathrm{RD}(i,j)[\texttt{claim the equilibrium}]$ and
  $\mathrm{RD}(j,i)[\texttt{claim the equilibrium}]$
  - specially if $r_\mathrm{I} < s_\mathrm{II}$ or $s_\mathrm{I} > r_\mathrm{II}$

In the case of *heteronomous respect* between the agents ($i \succ j$):

- In any situation: $\mathrm{RD}(i,j)[\texttt{claim the equilibrium}]$
  - but never: $\mathrm{RD}(j,i)[\texttt{claim the equilibrium}]$

Functional Rights and Duties, and the Morality of Social Exchanges

In the case of *autonomous respect* between the agents ($i \approx j$):

- ▶ Always the case that:
  $\mathrm{RD}(i,j)$[claim the equilibrium] and
  $\mathrm{RD}(j,i)$[claim the equilibrium]
    - ▶ specially if $r_\mathrm{I} < s_\mathrm{II}$ or $s_\mathrm{I} > r_\mathrm{II}$

In the case of *heteronomous respect* between the agents ($i \succ j$):

- ▶ In any situation: $\mathrm{RD}(i,j)$[claim the equilibrium]
    - ▶ but never: $\mathrm{RD}(j,i)$[claim the equilibrium]

            (*law of the strongest*)

Functional Rights and Duties, and the Morality of Social Exchanges

A constructive relationship between Morality and Law, from Piaget's perspective:

Functional Rights and Duties, and the Morality of Social Exchanges

A constructive relationship between Morality and Law, from Piaget's perspective:

Codified (qualitative and quantitative) norms: Legal exchanges

⇑

Quantitative non-codified norms: Economic exchanges

⇑

Qualitative non-codified norms: Social exchanges

Functional Rights and Duties, and the Morality of Social Exchanges

A constructive relationship between Morality and Law, from Piaget's perspective:

Codified (qualitative and quantitative) norms: Legal exchanges
⇑
Quantitative non-codified norms: Economic exchanges
⇑
Qualitative non-codified norms: Social exchanges
⇑
Functional rights and duties

Functional Rights and Duties, and the Morality of Social Exchanges

A constructive relationship between Morality and Law, from Piaget's perspective:

Codified (qualitative and quantitative) norms: Legal exchanges

⇑

Quantitative non-codified norms: Economic exchanges
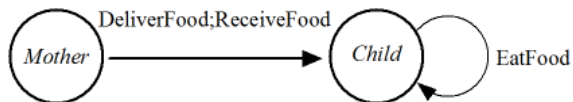
⇑

Qualitative non-codified norms: Social exchanges

⇑

Functional rights and duties

Social Functions ⇌ Social Exchanges ⇌ Social Dependence Relations

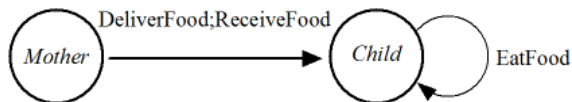# The issue of Non-functional Rights and Duties

The issue of Non-functional Rights and Duties

Example:

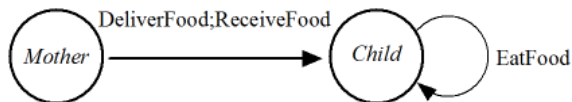# The issue of Non-functional Rights and Duties

Example:

Rights and duties:

- ▶ Mother: duty to provide food
- ▶ Child: right to receive food

The issue of Non-functional Rights and Duties

Example:

Rights and duties:

- ▶ Mother: duty to provide food
- ▶ Child: right to receive food

Those rights and duties:

- ▶ concern the interaction

  they are *funtional* rights and duties

The issue of Non-functional Rights and Duties

Example:

Rights and duties:

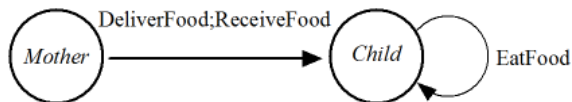- ▶ Mother: duty to provide food
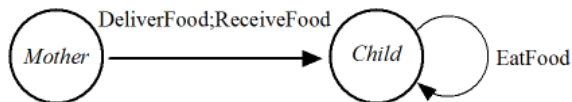- ▶ Child: right to receive food

Those rights and duties:

- ▶ concern the interaction

  they are *funtional* rights and duties

Non-functional right:

The issue of Non-functional Rights and Duties

Example:

Rights and duties:

- ▶ Mother: duty to provide food
- ▶ Child: right to receive food

Those rights and duties:

- ▶ concern the interaction

  they are *funtional* rights and duties

Non-functional right:

- ▶ Child: right to eat

The issue of Non-functional Rights and Duties

But:

The issue of Non-functional Rights and Duties

But:

- ▶ Are there (really) non-functional rights & duties?

The issue of Non-functional Rights and Duties

But:

- Are there (really) non-functional rights & duties?

- In the positive case, are there non-functional rights & duties meaningful in agent societies?
    - E.g.: freedom of speech? right of property?

Some Conclusions

Some Conclusions

- Rights and duties are not (just) permissions and obligations

Some Conclusions

- Rights and duties are not (just) permissions and obligations
- The notion of social function is essential to any *architectural approach* to agent societies

Some Conclusions

- Rights and duties are not (just) permissions and obligations
- The notion of social function is essential to any *architectural approach* to agent societies
- Functional rights and duties support the persistence of social interactions
    - at all levels of social organization:
      micro (social roles), meso (institutions), macro (social systems)

Some Conclusions

- Rights and duties are not (just) permissions and obligations
- The notion of social function is essential to any *architectural approach* to agent societies
- Functional rights and duties support the persistence of social interactions
  - at all levels of social organization:
    micro (social roles), meso (institutions), macro (social systems)
- Institution = organization + its social functions

Some Conclusions

- Rights and duties are not (just) permissions and obligations
- The notion of social function is essential to any *architectural approach* to agent societies
- Functional rights and duties support the persistence of social interactions
  - at all levels of social organization:
    micro (social roles), meso (institutions), macro (social systems)
- Institution = organization + its social functions
- The institutional level is the basic structural level for the modularity of agent societies

Some Conclusions

- Rights and duties are not (just) permissions and obligations
- The notion of social function is essential to any *architectural approach* to agent societies
- Functional rights and duties support the persistence of social interactions
    - at all levels of social organization:
      micro (social roles), meso (institutions), macro (social systems)
- Institution = organization + its social functions
- The institutional level is the basic structural level for the modularity of agent societies
- It may happen that functional rights and duties operationally underlie systems of social regulation (moral, legal)
    - thus, underlying their corresponding rights and duties (moral and legal rights and duties)

Functional Rights and Duties at the Micro and Macro Social Levels

Antônio Carlos da Rocha Costa

Programa de Pós-Graduação em Computação
Centro de Ciências Computacionais
Universidade Federal do Rio Grande - FURG
96.201-900, Rio Grande, RS, Brasil.

ac.rocha.costa@gmail.com

Workshop on Rights and Duties of Autonomous Agents

RDA2@ECAI, Montpellier, 2012