



Violent Conflictualities, Vulnerabilities and Resiliences during the 2007-08 "Poly-Food Crisis"

Learnings from Complexity Approaches
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1. The 2007-08 "Poly-Food Crisis"

Brief Overview

Key Facts

- 49 countries hit by food insecurity of variable intensity
- 26 countries hit by food crisis (FAO, 2008) Afghanistan, Burundi, Central African Republic, Republic of the Congo, Democratic Republic of Congo, Ivory Coast, Ecuador, Eritrea, Ethiopia, Ghana, Guinea-Bissau, Haiti, Iraq, Kenya, Liberia, Lesotho, Mauritania, Moldavia, Uganda, Sierra Leone, Somalia, Sudan, Swaziland, Chad, Zimbabwe
- 15 countries have known 'food riots' (Cuesta et Barbet-Gros, 2014) Type 1 : Morocco, Mauritania, Senegal, Guinea, Mozambique, Burkina Faso, Cameroon, Yemen, Haiti, Egypt, Bangladesh, Tunisia & Type 2 » : Somalia, India, China
- 25 countries have known severe social disorders : Mexico, Zimbabwe, Uzbekistan, Pakistan, Indonesia, Afghanistan, Philippines, Argentina, The United Arab Emirates, El Salvador, Ethiopia, Trinidad & Tobago, Thailand, South Africa, Peru, Jordan, Kenya, Nicaragua, Myanmar, Honduras, Malaysia, Sri Lanka, East Timor, Vietnam
- 80 countries affected by weather shocks of variable intensity between 2006 and 2008 (Desbois, 2016)

An “Extraordinary” Event

- World commodities' prices increases were strong yet less than in 1974 in real terms (HLPE, 2011)
- But our collective representation of the problem failed to prevent the food crisis and its effects
- The crisis was both “a” and “poly” centered, global and at the same time hyper-contextualized
- Perhaps most importantly, it was fueled by a complex system of causal relationships (Morin, 1977; Desbois, 2016)
- “Ordinary Science” and its mode of producing knowledge such as measurable, probabilized, and predictable patterns and linear causality were defeated (Kuhn, 1962)
- Producing and sharing knowledge and information failed or was more difficult for people
- Much attention has been given to the last-mentioned problem by some specific Complex Approaches

The Problem of Producing and Sharing “Tacit Knowledge”

- The KEY problem for Hayek, Simon, and Ostrom
- It consists of understanding how people with bounded rationality:
 - compute, share and externalize the available but “fragmented” information and knowledge to solve in the most satisficing way their adaptation problems in a complex and unpredictable environment
 - design heuristics they need
- Nonaka et alii (1995 [2001]) proposed to formalise that in their Dynamic Process of Knowledge Creation Scheme
- Briefly summarized, they thought that after computation of information, people converse “tacit” knowledge into “explicit” and shared knowledge through analogies and metaphors

Conclusion

- The different characteristics of the crisis led us to describe what happened in 2007-08 as a "poly-food -crisis"
- The concept originally developed by Edgar Morin (2011) was adapted to our field of research
- Yet the two concepts have in common the same diagnosis of a crisis of knowledge in its twofold dimension, "tacit" and generic (Morin, 1977; Desbois, 2016)



2. Violence as Meta-Heuristics of Substitution

The Question of Producing and Sharing Knowledge in “Pathogenic” Contexts

Process "in Crisis" vs "Pathogenic Process"

- The key role played by contextualisation was highlighted by many works (Ostrom, 1990; Stern et alii, 2002) and recently (HLPE, 2011)
- The following results are based on a "semi-empirical" analysis
- A cross-checking of the available data:
 - country-typologies (Demeke et al, 2009; Jones et Kwiecinski (OCDE), 2010; Brian, 2013)
 - country-surveys (Kenya, Mozambique, Guinea, Burkina Faso, etc. from IRIN, Brito et alii, 2014)
 - a country-typology we especially created facing policy-mix of 18 countries split into 3 groups (Desbois, 2016)

Two Main Types of Contexts

- LDC, net importers, severely hit by the commodities price increase, having known food riots as Egypt, Tunisia, Ivory Coast, Cameroon, Senegal, Mauritania, Haiti, Bangladesh;
 - Countries Members of The Cairns Group who have known severe social disorders as Indonesia, Philippines, Thailand, South Africa;
 - Countries who set up import restrictions or prohibitions, having known either food riots or social disorders as China, India, Indonesia, Cambodia, Ukraine, Vietnam, Egypt
- The work proposed made it possible to identify two main types of contexts:
 - the one where the (individual or collective) mode of production and sharing knowledge was "in crisis"
 - the second where it was what we called 'clearly' "pathogenic" (Desbois, 2016)

The Two Characteristics of the Contexts "In Crisis"

- 1. A low or very low level of interpersonal trust** worsened by many social dilemmas (Arrow, 1974; Laurent, 2012) rooted in the "bounded rationality" as a result of "fragmentation" and dispersion of the information
 - 2. A high or very high level of mistrust or institutional distrust.** The feeling people have that institutions are corrupt and inefficient combined with a latent sense of injustice help social dilemmas to increase
- Egypt, Cameroon, Ivory Coast, Senegal, Madagascar, Haiti, Bangladesh, and Tunisia (except for corruption) (WGI, 2006-09)
 - But also Philippines, Indonesia, Vietnam, Ukraine, Cambodia
 - Countries concerned: LDC net importers but also Cairns Group Members
 - But in the second group, lack of control for traders and wholesalers was weaker whereas quality of policy-mix undertaken to mitigate effects of the prices increase were more efficient
 - Indonesia was a special case because of high quality of policy-mix during the period

The "Pathogenic Process"

- Type of context where violent conflictualities became meta-heuristics of substitution for people (individual or groups) instead of adaptative and cooperative/altruistic heuristics and strategies producing, in some cases, "explosives conjunctions" (Debray, 1983; Desbois, 2016)
- Egypt, Cameroon, Ivory Coast, Senegal, Madagascar, Mauritania, Haiti, Bangladesh, Kenya, Guinea, Mozambique
- In some cases, countries have not known 'food riots' (Kenya for instance)
- The term of "violent conflictualities" is borrowed from Burke et alii, who however preferred the expression of "violent conflicts" (2015). It refers to:
 - 1) **ideological violence** such as inter-ethnic clashes (added by us)
 - 2) **inter-groups conflicts** such as drought clashes
 - 3) **inter-personal conflicts** such as crimes, rapes, thefts, lootings, committed by civilians or/and military forces during food riots
 - 4) **Intra-personal conflicts**, such as PST, mental disorders, after natural disasters, interruptions to AIDS treatments, transactional sex, etc.

The Others Features of "Pathogenic Process"

1. Rationality is more than bounded but now "particular" within the meaning it shaped by a constant, compulsive and spontaneous, context of violence (Welzer, 2008). Rationality is also pragmatic, practical and reductionist combined with blocking of perception and a-perception functions (Vautrelle, 2009)
 2. That specific rationality contributes to weaken the number and the quality of social interactions. This is done through adiaphorization (Z. Bauman in Lyon, 2010); reciprocity denial (Vautrelle, 2009); and escapes from face to face situations however essential to communicate efficiently
1. Violence has for effects people's perceptions be confused. Informational stimuli essential to move in "micro-situational" space could be disrupted, installing situations of "escalation process" made people alone with themselves (Welzer, 2008)
 2. Violence is not only caused by internal stresses in association with external stresses but also shaped by the face to face with complex causal chainings made environment more unintelligible and unforeseeable (case of social natural disasters mentioned by Welzer, 2008)

Risk Factors of Increased Vulnerability to Violence during the Food Crisis (2006-08)

1. commodities prices increased above a sort of "psychological" threshold in some countries, for instance LDC net importers (Lagi, Bertrand, Bar-Yam, 2011)
 2. fuel shortages in African producers countries such as Cameroon and Nigeria
 3. strong feeling that authorities do not want anything to do with daily sufferings endured by people. In many LDC, combined with inefficiency, the contempt was experienced as a denial to their "right to live" at the core of the "subsistence pact" (Clément, 1999, and case of Senegal)
1. underlying feeling of exclusion combined with a "crisis of the reciprocity" (case of Mozambique, Brito et alii, 2014)
 2. extraordinary and very impressive weather shocks on the period 2006-08 with effects that last more than expected (Desbois, 2016)
 3. use of new technologies of communication (Pierskala et Hollenbach, 2013)
 4. policy-mix mainly based on reaction to the price increase, not balanced, at best partially efficient (Desbois, 2016)



3. The Interfaces Vulnerabilities-Resiliences

Challenges for Design

Short Remarks To Introduce

- In 2011, the World Bank called to fight against political and criminal violence considering it represents a major yet largely ignored obstacle to development (WDR, 2011)
- But it recognized not to have sufficient consolidated scientific literature about violence to build a sound background to help it (with the exception on the one studies the link between violence and institutions)
- To restore trust and set up sound institutions, it recommended that all countries concerned by violence implement policy frameworks focused on institutional resilience
- We proposed to consider the problem differently in learning from approaches by complexity
- The process of production and sharing knowledge is for us the top issue to challenge for who wants to prevent the negative effects including violent conflictualities of the "poly-food crisis"
- This way of thinking raises a number of issues of interest including the fact to consider violence as a rational meta-heuristics of substitution

Two Learnings

- Where the process of production and sharing knowledge is "in crisis" (prevalence of psychosocial factors), frameworks focused on improving or restoring trust could be efficient
- Learnings from complexity approaches: But it would be of value to improve the quality of communication to reduce uncertainties; to make more evident the exchange value of information; and to improve the quality of the policy-processes
- Where the process is "pathogenic" (prevalence of mental factors combined with psychosocial factors), the solutions proposed by the World Bank but also complexity approaches are not relevant
- We think it would be better to implement psychological resilience" programs 'repairing' mental skills (strongly) altered by factual/undeniable violences and their impacts on people's perceptions on themselves and others

Challenges for Design

- Return to a tradition today neglected: economics as “a science of design” (Simon, 1969)
- I propose to design two main types of interface taking as a base the process of production and sharing knowledge as the common ground of vulnerability and resilience
- The process could play the role because: 1) it is a key factor of vulnerability, especially in “pathogenic” contexts; 2) and at the same time the key factor of resilience
- Interface has the interest of underlying the understanding of processes rather than their measurement or quantification through socio-economic indicators
- It is based on individuals (or groups), the driving force of change and creativity, and avoids the trap of rhetoric (Ostrom, 1990)
- It regards as less significative the role of institutional factors

Interface VR "In Crisis" Contexts

➤ Mode of Production and Sharing Knowledge

- Process made it more complicated by the collective perception (crisis of trust) worsened by the (very) low quality of policy-mix

- Increased social dilemmas in situations of information asymmetry and "fragmentation of knowledge"

- There are no guarantees that the "subsistence pact" be respected. In some cases, "right to live" and "right of property" continue to be guaranteed

➤ Types of Conflictualities we observed

- Prevalence of psychosocial factors

- Distrust very common combined with a strong feeling of unequal access to food

- Social disorders and food riots (Type 2, more rarely Type 1)

- Risks of intra-personal conflicts/ inter-groups (low)

- Ideological violence (low intensity in the triggering of the food crisis)

- New technologies (aggravating factor)

Interface VR in "Pathogenic Contexts"

- **Mode of Production and Sharing Knowledge**
 - Violence as a rational meta-heuristics of substitution
 - Key role of the psychic or mental breakpoints
 - "Subsistence pact" not guaranteed (collective perception of a "right to live denied or threatened")

- **Types of Conflictualities we observed**
 - Prevalence of mental factors in interactions with many psychosocial factors
 - Food riots (Type 1) with severe social disorders
 - In urban areas, "crisis of the reciprocity", and in rural areas, crisis of the subsistence and transactional sex
 - Inter-personal violence (lack of data, studies focused on inter-groups conflicts, but less important than presumed)
 - Ideological violence real but very localised (Kenya)
 - Role of new technologies ?
 - Intra-personal violence (lack of data/impacts of extreme weather shocks ?)

About Psychological Resilience

- We need to build not a single framework but many frameworks adapted to the different contexts including "micro-situational" contexts
- Long, hard work, significant cost, we need to identify all the "specific-context" heuristics (Ostrom, 2011) and metaphors and analogies made their conversion possible
- a major challenge: no common denominator. Scientists generally agree with the idea that one could be restoration of skills or capacities to elaborate mentality (O. Fenichel, 1945, in Louis Crocq, 1999). Psychological resilience aimed at making possible for people to live with them traumas
- Yet the problem highlighted by the "poly-food crisis" is not exactly the same. Rationality became "particular" and takes the form of a rational meta-heuristics of substitution...

Thank You !

- **The final version of my dissertation (PhD)**
- DESBOIS, Jean-Marc. F. A. Hayek et Herbert A. Simon : la contribution de deux approches par la complexité à l'élaboration d'un corps de connaissances et d'outils utiles dans l'analyse et la prévention des "poly-crisis" alimentaires. L'exemple de la crise alimentaire de 2007-2008. Economies et finances. Université Panthéon-Sorbonne - Paris I, 2016. Français. ⟨NNT : 2016PA01E039⟩. ⟨tel-01805067⟩
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