Conformation Systems Theory

How Children Seek and Discover
The Local Cultural Implementations
Of Four Universal Forms of Social Relations –

And How People Evoke Each Other’s
Relational Motives and Moral Sentiments

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Problems to solve:

- How do people coordinate?
- How do people generally cooperate, typically acting morally, when they could defect, gaining more in the short run?
- Why is there so much cultural variation in social relations and social structures?
- Is this variation systematically organized, or arbitrary and random?
• What aspects of human sociality are innate?
• What aspects are learned?
• How are the learned aspects learned?
• How do innate and learned aspects of sociality conflict, or how are they integrated?
• The omni-potent infant and the specific culturally committed adult.
• How do children become able – and motivated – to participate in their culture-specific social relationships?
Humans sociality is unique:
- dependent on sociality,
- capable and motivated,
- complex,
- variable across cultures,
- generative of novel forms.
How do we do it?

• *What* are the building blocks we use to relate?

• *How many* models do we have for coordinating?
How many ways do we have to

- Generate our own social action;
- Motivate our own social action;
- Understand others’ action;
- Remember and think about interaction;
- Evaluate our own, our partners’, and third parties’ actions;
- Sanction and redress;

- **Coordinate interaction?**
The universe is complex and variable: how many basic forces structure the physical world?

4

The human organism is complex and variable: how many nucleotides encode all development, anatomy, & physiology?

4
Human sociality is complex and variable: how many elementary relational models organize all human sociality?
A Relational Model Is ‘Elementary’ If It Is

- Used to coordinate all domains of sociality.
- Universal across cultures & throughout history.
- Irreducible to simpler component types of relationships.
- Innate (cognitions, motives, emotions), and/or
- Naturally emergent in social coordination.
- Intrinsically motivated: an end in itself.
What are the four elementary relational models – the four fundamental forms of sociality?
Four elementary relational models

- **Communal Sharing:**
  - Equivalence Categories

- **Authority Ranking:**
  - Legitimate Hierarchy

- **Equality Matching:**
  - Even Balance

- **Market Pricing:**
  - Ratios, Proportionality
Not merely instrumental; relational models are ends in themselves: intrinsically rewarding, inherently motivating:

- Appetitive – wanting;
- Consummatory – satisfaction;
- Motivation to avoid or repair one’s own transgression (e.g., shame);
- Motivation to sanction other’s transgressions (e.g., outrage/anger);
- Loss motives (e.g., sadness, loneliness).
What evokes those motives?

What invokes normative commitments to each RM, making them morally binding?

How do people recognize the relational model that others are using to coordinate?

How do people show what RM they are expecting and invoking?

How do people modulate each type of RM?
How do children learn the local cultural preos that enable them to implement the mods?

When children attempt to initiate a relationship, or participate in one, what do they try to do to create each type of relationship?
CS consists of group membership: categories of people.

But how do children know who is in what group, when, and with regard to what?
AR consists of a linear order of persons, conferring on superiors rights to respect and deference, and conferring on subordinates rights to guidance, leadership, and protection.

But how do children know who has what rank when and with regard to what?
EM consists of additive differences with reference to even balance.

But how do children know who is supposed to be even with whom on what occasions with respect to what?
MP consists of coordination with reference to a conventionally meaningful ratio.

But how do children know what can be compared to what, by whom, on what occasions, and at what ratios?
Children innately know the structures: *mods*. The mod is necessary, but not sufficient to coordinate any aspect of any activity in any domain.

You need to know *which* mod to use, and *how, when, where, with whom, and with regard to what* to implement the mod.

The child actively seeks this culturally-provided information to complete the innate mod.

This sought and learned complement is the *preos* of the mod.
Each relational model has a distinct conformation system that:

- Constitutes the RM.
- Evokes the motivations, elicits the emotions, and invokes the moral commitments that sustain, modulate, & regulate the RM.
- Is the medium of its communicative representation.
- Is the medium of its cognitive representation.
- Is the channel for the cultural transmission of the local implementations of the RM.
- Medium in which children discover the local cultural implementations of the RM.
Communal Sharing

- People feel they have something ‘essential’ in common,
- that differentiates them from others.
- Lovers, family, clan, team, platoon, community, university, profession, ethnic group, nation, human kind.

- Equivalence relation;
- Nominal scale of measurement (categories, equivalence sets).
The Conformation System of Communal Sharing
Bronze of 7 women, from Olympia, 12th century BCE.
Heracles and Centaur Pholos shake hands, showing that they have formed a xenia relationship.
“One of the Family”
Parke & Bakamugga blood bonding, 1889, at Semliki River near Lake Albert Edward Nyanza
Unmyelinated slow conducting C-afferents.
Kiss

- Creates,
  - Sustains,
  - Modulates: enhances, reduces, (dis)ambiguates, redresses.

- Evokes motivating emotions

- Communicates:
  - To participants
  - To observers

- Corresponds to and resonates with mental representation.
Children observe, imitate, play, & practice:
- Discovering how to create CS relationships;
- Discovering who loves whom.

Conversely,

Romantic love and family structures are transmitted from generation to generation.
The kiss as a specific form of oral tactile conformation of Communal Sharing is present in some cultures, absent in others.

It can be a prelude to and component of sexual relations.
Dancers & clappers on Saqqara tomb mural, c. 2500 BC
Dancers on Samarra pottery, Siyalk culture, northern Mesopotamia, 5th millennium, also holding hands

Dancers on shard, Iran, 4th millennium
Genital modification
What is the neural substrate that supports Communal Sharing?

Probably the insular cortex (insulae), bilaterally.

The insula brings together interoception and tactile sensations to identify the boundaries and state of the ‘body.’

Whether the ‘body’ is just me, or we.
Consubstantial Assimilation: Connecting bodies through contact, contiguity, and similarity

- Sex
- Birth
- Nursing,
- Feeding & commensalism
- Touch
- Body surfaces & modifications
- Rhythmic synchronous movement
Consubstantial assimilation is **indexical**: the body represents the social person; the assimilation of bodies represents the equivalence of social persons.
People are asymmetrically differentiated, as superiors and subordinates.

Those above are perceived as *legitimately*, naturally, necessarily entitled to deference and respect,

but are responsible to wisely guide, lead, stand up for, speak for, and protect their subordinates.
• *Not* mere coercive *control or force*;
• *Not* individual *power* to get or do what you want.
• *Not* necessarily exploitive.
• Military or bureaucratic hierarchy, seniority, feudal systems, filial piety, worshiping ancestors & gods.
• Linear ordering,
• Ordinal scale.
The Conformation System of Authority Ranking
Vertebrate dominance ranking is priority of access to resources: temporal precedence.

Relative rank is displayed and conferred by:
Fig. 4.7. Submissive posture of an adolescent male dik-dik in response to father’s hunched posture (threat display).
Shogun Minamoto Yoritomo
Mayan King in headdress on platform, looking at kneeling captives, 782 AD
Yakshi with attendants
Chandraketugarh, India
Mayan dignitary,
Palenque,
600 - 900 AD
Urnashe, King Of Lagash, 26th cent BCE
Burj Khalifa
828 meters
Dubai
In many language families, rank is represented by plurals:

- English: royal *we*
- French: *vous* vs. *tu*
- Moore: *yãmba* vs. *fo*
  
  *Eb* vs. *a*
72 names of Judaic God,

101 names of Ahura Mazda,

99 (or 1000 or 3000) names of Allah,

1000 names of Vishnu.
Thousand-armed Goddess of Mercy, Northern Song Dynasty, China, 971

Guanyin 1000 eyes & hands, 22 m, 110,000 kg, Puning Temple, Chengde, Hebei Province 1755
Tibet deity
“I kicked their butt!”
Zoroaster / Zarathustra

Brahma, Vishnu, Shiva
The Universally Honored One of Tao
沿着毛主席的革命文艺路线胜利前进
and another
physical magnitude
Iconic Physics of Magnitudes

- Higher
- Bigger
- More numerous
- Greater force ('power')
- Ahead (in front vs. behind)
- Temporal precedence (going before).

Are there any other dimensions, magnitudes, or stimulus intensities used to communicate & constitute AR?
Social Rank Mapped by Temporal Order

**As Determinant**
- Age (birth order)
- Date of accession to office or membership (seniority)
- Being first to accomplish something or get somewhere

**As Display**
- Speaking first
- Choosing first
- Greeted first
- Served first
- Starting eating first
- Going first
- Others wait for
- Saluting first (reversed).
Iconic Physics of Magnitudes

- Higher
- Bigger
- Ahead
- More numerous
- Preceding
- Greater force (‘power’)
- Brighter
- Louder
These dimensions are processed by the analog magnitude system, whose core neural substrate is the lateral segment of the intraparietal sulcus.
Equality Matching

- People attend to additive differences with reference to even balance.
- Turn-taking, tit-for-tat in-kind reciprocity, eye-for-an-eye vengeance, even distribution, equal contributions, one-person one-vote, draft lottery, rotating credit associations, most rules of most games & sports.

- Ordered Abelian group
  addition, additive inverse, associative & commutative;

- Interval scale.
Equality Matching

- Additive differences
- Even balance is the reference point
- E.g.:
  - Turn taking
  - In-kind balanced reciprocity
  - Tit for tat; an eye for an eye, a tooth for a tooth
  - Even distribution
  - Matching contributions
The Conformation System of Equality Matching
The starting line for foot races at the ancient Olympics
Even turns, even chances
Mancala, played all over Africa & elsewhere

Mancala-like game, Nabataean, Petra modern Jordan, 1st century BCE to 1st century CE
Concrete Operations

Operational definitions of equality: procedures for ostensive balancing.
What is the neurocognitive system that supports Equality Matching?
What is the neurocognitive system that supports Equality Matching?

Speculation:
The subitizing, parallel individuation, multiple object tracking system:
Attends to one-to-one correspondence or difference;
Across sensory modalities visual, auditory, passive and active haptic;
Functions in non-human animals and infants.

Identifies whether this small set is the same as that, (and whether this is one or two more or less than that?)
Involving the right temporo-parietal junction
Market Pricing

Interaction mediated by ratios or rates – proportionality in social relations.
Market Pricing

- Interaction organized with reference to ratios, rates, or proportions.
- Prices, wages, rents, interest, tithes, taxes; cost/benefit analysis, efficiency; expected value and utility calculus, including utilitarian morality; proportional justice (e.g., sentencing, rewards).
- *Not* necessarily selfish, competitive, maximizing, individualistic, materialistic, voluntaristic, or contractual.
- Archimedean ordered field multiplication and division are meaningful; distributive law; every entity can be expressed as a multiple of every other;
- Ratio scale.
€92 each
$25/hour
4% annual interest
142% profit
10% tithe
28% income tax
kill ratio = 7:1
benefit/cost = 1.8
20 Year Conforming

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Tazewell Clock Repair.
Abstract, arbitrary, conventional symbols representing proportions and rates.
Communal sharing: indexical consubstantial assimilation

Authority ranking: iconic physical magnitudes

Equality matching: concrete ostensive operations

Market pricing: arbitrary symbolic conventions
The **conformation system** of a relational model constitutes the RM,
evokes the motivations,
elicits the emotions,
and invokes the moral commitments
that sustain, modulate, & regulate the RM;
is the medium of its communicative representation.
is the medium of its cognitive representation;
is the channel for the cultural transmission
of the local implementations of the RM;
conversely, is the medium in which children discover the
local cultural implementations of the RM.
Each RM operates in its own specific primary, natural semiotic-constitutive medium: its conformation system.
Children innately know the structures— the mod — of each RM.

They also innately know, are *looking out for* and naturally *attentive to*, are *responsive to* and *motivated by*, and intuitively *initiate* action in the particular *conformation system* of each mod.
Through the conformation system of the mod, children discover the cultural complements – preos – of each mod.

Children combine their innate knowledge of a mod with their innate awareness of, and desire to perform, its particular conformation system, so as to discover and deploy the cultural preos that are necessary to complement and complete the mod, forming a relational model.
The mod plus a particular set of complementary preos combine to make up a relational model that permits cooperative coordination of a specific aspect of a particular activity.
The RMs are innate but mostly empty of content; they are indeterminate.

To implement them, to coordinate social interaction, a RM requires cultural complements that specify

- when,
- with whom,
- with regard to what, and
- how

the RM operates to coordinate any given aspect of any given domain of sociality.
For example, in AR, people can be ranked according to their:

- age, gender, ethnicity, or any other personal attribute;
- education, profession, or social class;
- ritual office;
- prowess in war or sports;
- or any other kind of achievement.
• Use of a playground swing can be coordinated by any RM: to know which model operates, children need cultural prototypes, precedents, or principles.
• Suppose they know that use of the swing is governed by EM;
• They still need to know
  • what counts as a turn,
  • who is eligible to take turns,
  • who gets the first turn, etc.
- So meaningful social coordination requires
- innate understanding of the logical structure of 4 relational models
- in conjunction with, completed by
- cultural complements that specify who, what, where, when, and how each RM operates in each aspect of each domain of sociality.
Generativity

- The indeterminacy of the RMs and their completion by cultural complements makes it possible to use them to coordinate any aspect of any kind of social interaction.
- They are generative, culturally variable, and used in diverse ways to organize innumerable aspects of every domain of sociality within each culture.
• Hence a small number of RMs – just 4 – are sufficient for nearly all human sociality.

• Including the flexibility to invent unlimited new forms of social relations to adapt to changing environments and exploit newly created adaptive niches.

• Economizes on brain volume and cognitive capacity,

• Making it possible to be born though a human pelvis,

• And keeps the nutritional demands of metabolically hungry brain tissue limited to sustainable levels.
These four elementary relational models organize most aspects of social relations in virtually all domains of sociality in all cultures.

- Decision making.
- Transactions
  - distribution,
  - contributions,
  - exchange.
- Work.
- Moral judgments & emotions.
- Sanctions and redress.
• Political ideologies.
• Meanings of
  – time,
  – objects,
  – places.
• Social influence.
• Bases for constituting groups.
• Social identities.
• Forms of sexual relations and marriage.
• Social aggression & violence.
• and . . . ?