



Introduction

Pesticide regulations do not follow a linear path. Pesticide regulations were devoted to improve food security with the Green Revolution in the seventies. Then, gradually, the technical limits of agricultural productivism and rising environmental concerns provoked a switch in the commonly accepted beliefs that productivism was flawless (Patel, 2013). In this paper, we combine the cognitive and behavioral sciences (Beck, 1991) with the New Institutional Economics (North, 1991, 2010) to understand the process of pesticide regulation.

Mat & Methods: the central role of psychology

We use methodological individualism to link the micro and macro perspectives (Weber, 1922). Cognitions, beliefs, intentionality, psychology are at the roots of economics and specifically to the New Institutional Economics. We propose to add coherence to the cognitive dimension of institutional change with the cognitive triad.

Results. A new lecture for pesticide regulations: From congruence to cognitive dissonance with the rise of environmental concerns

The 3 major aspects (Fig.1.) of the cognitive triad are 1) the universality of emotions, 2) the need to recognize the emotional virtues of conflicts versus violence, and 3) the bidirectional relations between emotions, cognitions, and behavior (one affects the others and vice versa).

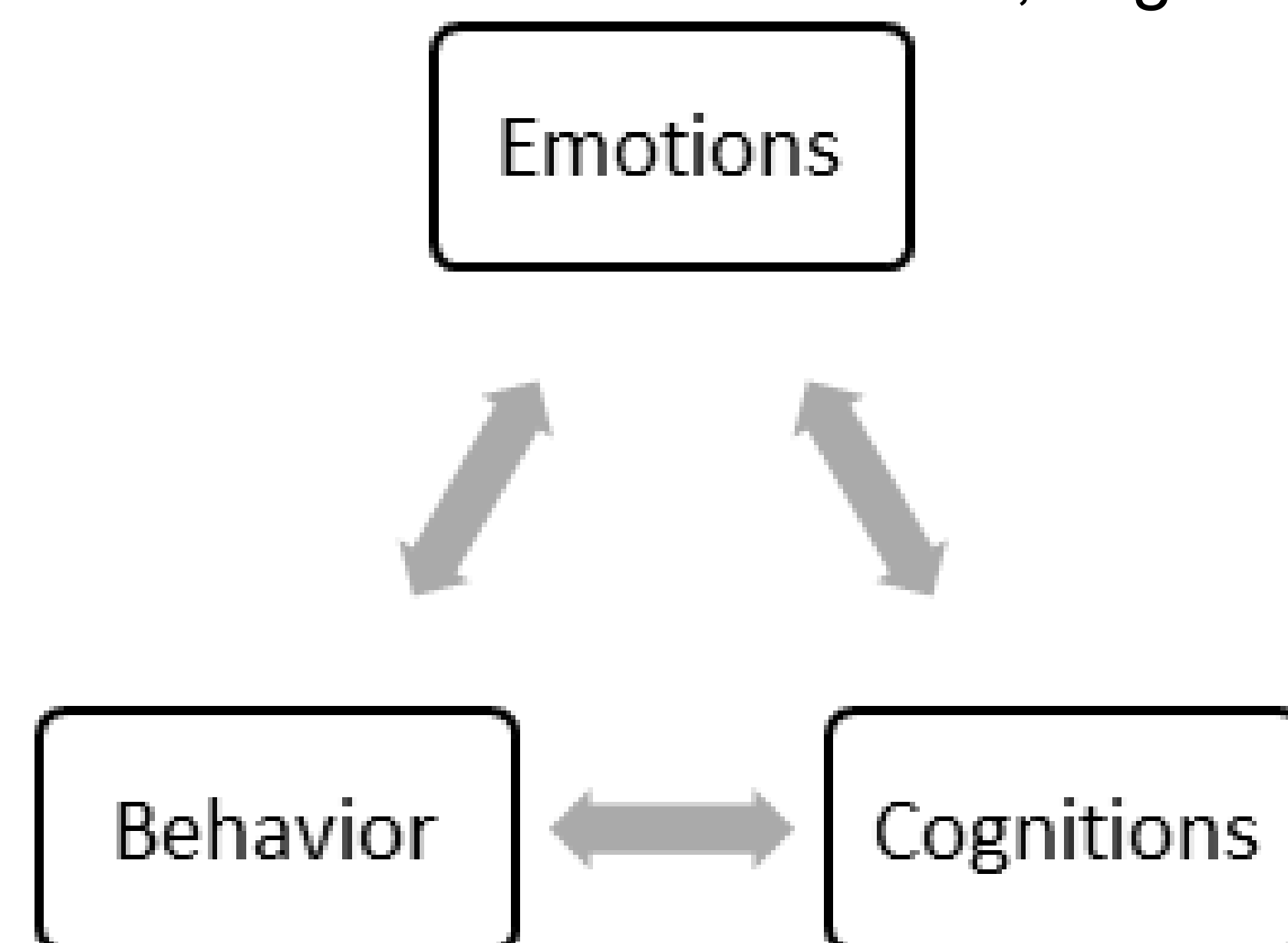


Fig. 1 The cognitive triad (Beck, 1991).

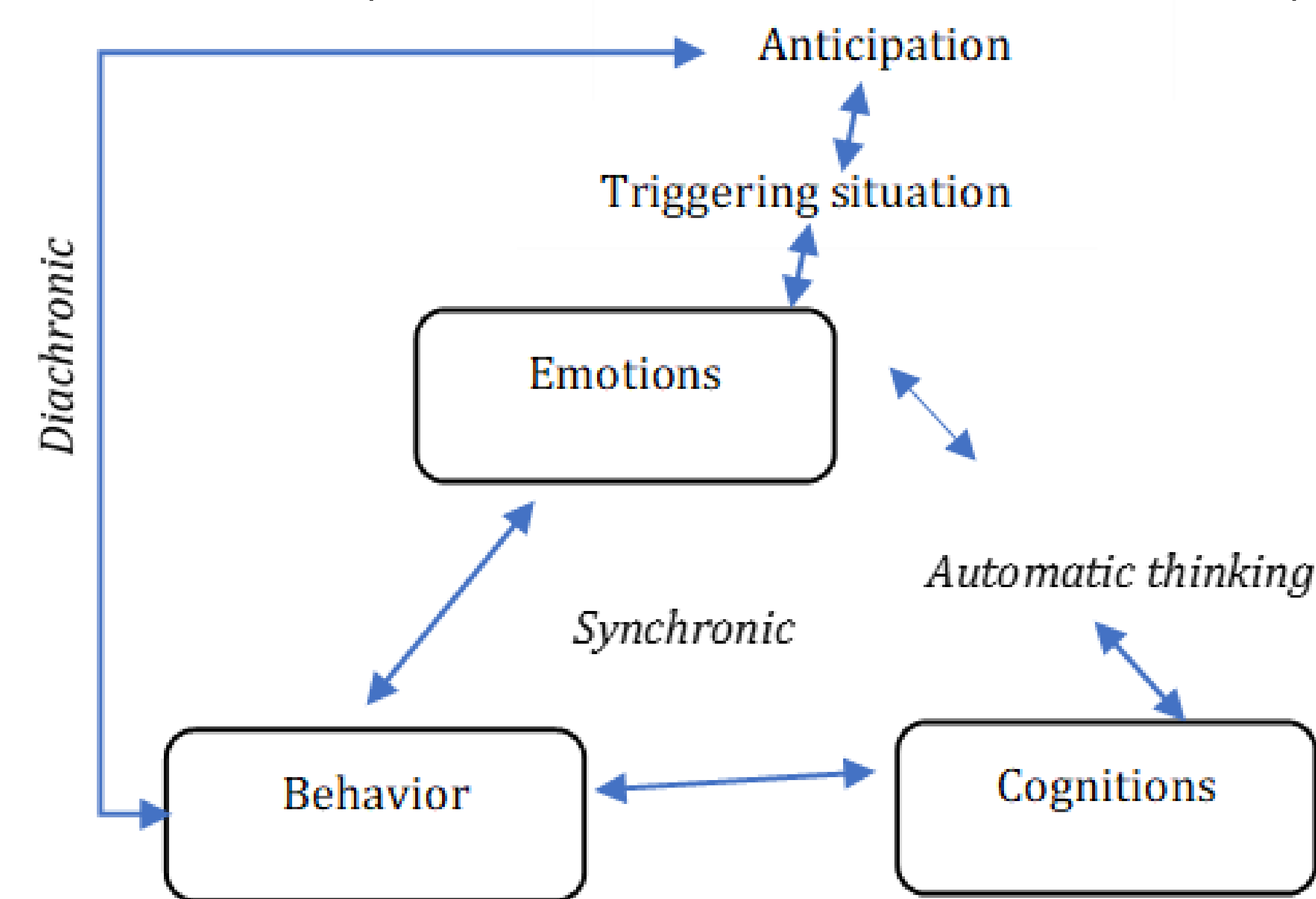


Fig. 2 The dynamics of the cognitive triad (Fontaine and Fontaine, 2011).

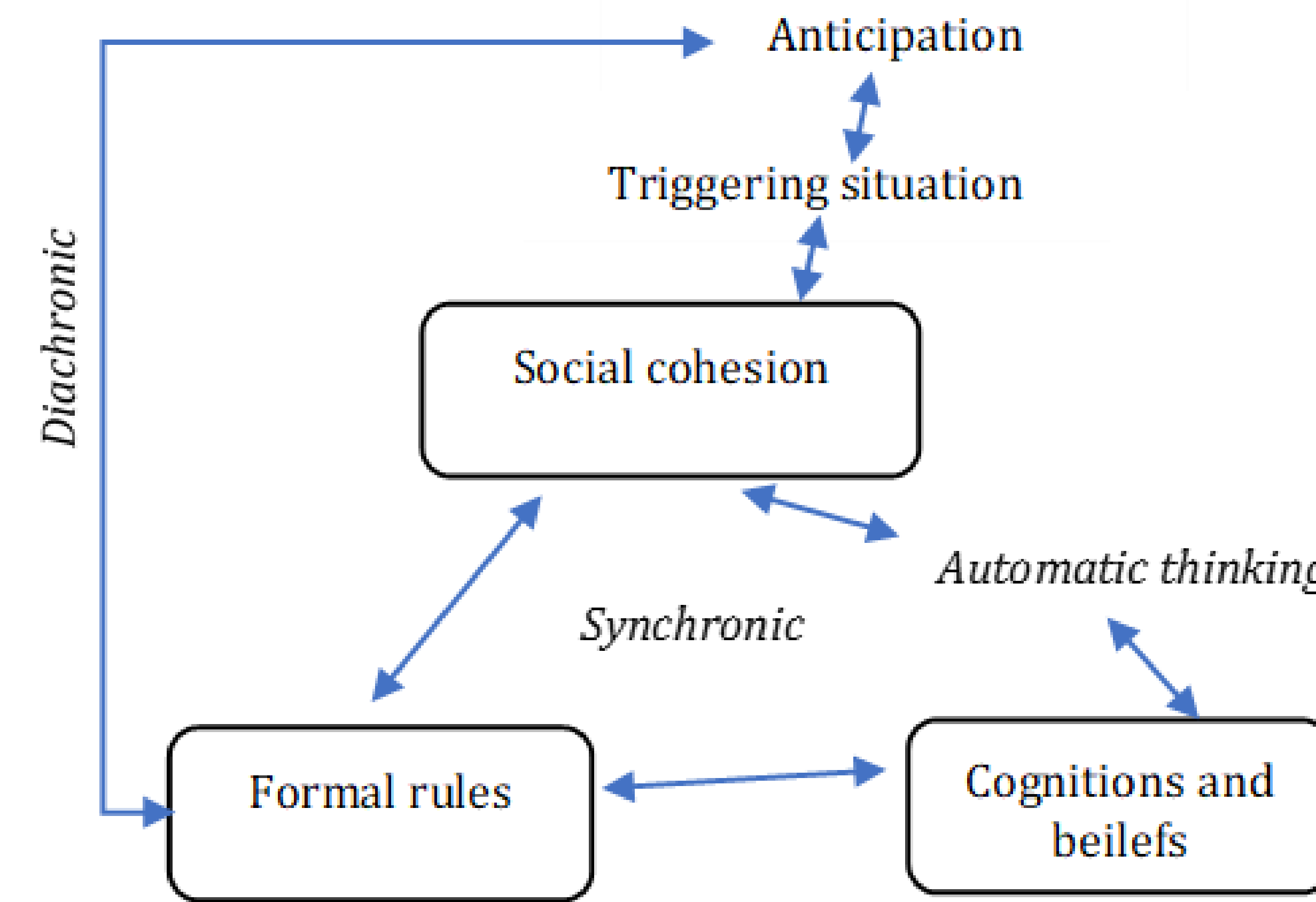


Fig. 3 The dynamics of the institutional triad, adapted from Fontaine and Fontaine (2011).

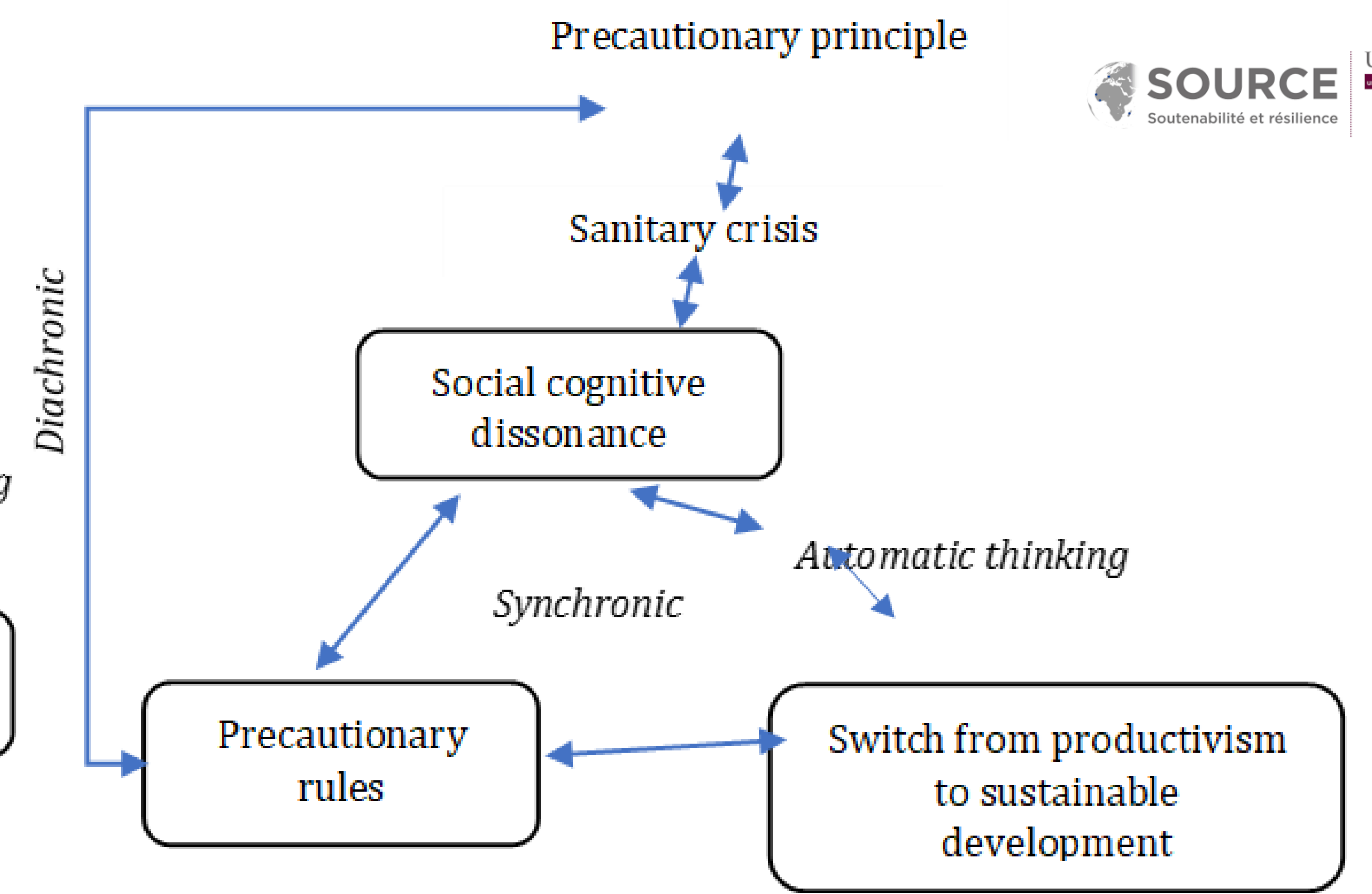


Fig. 4 Institutionalizing the precautionary principle with the cognitive triad.

Fig. 4. A sanitary crisis such as a report on the detrimental of synthetic pesticides on human health, triggers a simultaneous social cognitive dissonance among the civil society because a contradiction, an imbalance, appears between the beliefs about the virtues of productivism - as they were advocated - and a rising awareness of environmental degradation. The civil society supports formal rules to implement a precautionary principle (e.g., in favor of organic food or synthetic pesticide restrictions). The precautionary principle acts as a driver for anticipation.

Conclusions and perspectives

Emotions, through cognitive dissonance, were a major factor for change as they drove the gradual cognitive switch. Cognitions, behavior and emotions interacted permanently and evolved from one temporary equilibrium to another. Put simply, a large part of what was considered as normal before is not anymore; and inversely, a large part of what was considered as abnormal before is now considered as normal. The process of change of public policies can therefore be a matter of understanding the processes underlining the cognitive triad in human decision making. This framework offers challenging interdisciplinary opportunities and renews the ways we understand institutional change for sustainable development.

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