# Risk, Vulnerability and the Precarity of Identity

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# Giraffes & Tigers

"Being a giraffe is doing something: a giraffe is, quite essentially, an entity that is always making herself into a giraffe...this is what a giraffe's life consists in."



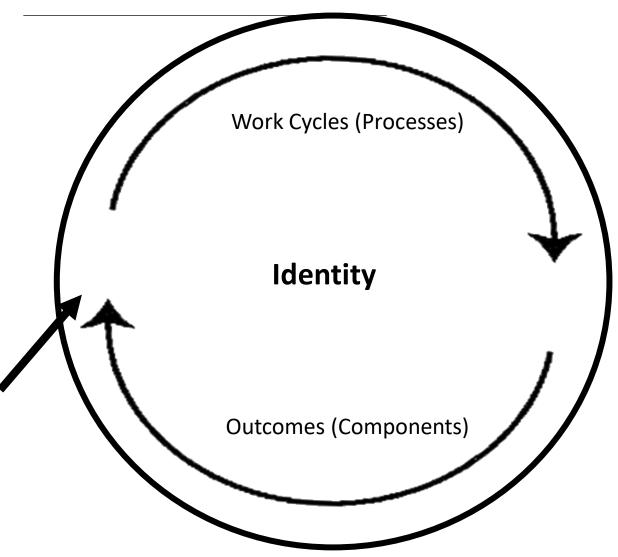
"A giraffe is a simple entity organized to keep a particular instance...of giraffeness going - primarily through nutrition - and also to generate other instances of giraffeness, through reproduction." - Korsgaard

# Self-Individuation

**Self-Production:** "A closed network of component processes realizes the relations that give rise to the production (or regeneration) of the same processes. To realize such relations, in the material world, implies establishing conditions by which flows of matter and energy present in the environment can be successfully used in the regeneration of the self-producing network." -Di Paolo, Buhrmann, & Barandiaran

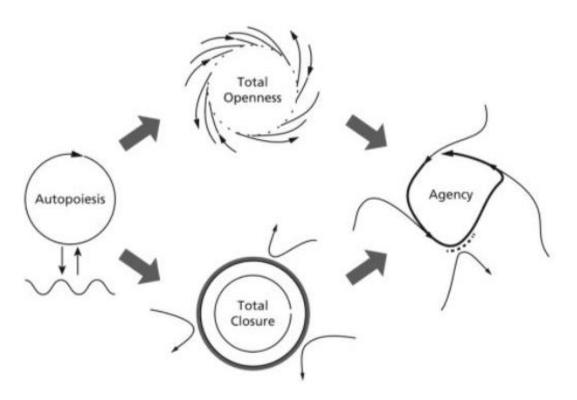
**Self-Distinction:** "The autonomous system actively constitutes itself as a well-delimited unity with specific topological relations (e.g., inside versus outside)." -Di Paolo, Buhrmann, & Barandiaran

# **Self-Individuation**



"Without organizational and operational closure – without, in other words, any circular and self-referential processes whose primary effect is its own production – there is no identity producing mechanism." – Evan Thompson

## The Primordial Tension of Self-Individuation

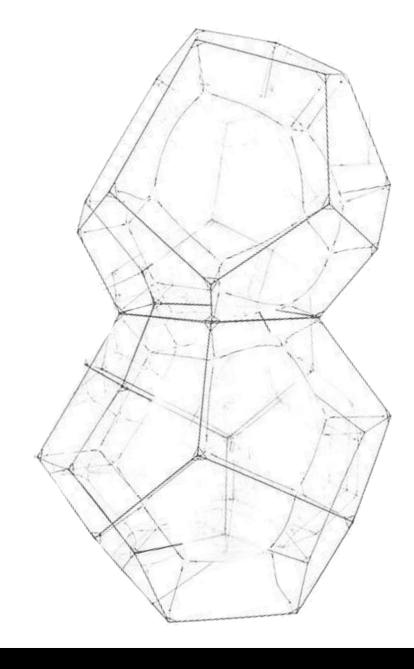


-Di Paolo, Buhrmann, & Barandiaran

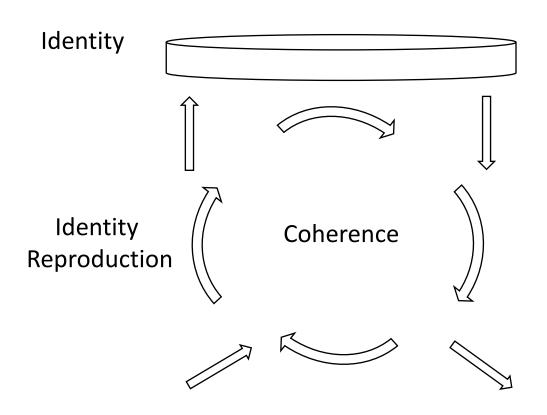
- In a state of total openness without self-distinction, all environmental flows contribute to self-production
- In a state of total closure and self-distinction, no flows contribute to self-production
- Through agency exercised by adaptive, asymmetrical regulation of coupling with the environment, some flows are accepted while others are rejected.

# Coherence

- The coherence of ongoing processes of identity reproduction
- Coherence is at risk (it can be lost)
- Coherence and adaptive capacity



## What we Place at Risk



"The system has to hang on to some aspects with a certain tenacity: not let go of them too quickly.

There is risk involved in this, of course. The system has to invest resources in this process. It cannot maintain everything; it has to select" —Cilliers.

# **Enabling Conditions for Self-Individuation**



- Input of materials needed to make the bridge
- Output of the bridge's construction
- Sustaining the use of the bridge
- Reproducing ourselves as a bridge company

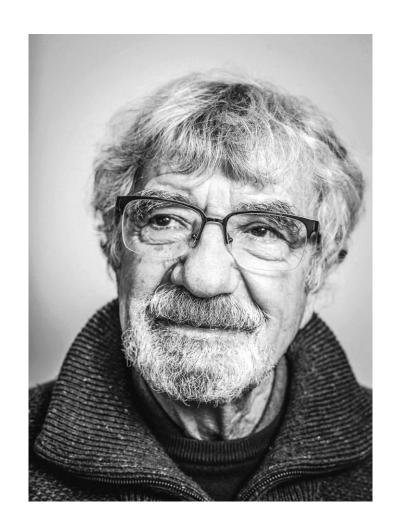
# Organization & Structure

**Structure:** "The structure of a system, which may change and whose modification may lead either to the preservation or the destruction of the organization of the system, refers to the components that constitute a composite unity as a special kind of unity. The structure of a unity makes this unity a singular case from a particular class of unities." —Maturana

**Organization:** "The organization of something, is, however, invariant. It refers to the relations between the components that let us recognize what class a composite unity or system belongs to." –Maturana

# Structural Determinism

"A structure determined system is a system in which all that happens happens as a structural change determined in it at every instant by its structure at that instant, regardless of whether this structural change arises in it in the flow of its own internal dynamics, or contingent on its interactions." — Maturana



## **Domain of Perturbations**

Interactions that trigger changes of state

## **Domain of Changes of State**

Structural changes without loss of class identity

## **Domain of Possible Disintegrations**

Structural changes with loss of class identity

## **Domain of Possible Destructive Interactions**

Interactions that trigger a disintegration

## **Domain of Robustness**

Possible interactions that trigger no changes or changes in operations

Because shocks are specific examples of variation in inputs, robustness can be interpreted as reduced sensitivity of outputs to shocks. –Anderies et al.

## **Domain of Transformation**

Possible interactions that can trigger changes in our identity and how we produce it

Transformation involves changing the state space of the system by the addition of new state variables or the loss of others. -Walker

### **Domain of Resilience**

Possible interactions that can trigger changes in how we produce our identity but not what our identity is

A measure of resilience is the magnitude of disturbance that can be experienced without the system flipping into another state or stability domain. –Holling & Gunderson

#### **Domain of Dissolution**

Possible interactions that trigger a disintegration in our identity and how it is produced

If the organization of the system is not conserved while its structure changes, the system disintegrates as a case of the original class and something else appears in its place. -Maturana

# Thinking Through Domains

- What hazards are we vulnerable to?
- How much can we withstand?
- How much can we change and remain the same?
- How much can we change before we no longer remain the same?
- What is beyond our transformative and adaptive capacity?

#### **Domain of Robustness**

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#### **Domain of Transformation**

Possible interactions that can lead to changes in our identity and how we produce it

#### **Domain of Dissolution**

Possible interactions that trigger a disintegration in our identity and how it is produced

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## **Core Terms**

**Risk:** "The likelihood of an event occurring multiplied by the consequences of that event, were it to occur: Risk = Likelihood X Consequence" (Coppola, 2015, p. 33).

**Hazard:** "Events or physical conditions that have the *potential* to cause....damage...interruption of business, or other types of harm or losses" (Coppola, 2015, p.32).

**Exposure:** "The measure of whether a person, building, population, or nation is likely to experience a hazard" (Coppola, 2015, p. 192).

**Vulnerability:** "Is a measurement of the propensity of an object, area, individual, group, community, country, or other entity to incur the consequence of a hazard" (Coppola, 2015, p. 33).

Unsafe Conditions: "Are the specific forms in which the vulnerability of a population is expressed in time and