

On the distinction between distinction and division

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Abstract

In this article I discuss the use of distinctions as a method for reasoning. First I trace the role of distinctions in three different theories: the formal calculus of George Spencer Brown, the constructivist biology of Humberto Maturana and Francisco Varela, and Niklas Luhmann's theory of social systems. In the second part, play is used as an example to illustrate the concept. In particular, I contrast walking through a series of distinctions with traditional ways of argumentation based on definitions. Finally, I hint at the role of distinctions in a metaphysical sense.

Keywords

distinctions

radical constructivism

systems theory

epistemology

game studies

play

Introduction

The phenomenon of division,¹² whether between the ‘two cultures’, between body and mind or between analytic and synthetic thinking, evokes the image of a rift: two or more conceptual entities separated by a void, a negative space. On the opposite we find integrative, holistic and contextual approaches: no rift or void, but unity and identity instead. In this paper, I propose a ‘third way’ of thinking, based on difference-oriented approaches at the core of the formal calculus of George Spencer Brown, the constructivist biology of Humberto Maturana and Francisco Varela, and Niklas Luhmann’s theory of social systems.³ In particular, I argue that drawing distinctions facilitates trans-disciplinary thinking, helps overcome the trap of definitions, and encourages us to engage in a ‘play of differences’ (Derrida 1973).

Draw a distinction (George Spencer Brown)

‘The theme of this book is that a universe comes into being when a space is severed or taken apart’. George Spencer Brown’s book *Laws of Form*, published in 1962, begins with an ontological statement. In the course of the text, the reader is guided through a series of instructions, starting with the directive ‘draw a distinction’. The result is the construction of a formal calculus with applications in logic and mathematics.

By drawing a distinction and indicating one of its sides, two states are created, one of which is marked while the other remains unmarked. From that basic operation, Spencer Brown constructs a calculus that is equivalent in power to propositional logic. However, both the directive character and the principle of distinctions feel quite different than the canonical calculi of George Boole and Gottlob Frege. The latter are building conjunctive, disjunctive or implicational structures from binary values by connecting propositions with logical junctors. In the calculus of indications, however, an abstract logical space is divided by the creation of distinctions, naming and subsequent crossing. A crucial quality of distinctions is that they do not resist overcoming them. Just the opposite: the token that signifies the distinction is an invitation to cross the distinction.

To observe is to distinguish (Radical Constructivism)

How do we perceive the world? At the latest since Descartes, the fundamental epistemological question has gained more and more significance, nourished by growing doubts about the existence of an objective reality. From the 1960s, a school of thinking emerged under the label 'Radical Constructivism', represented by Ernst von Glasersfeld, Heinz von Förster, Gabriel Stoltzenberg and others. Central to their philosophy is the assumption that any contact with reality is necessarily a construction by observing minds. Common themes in constructivist thinking are evolution, self-organization, complexity, cybernetics, systems and the prominent role of biological thinking.

The Chilean biologists Humberto Maturana and Francisco Varela developed their constructivist biology in the 1970s. Their research suggested that experience is not a passive act, but that the perceiving subject is actively constructing its objects of perception. Moreover, biological systems are constantly (re-)constructing their own elements, including the organization of their sensory apparatuses (autopoiesis).

For Maturana, the assumption of a given 'objective reality' cannot hold. This concept needs to be replaced by an epistemology that includes the observer. Variations of this principle have come up in various other contexts, such as the observation principle in quantum physics or in Gadamer's hermeneutics. But if reality is constructed by an observer, her internal structure must delimit what she can and cannot experience: this is the postulate of structural determinism. The capacity to distinguish a light/dark boundary, for example, is built into the

retinal cells. Their structure, developed through an evolutionary process, determines what can be seen and therefore experienced.

If reality is constructed by organisms individually, though, why are large parts of it apparently compatible between individuals? One part of the answer lies in the principle of structural determinism, the other part in the process of interpersonal reinforcement. Achieving coherency both in observed behavior and in explanations⁴ requires communication.⁵ Although Maturana and Varela apply their epistemology far beyond biological systems, psychic and social systems share an important characteristic that requires systematic theoretical treatment: the production of meaning.

Distinctions create meaning (Niklas Luhmann)

The constructivist issues regarding communication and meaning were addressed in Niklas Luhmann's systems theory, notably with the publication of *Soziale Systeme* in 1984.⁶

Luhmann's theory distinguishes itself from other systems theories as follows:

- It is based on distinctions instead of identities. In particular, Luhmann incorporates George Spencer Brown's concept of distinctions as the fundamental operation of observation.
- The relevant distinction for a system is not the one between system and element but that between system and environment.

- Systems are operationally closed, which means they operate autopoietically by re-constructing their own elements.
- Luhmann distinguishes between biological, psychic and social systems and he himself focuses on the latter. Biological systems operate with transcription of DNA, transport of pheromones and activation potentials, psychic systems with thoughts, intentionality and meaning. Social systems communicate.
- Examples for social systems are: a discussion; a mailing list; a scientific publication including its production, dissemination and reception; a research group; a religious community; art; economy; law (as subsystems of society), society.
- A system is complex when it cannot actualize each of its elements simultaneously; some of them have to be potential. Meaning is construed as the medium in which a system can observe the distinction between actual and potential. This distinguishes psychic and social systems, which operate with meaning, from biological ones, which do not. An illustration: in an ongoing conversation (a social system), two minds (psychic systems) are involved, yet they are neither elements nor subsystems; they are located in the environment of the conversation instead. Yet these systems are structurally coupled: if one of the minds stops operating, the social system ceases to exist.⁷

A general theory of (social) systems constitutes a (social) system itself, and therefore the theory must provide sufficient complexity to observe itself – with all the possible paradoxes

and theoretical problems such as the question of ontological genesis that follow. Luhmann's theory not only acknowledges that assumption, it is constructed on its premise: the theory observes itself through distinctions.

This concludes the discussion of distinctions in the context of a formal calculus, constructivist biology and social systems theory. In the following part I will abstract from these theories in order to operationalize distinctions as a tool of enquiry about play. But first I want to motivate my approach by looking at the subject through the lens of definitions.

What 'is' play?

A group of children is tossing a ball back and forth on a public playground. An intense match between two chess grandmasters is coming to a close. Two dogs are simulating a fight while carefully avoiding hurting each other. These are all situations that can be characterized as play. But what is the meaning of 'play'? As Wittgenstein pointed out for the related term 'game', the meanings of a word resemble each other in the way families do: one can identify common traits among the members but there is no way to find precise definitory boundaries.

Yet humanities and sciences have been wrestling about definitions and explanations for 'play' for quite some time. Possible explanations about why humans and animals play range from a surplus of energy, instinct, task compensation, relaxation, catharsis, assimilation, self-expression and social necessity to psychoanalytic accounts, the pursuit of optimal levels of stimuli and arousal and exercising competence / effectance.⁸ Two hypotheses from the field of learning theories, namely, motor training and preparation for unexpected situations, have been

substantiated experimentally (Pellis et al. 2010); however, the subjects of research were rats, not humans. In the light of this multiplicity of theories, how can we even account for contributions from the humanities like Schiller's Spieltrieb, the magic circle of Huizinga or Caillois' categories and polarity of games?

Sutton-Smith, the eminent game theorist, came to the conclusion that despite all definitory efforts, play remains inherently ambiguous. His answer to this challenge was to cast play in terms of cultural rhetorics: Progress, Fate, Power, Identity, Imaginary, Self and Frivolity. For Burghardt, the scientific practitioner, who was explicitly interested in a working definition of play, this approach 'does not solve any real issues about play' (2005 : 9). One can almost feel the wall of despair standing between the sciences and the humanities.

A possible remedy for the situation, suggested by Henricks, would be to classify the wide variety of meanings that is attributed to 'play':

- Play as a certain activity
- Play as a pattern of behaviour
- Play as a spirit towards a behaviour (playfulness)
- Play as an individual action
- Play as a pattern of interaction between multiple players
- Play as quality of experience.

While this analysis can be considered helpful for further sorting the various definitions and explanations into categories, the underlying philosophy remains within the general framework of identities. This starts with the identifying questions 'What is play?' or 'What is

its function?’ and continues by producing contradicting or incommensurable answers that are competing for the truth. Paradoxically, identity-seeking approaches lead to fragmentation and division.

Playing with distinctions

As an alternative approach, I suggest employing distinctions in place of identities. To demonstrate the idea, let me start to play with play and distinctions as follows. Say I am interested in the conceptual difference between play and work. What is play as opposed to work? I first create the distinction (D1), and then I mark the side of play: play \ work.⁹ Now I have many but not arbitrary possibilities to continue in a way that produces meaning.¹⁰ I could stay on the side of play and distinguish play through the lens of ethological research from play in human culture (what does the distinction play \ work mean for animals as opposed to humans). Alternatively, I could ask about the situation of a chess player in a paid tournament. Is this play or work? To do this, I would probably introduce the distinction of paid vs unpaid play and I could speculate about the relationship between play and the economical system. I decide to cross over to the side of work and ask what makes work different from play (D2)¹¹? Work is supposed to have a purpose outside of itself. Again, there are multiple possibilities at this point. I could question that distinction and draw a distinction between work with an external purpose and non-purposeful work. Can there be work without purpose? I decide to cross back into play instead and use the distinction external purpose / no external purpose there (D3). Here I notice that historically art has also been characterized as having no purpose

aside from an intrinsic value (l'art pour l'art). Therefore, I draw a new distinction: play \ art (D4). There are ongoing debates about the relationship between play and art: sometimes, but not always, play has been accepted into the art system (Schrank 2014). To look closer into this relationship I would continue the investigation by drawing a distinction between play and games (D5). Many other continuations are possible.

The only requirement to set the procedure just outlined into motion is to follow Spencer Brown's request 'draw a distinction' and continue from there. Some of the distinctions that may be visited in the example of play are:

- Play \ Work
- Play \ Purpose
- Playful \ Serious
- Playful \ Real
- Play \ Fun
- Dark Play \ Play (Mortensen et al. 2015)
- Play \ Flow (Schrank 2010)
- Playful Play \ Play (Bateson and Martin 2013)
- Play \ Game (free play versus playing a game with rules).
- Games \ Art (Schrank 2014)
- Play \ Rigidity: 'Play is free movement within a more rigid structure' (Salen and Zimmerman 2003).

I want to point out that the choice of the initial distinction is both crucial and unimportant at the same time. On the one hand, it is crucial because it determines the space for the series of distinctions that follow. On the other, it is unimportant because we can start over from another arbitrary distinction. One might be tempted to construct a definite binary code that determines the subject, such as play \ work,¹² but this is not the point of this exercise.

Rather, my goal was to show the versatility of this approach for walking through conceptual spaces, and I would encourage the reader to construct their own conceptual paths through the lenses of their own distinctions. If we could appreciate the pluralism of theories, definitions and ideas simply by drawing different distinctions and generously crossing them while acknowledging the role of the observer, these concepts could truly come alive.

Summary

‘In the beginning, God created the Heavens and the Earth’. Christian mythology starts with a distinction. We can analyze the primary creation in the same way we did above with play:

- | (creating the distinction)
- heaven \ (creating heaven by marking one side of the distinction)
- heaven / earth (creating earth by crossing the distinction and marking the formerly unmarked space)

When the first distinction is set into motion, the others follow in the same vein. Are distinctions possibly the ultimate unifying trait of the universe in the way it incessantly produces them – through physical processes, biological observers, minds and social systems? We can disagree, but that would immediately construct another distinction: we cannot escape. Let us embrace instead the motive of Lila that is found in Indian mythology, the all-encompassing principle of play spanning the whole cosmos. If everything is Lila, we have reached a playful and undivided mind, albeit one that is still playing with distinctions.

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Notes

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³ Other theoretical approaches that emphasize difference of identity (Heraklit, Bateson, Foucault, Leibniz, Sussure's structuralist linguistics and Derrida's play of Differances) have to be omitted from the present discussion.

⁴ Maturana distinguishes the description of a system as a whole 'from the outside' (observation) from the description of the inner workings of a system (explanation).

⁵ However, in contrast to the theory of Social Constructionism (Berger and Luckmann 1990), Radical Constructivism does not presuppose society. For a detailed discussion, see Raskin (2002).

⁶ The first publication in English appeared in Luhmann (1996).

⁷ This applies correspondingly to the biological systems (brains) that are located in the environment of the mind.

⁸ Many of those approaches are summarized in Sutton-Smith (1997), Burghardt (2005) and Henricks (2008).

⁹ I am using the following notation for distinctions loosely based on George Spencer-Brown's token: $a \setminus b$ denotes the observation of a , that is, to draw a distinction and mark the side of a . Then a / b is the observation of b and $a | b$ is the observation of the distinction itself.

¹⁰ For example, the distinction between honey and maple syrup, while fulfilling the criteria for a proper distinction, would make no sense here, and communication within many social systems would risk severe irritation and a possible breakup. However, the boundary between meaningful and meaningless itself is not clear-cut. For example, it can be discussed whether the analysis of play as a structurally neo-liberal activity (Nash and Penney 2015) is meaningful or rather one that signifies maple syrup and honey.

¹¹ If it were the case that 'distinction' were a symmetrical or anti-symmetrical relation, then (D2) could be expressed in terms of (D1). However, this is not the case because we are now observing the other side of the distinction (D1), which is operating with different distinctions.

¹² Luhmann postulates that established systems use binary codes (Leitdifferenzen), for example subsystems of society politics (power | no power), science (true | false) and economy (to pay | not to pay).