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Digital transformation of social theory. A research update

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ABSTRACT

This article outlines the basic design of digitally transformed social theory. We show that any digital world is created by the drawing and cross-tabling of binary distinctions. As any theory is supposed to be concerned with truth, we introduce to and insist on the distinction between true and false distinctions. We demonstrate how flexible matrix-shaped theory architectures based on true distinctions allow for the reduction and unfolding of the entire complexity of analogue social theories. The result of our demonstrations is the idea of a theoretical *Supervacuus*. The social equivalent of a universal Turing machine, this supervacuous social theory is virtually empty as it is based on only one proper theoretical premise (the idea of distinction [between true and false distinctions]), and therefore able to simulate all other social theory programmes. We conclude that our digitally transformed social theory design is particularly useful for observations of a digitally transformed society.

> "I am counting up the value of subsistence
> from what is quiet calm and just binaric
> we are living in numerical series
> things remain in line, understand
> things remain in line until the end".
>
> (Deine Lakaien, *One Minus One*)

1. Digital transformation. The world as bit and tabulation

Insofar as the digital transformation is associated with computers, digital transformation is a matter of tabulation. Whether these computers are abstract, mechanic, or electronic machines is of secondary importance, as Alan Turing (1995, p. 390) highlighted in his *Lecture to the London Mathematical Society on 20 February 1947*:

> "From the point of view of the mathematician the property of being digital should be of greater interest than that of being electronic. That it is electronic is certainly important because these machines owe their high speed to this, and without the speed it is doubtful if financial support for their construction would be forthcoming. But this is virtually all that there is to be said on that subject. That the machine is digital however has more subtle significance."

The subtle significance Turing attached to binary digits owes to their universal applicability. First, digital machines can compute numbers of any size to any degree of accuracy. Second, these machines are not limited to any scope of problem. Whatever the hardware, it is thus their binary architecture that turns digital computers into universal machines.

The basic principle of these universal machines is the translation of symbols into or from binary code (Turing, 1937, p. 232), and the often-implicit principle behind this operation is that of tabulation. This holds true also for the legendary early forms of digital computing, which, for example, "shall be performed thus: First, let all the Letters of the Alphabet, by transposition, be resolved into two Letters only; for the transposition of two Letters by five placings will be sufficient for thirty two Differences, much more for twenty four, which is the number of the Alphabet" (Bacon, 1674, p. 170).

In copying the first two rows of Bacon's (1674, p. 171) "Example of a Bi-literate Alphabet", Table 1 shows that this binary alphabet is not just presented as a table (the two bold bottom rows), but actually made by tabulation. This example of a recursive matrix turns its first two cells, *A* and *B*, into its own observers. *A* is both translated into and defined as *a*, the symbol for an empty cell, whereas *B* is translated into and defined as *b*, the symbol for content. The rest of the Alphabet is then defined by where we find *b*'s in *a*'s. The principle clearly corresponds to the use of the Leibniz' (1703) binary numeral system in

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Table 1
Bacon's "Example of a Bi-literate Alphabet" as early form of digital computing.

2^4	*0*	*0*	0	0	0	0
2^3	*0*	*0*	0	0	0	0
2^2	*0*	*0*	0	0	1	1
2^1	*0*	*0*	1	1	0	0
2^0	*0*	*1*	0	1	0	1
	A	***B***	**C**	**D**	**E**	**F**
	aaaaa	***aaaab***	**aaaba**	**aaabb**	**aabaa**	**aabab**

contemporary digital computation.

In either case, this principle is transposition, that is, a permutation that shifts two elements of a set into a position where they can rearrange the set. The respective two elements hence turn into observers of the entire set, and thus—and first of all—into self-observers.[1] As the same is different now, digital computation implies a shift of focus from unity to difference, which can be achieved by a simple and effective manoeuvre. By default, the distinctions of *A* and *B* or 0 and 1, respectively, are false distinctions as, unlike true distinctions, they are neither mutually exclusive nor jointly exhaustive; there obviously are the further letters of the alphabet or natural numbers. And yet the hack consists precisely in treating these false distinctions as if they were true distinctions, which they positively become as soon as they manage to split the entire set and redefine it into their binary architecture of distinction. As these architectures are made of only one distinction, they can be made by only two operations: the self-repetition and self-orthogonalization of this distinction. There is only columns and rows, or in the words and worlds of George Spencer Brown (1979): there is only calling and crossing; and there is the cross, the condensed cross-tabulation, and all the mysteries that emerge once it is expanded.

Digital computation may hence be safely *confused*[2] with cross-tabulation. This definition includes the Bacon and Leibniz systems that constitute matrices and translate into each other by matrices. It includes early technological implementations such as the Jacquard loom, where software (punch card), hardware (above all the Jacquard head), and result (tissue) are organized in tabular form. It includes the 1-by-∞ matrices of the Universal Turing Machine and its first realization by von Neumann at whose "core was a 32-by-32-by-40-bit matrix of high-speed random-access memory—the nucleus of all things digital ever since." (Dyson, 2012, p. 5) And it includes contemporary networked micro processers, each of which contains hundreds of millions of digital electronic logic gates and hence technological implementations of truth tables. The matrix has us, indeed. In this article, we take, therefore, the form of tabulation for the form of digital transformation.

2. Prototypes of digitally transformed social theories

If digital transformation is adequately understood as transition from an analogue to a digital age, then one critical paradox of previous social theories of digital transformation is that they stop at analogue representations of an increasingly digital world. The persistence of this paradox is fascinating for its striking similarity to the situation of the early days of digital electronic computing:

> "Electronic components were widely available in 1945, but digital behavior was the exception to the rule. Images were televised by scanning them into lines, not breaking them into bits. Radar delivered an analog display of echoes returned by the continuous sweep of a microwave beam. Hi-fi systems filled postwar living rooms with the warmth of analog recordings pressed into vinyl without any losses to digital approximation being introduced. Digital technologies—Teletype, Morse code, punched card accounting machines—were perceived as antiquated, low-fidelity, and slow. Analog ruled the world." (Dyson, 2012, p. 5).

Analogue still rules the world of social theory today. Line-by-line, we social theorists use our computers to write distanced analogue texts on the digital transformation rather than attempting to understand it bit-by-bit. We therefore resemble archaic illiterates who talk about writings they cannot read. As with orations on writings, our writings on computers suggest that we still have a distorted view of the computer age.

Our analogue insistence on linear approaches to what is better understood as matrix is coherent with the observation that matrices are not popular in social theory, where they are associated mainly with empirical social research; and if with theory, then with that of rational choice or "the outmoded functionalism of Talcott Parsons" (Barnes, 2001, p. 346).

Whereas the former theory has constantly been suspected of contributing to economic imperialism (Lazear, 2000; Zafirovski, 2000), the latter has been criticised as "a triumphalist Occidental organizing framework, within which evidence of historical complexity is exquisitely tortured to fit Parsons' grand theoretical apparatus." (Holton, 2001, p. 156).

In reengineering the painful AGIL paradigm, Luhmann (2013, 8ff) shows how Parsons (1978, 367; 382) designed this infamous matrix by the combination of two distinctions, which the latter derived from a convergence-oriented reading of the sociological classics Émile Durkheim and Max Weber:

1) The system-related distinction of *inside*- versus *outside*-orientation (Durkheim), and
2) The action-related distinction of *consummatory* versus *instrumental* orientation (Weber).

The final result of this exercise is the "only systematic sociological theory currently available (…). It provides a codification of classical sociological knowledge and a treatment of the conceptual understanding of action with the aid of cross-tabulation." (Luhmann, 2012, p. 4). True to Luhmann (2013, p. 24), it was the basic matrix-architecture of Parson's theory that allowed for an unprecedented and so-far unmatched capacity of integrating disciplinary and interdisciplinary knowledge. Yet, while "Luhmann may be right in stressing that Parsons' generic theoretical edifice has not been supplanted by any more powerful alternative, it remains unclear just how far grand theory of this kind has a future in contemporary social thought." (Holton, 2001, p. 161) And, in fact, Luhmann (1980) had early joined in similarly pessimistic prospects of the Parsonian theory programme. Whereas he always defended the distinction-based architecture of this programme, he agreed that, in its given form, the theory was a dead end in the further development of social theory because.

> "it fails to answer the question of cognitive self-implication (…). Parsons consequently does not himself occur in any of the many boxes of his own theory. And this is ultimately why the theory cannot distinguish systematically between social system and society; it only offers impressionistic, more or less feuilletonistic views of modern society." (Luhmann, 2012, p. 4f).

As is well-known, this assessment motivated the roll-out of Luhmann's own self-implicative theory programme.

Although we may agree with much of Luhmann's criticism, we hold that neither the basic technique of cross-tabulation nor the missing self-

[1] In fact, *A* and *B* or 0 and 1 emerge as the only elements with the power of self-definition ($A = a$ and $B = b$ or $0 = 0$ and $1 = 1$) as they continue to translate the other elements (e.g., *C* and *D* into a *ba* and *bb* or turn 3 and 4 into 10 and 11). As both the observer and the observed, both the code and the coded, the two pairs seem to appear twice in their respective world. In the case of Bacon, this oscillation is still moderated using upper and lower cases; in the case of Leibniz, it already supplies enough energy for the digital take-off.

[2] "We may note that in these experiments the sign = may stand for the words *is confused with*." (Spencer Brown, 1979, p. 69).

implication is the key problem in Parsons theory. Rather, Parson had the right intuition to choose cross-tables as windows to modern society, and this matrix-structure of his theory effectively turns it into a proper prototype of a digital social theory. The only issue is that he implemented the key technique of digitization, cross-tabulation, using non-binary distinctions.

In revisiting the two basic distinctions that constitute the AGIL scheme, we find that only one of them is a true distinction insofar as only the distinction between inside and outside can relatively safely be regarded as mutually exclusive and jointly exhaustive. The distinction between consummatory and instrumental orientation, however, is a false distinction—even if we nimbly translate it into the distinction between present and future orientation as suggested by Luhmann (1993, p. 11). Next to present and future, there is still the past. The distinction of present and future can therefore not be used to split and recode the entire field of observation and, consequently, is dysfunctional for the design of a comprehensive social theory.

In this sense, the problem of Parson's theory is not a perhaps misguided understanding of Durkheim and Weber, and perhaps not even probably too forceful a fusion of their original guiding distinctions. Rather, it might be that his exegesis of the sociological classics misled him to the design and implementation of a distinction that is not compatible with his own theory architecture.

Luhmann (2013, 6ff) did not notice, or at least not comment much on, this glitch; and if he criticised Parsons, then for his self-oblivious and arbitrary choice, rather than for the doubtable distinctive quality, of his guiding distinctions. Luhmann nonetheless had the right instinct, too, to choose the reasonably true of the two Parsonian distinctions, system versus environment, as guiding distinction and master code of his own theory architecture.

Whereas this entire architecture is, consequently, marked by its attempted self-reduction to binary distinctions, there still are regular occurrences of false distinctions not only in cases where Luhmann discusses prominent guiding distinctions of pre-Luhmannian social theory, but also at the heart of his own architecture. For example, his admittedly intuitively-designed typology of autopoietic systems (Luhmann, 1995a, p. 2; 4), which distinguishes organisms, psychic systems, and social systems, is not drawn by true distinctions, for not all non-organisms are social systems, etc. And whereas the different forms of social differentiation (segmentation, centralisation, stratification, and functional differentiation) can be distinguished and indicated by a cross-tabulation of two true distinctions (Roth, 2017), the dividing lines within these boxes, that is, for example, between the function systems science and economy, remain again drawn by false distinctions; among the non-scientific function systems, there is also religion, art, or education.

These and similar issues notwithstanding, many of his key distinctions constitute reasonably true distinctions: open/closed systems, self-/external reference, actual/potential meanings, the present as differential of past and future, etc. In this sense, Luhmann's attempt of splitting the entire realm of social theory and redefining it into an architecture of binary distinctions is as unparalleled as was the groundwork of Parsons. Luhmann's theory therefore is likely the most advanced approximation to a digitally transformed social theory.

By contrast, most other social theories and the corresponding theoretical controversies have been based on or fascinated with false distinctions: normative/empirical, structure/agency, behaviour/action (and, within action, instrumental versus value-rational and obviously also versus communicative action), nature/man, life/form, conflict/consensus, individual/society, community/society, economy/society, capitalism/communism, freedom/socialism, the list goes on. As all these distinctions are either not mutually exclusive or not jointly exhaustive (or neither of the two), the issue is cleary not only in the arbitrariness of the choice, but also in the quality of the chosen distinctions. Take economy/society, for example. The problem with this Weberian key distinction is not only the arbitrary focus on *Economy and Society* (and not on *Politics and Society* or *Religion and Society*). In addition to maintaining this contingency-focus, that prevailed in Luhmann's assessment of "old-European" social theories, truly digital social theories would also need to check for the digital qualities of other theories' key distinctions and, if necessary, translate false into true distinctions.

This insistence on true distinctions is not to say that false distinctions cannot be productive. In fact, distinctions such as economy/society have proven highly effective in the creation of research problems and the design of academic discourses since the early days of sociology. False distinctions are also prominent in management research. For example, family business researchers systematically insist on the observation of the distinction between family and business as well as of persisting tensions or dilemmas that necessarily arise from the observation this false distinction. In fact, the forced distinction and cooccurrence of family and business warrants for the continuance of a dedicated family business discourse.

As long as we live for or on our research problems, we shall therefore cherish rather than challenge false distinctions. As much as all men may be divided into wolves and dogs, these false distinctions will be functional as long as they appear compelling, or at least interesting, and do not cause problems elsewhere.

Digital thinking, however, works differently and is extremely useful for the solution of analogue problems, witness not least our everyday experience of the proliferation of digital computers. Thus, digital theorizing is particularly useful for problems with distinctions that have become obviously dysfunctional, dilemmatic, or simply boring.

In the subsequent section, we shall therefore see how true distinctions may be generated or false distinctions be translated into true distinctions.

3. Agile matrices: the basic design of digital theories

"Distinction is perfect continence" (Spencer Brown, 1979, p. 1). This reminder that a true distinction must split the *entire* space of reference in a way that everything located in this space belongs *to one and only one* of the two sides of the dichotomy could not be more critical. If it is true that "(e)verything said is said by an observer" (Maturana, 1975, p. 315), and that "every observation must distinguish" (Luhmann, 1993, p. 998), then the regular detection of false distinctions is a serious task and issue for those observers professionally concerned with truth.

Once detected and identified as problematic, false distinctions have hitherto often been treated as if they were bi-polar constructs that allowed for the observation of bridges, middle positions, or scales in-between the poles. Many attempts of concealing, challenging, or overcoming the above-mentioned dilemmas, gaps, or divides have therefore been concerned with finding middle ways between the extremes or paradoxological navigations of the tension between the poles. The downside of these strategies, however, is that they remain bound by the false distinction they try to challenge. If this is perceived as problematic, then another popular technique consists in an attempt to turn dysfunctional dualisms into triads. The positive effect of a recourse to a third concept is then that the observation of a triad now allows for the observation of two alternative distinctions, notably the distinctions between the third and the first and the third and the second concept,. Yet, in that case, too, the original false distinction is either maintained (and even confirmed as it guided the choice of the third concept) or soon overshadowed by a shift of focus to other, probably again false, distinctions. This shift takes place as soon as we start to ask ourselves why, of all concepts, the third one is qualified to solve the problems with the two concepts from our original false distinction.

A digital theory-approach to false distinctions is different insofar as it is considerably limited in its strategic options, and therefore the more powerful. Within a binary theory architecture, there is indeed no chance of recourse to third values. The only thing we can do is copy a distinction and apply it to itself. Yet, these two basic operations, also

known as *calling* and *crossing* in Spencer Brown (1979) *Laws of Form*, are all it takes for the development of all and even the most complex forms of life, thought, and communication (Maturana, 1975; Maturana and Francisco, 1980; Luhmann, 1995a).

As is well-known, Luhmann complied with this necessary self-limitation of binary theories as he attempted to base his entire theory architecture on only one key distinction: system/environment. This distinction is a reasonably true distinction because it splits the world into two mutually exclusive and jointly exhaustive sides. He then proceeded to define one side of the distinction as the distinction between the two sides: "a system *is* the difference between system and environment" (Luhmann (2013, 44). Legend has it that this seemingly paradoxical move was inspired by Maturana and Francisco (1980) and their definition of autopoietic systems, i.e. systems capable of producing and maintaining their own boundaries. Thus, every autopoietic system consists of the operations that draw the distinction between this system and its environment. Whereas the original concept of autopoiesis was associated only with living systems, Luhmann (1995b, p. 173) extended the concept by recourse to Spencer Brown's concept of "a re-entry of a form into the form". True to him, the idea of a self-application of a distinction to that distinction corresponds well not only to idea that life-forms reproduce and differentiate themselves by self-applications of their own operations as noticeable in principle of cell division. Rather, he insisted that the same principle also applies to the autopoiesis of psychic and social systems, and hence also to the development of social theories.

One big advantage of a re-entry approach to social theorizing is that it is highly effective in the management of false distinctions and undermines the dilemmatic either-or structure involved in the observation of these distinctions.

As much as even the most cumbersome false distinction can be translated into true distinctions, even the most persistent dilemma can be transformed into a cross-tabulation of now four options. For example, whenever we are caught in the dilemma of a tough choice between *either This* or *That*, we actually observe a reductionist version of a cross-tabulation of This versus That and Yes (1) versus No (0) (see Table 1).

If we look at Table 1, we find that a dilemma is characterised by a situation where a decision for one option (indicated by a "1" in the cell) seems to eliminate the other option (indicated by a "0" in the respective cell). As mentioned above, the self-application of a dilemmatic distinction would actually be the key to the resolution of that dilemma. However, this is not the case with the self-application of false distinctions (see Table 1b):

Table 1b shows that the self-application of a false distinction leads to precisely the same dilemmatic, collapsed trade-off-constellation as depicted in Table 1a. Apparently, the self-application of a false distinction is the implicit background architecture of dilemmatic situations. In fact, the re-entry of a false distinction can lead to hardly more than a double-check whether this or that side of the distinction is chosen or given, and therefore results in a logical deadlock that either forces an arbitrary choice or leaves us with a persistent dilemma. As long as we do not content ourselves with arbitrary choices, the way out of the dilemma, therefore, starts with the intuition that in most cases, including the case of This versus That, a distinction between This and That is a false distinction. As soon as we transform the distinction between This and That into two truly binary distinctions, This/Not-This and That/Not-That, we see two further options emerging for the management of the original dilemma (see Table 2):

Table 1a
Dilemma as a collapsed trade-off matrix of This/That and Yes/No.

This	*1*	*0*
That	*0*	*1*

Table 1b
The trade-off matrix as the result of the re-entry of a false distinction.

	This	That
This	*1*	*0*
That	*0*	*1*

Table 2
The tetralemma as result of the transformation of one false into two true distinctions.

	This	Not-this
That	1 1 (Both This and That)	1 0 (Or That)
Not-that	0 1 (Either This)	0 0 (Neither This nor That)

As we can see in Table 2, the dilemma of a probably undecidable decision between This and That can not only be solved by a probably undesirable arbitrary decision for *either this or that* option. Rather, there is also the option to decide for *both This and That* as well as for *neither This nor That*. This increased margin for decision-making has indeed been achieved by nothing more than the transformation of one false distinction (This/That) into two true distinctions (This/Not-This; That/Not-That).

Interestingly, the result of this exercise is the tetralemma (Jayatilleke, 1967; Roth, 2017; Sparrer, 2007; Varga von Kibéd, 2006), i.e. a structure from traditional Indian logics designed for a solution-oriented navigation of dilemmas. Tetralemmas enabled judges to discover and opt for four alternative choices when confronted with an otherwise unsolvable dilemmatic conflict between two parties. Thus, whenever the judge was not satisfied with ruling in favour of *either* the one (This) *or* the other party (That), the tetralemma neutralized the dilemma insofar as it allowed the judge to decide that *both* or *neither* of the parties have the law on their side. Table 2 therefore shows that dilemmas can be transformed into tetralemmas if and only if the underlying false distinction is transformed into two true distinctions. It is also interesting to note that tetralemmas are not confined to "The logic of four alternatives" (Jayatilleke, 1967), but also know a "fifth position", which refers to the idea that tetralemmas remain bound to the problem they are supposed to solve. In this sense, the fifth position is built into the tetralemma as a constant reminder that we might be trying to find right solutions to the wrong problems. This observation, again, corresponds nicely to the observation that problems of mutually exclusive options are not present in the dilemma itself, but rather in its context (e.g., in the terms of resource scarcity or normative expectations that seem to prohibit the combined affirmation or denial of both This and That).

In this sense, both the tetralemma and the distinction-focused architecture of social systems theory regularly force its users and other observers to not only ask "What is the case?" but also "What lies behind it?" (Luhmann and Fuchs, 1994), and this observation technique does not spare the tetralemma or social systems theory themselves. Thus, whenever digital theorists are confronted with a distinction, they look for a matrix; and whenever they find a matrix, they look for a way out (and thus a way into other matrices present in the context of the original one).

4. Implications for the design of digital social theory

This strategy works not only for "empty signifiers" such as This or That, but also for canonical guiding distinctions such as economy/society. If we transform this false distinction into two true distinctions, economy/not-economy and society/not-society, then we find the notorious tensions between economy and society can be managed not only by advocacy for *either* economy *or* society. Rather, there are now also

both-options such as the idea that economy and society are no true opposites, e.g., because the economy is a subsystem of society; and there also is the option that certain issues are a matter of *neither* economy *nor* society, and therefore probably do not actually require *social* theory. From the *fifth perspective*, we are again confronted with the questions in how far the economy/society distinction is a true distinction, that is, in how far this distinction can actually split the entire (social) world, and hence how meaningful it is to split and recode the entire social world along an economy/society distinction. A re-entry approach to popular guiding distinctions may therefore be used to assess and challenge the validity of potentially or truly false distinctions.

Moreover, a re-entry approach is useful if we work with true distinctions, too, as the self-application of true distinctions may be used to develop digital theory architectures. Take system/environment, for example. After only one re-entry of the distinction, an observer can observe not only the difference between system and environment, but also environments in a system (e.g., subsystems that are environments for each other) and systems in an environment (see Table 3).

Unlike in the case of false distinctions, the self-application of true distinctions does therefore not lead into deadlocks or arbitrariness, but rather to the emergence of increasingly complex and eigen-logic structures useful for the observation of the(ir) entire world. In this context, it is important to recall that this universal claim of super-theories based on the system/environment distinction must not be confused with an exclusivity claim (Luhmann, 1995a, 1995b, p. xlvii). In fact, Luhmann (2013, p. 51) himself suggested that his guiding distinction might one day be transcended by an even more general distinction such as that between form and medium.

The architecture of a digital social theory will therefore look and work radically different from the rigid Parsonian-type matrix structures. First, a digital social theory based on re-entries of true distinctions would be recognizant of Luhmann's criticism of Parson's imperturbable fascination with *his* preferred guiding distinctions and therefore concede the inevitable arbitrariness of the choice of its own guiding distinction. Second, in transcending Luhmann, a digital social theory would not only insist on the basic arbitrariness and commutability of guiding distinctions, but also focus on the quality of these distinctions insofar as it would distinguish true and false distinctions and translate false distinctions into true ones. This insistence on the distinction of true/false is unlikely to cause any conflict with other theoretical or paradigmatic options for the establishment of the truth. Third, in the form of the re-entry, i.e., in the form of the self-application of its own guiding distinction and the resulting tetralemma, a digital social theory contains a method by which it can use its own guiding distinction to transcend its own guiding distinction. As was shown before, in the case of a truly digital theory, this paradox does not lead to a bottomless void, but rather to the systematic observation of alternative guiding distinctions.

A digital social theory can therefore observe not only the entire world, but also the world from entirely different perspectives. There is hence no derogation of the diversity of the world in digital theorizing, and therefore no point in the idea that the analogue world was to diverse to be adequately understood by digital logic. Consequently, there is no science-based reason why science in general and theory in particular should elude its own digital transformation especially if it has the ambition to adequately understand the digital transformation of the world we live in.

Table 3
Eigen-complexity unfolded by the self-application of a true distinction.

	System	Environment
System	System	System in the environment
Environment	Environment in the system	Environment

5. Outlook to a universal social theory machine

In this article, we introduced to and insisted on the distinction between true and false distinctions to show that binary theory architectures based on one and only one true distinction do not lead to technocratic distortions of whatever is called reality, but rather allow us to both reduce and unfold the entire complexity of the analogue world. This claim was corroborated by demonstrations of how the self-application of one true distinction inevitably results in the emergence of tetralemmas, structures from ancient Indian logic that have been used for ages to challenge, broaden, and overcome narrow dualistic views and the resulting dilemmas. Our article therefore shows that there is no contradiction between digital theorizing based on true binary distinctions on the one hand and recent trends to the observation of third ways and values in analogue social theorizing on the other. This is true even for cases where archaic distinctions such as male/female are first chosen as guiding distinctions and then immediately undermined by the criticism of the dualist structure the chosen distinction, which ultimately leads to the observation of intermediate or transcendent groups or classes within or beyond the criticised distinction. Yet,

> "if we intended to distinguish men and women, we would have to ask, 'Is it a man or a woman?' And if we answered, 'It is a microphone,' then our distinction would be unnecessary. In case we would like to mix the terms (nothing speaks against it), we would need a new term—for instance, 'hermaphrodite'— which in turn would have to be distinguished from other things." (Luhmann, 2013, 50).

The point hence is that the observation of third values, concepts, or categories implies either the (often only implicit) recourse to another distinction or the self-application of the original distinction. Whereas the former strategy simply replaces one evil by another, the second strategy is perfectly in line with digital theories, the construction principles of which are the self-application of true and the translation of false into true distinctions. In the present case, a digital theory may easily come to the same result as, and probably ever further than, traditional analogue theories. All that the digital theory needs to do is translate the probably false distinction male/female into two real distinctions (male/non-male; female/non-female), combine these two true distinctions, and derive two so-far un- or under-observed categories—bisexual and asexual—from the emerging matrix. Moreover, the tetralemmatic (rather than dilemmatic) form of the digital approach systematically suggests the observation of the above-mentioned fifth position, which refers to the option to question one's own insistence on a particular dilemma or distinction. In the present context, a fifth position-observation suggests the possibility that, e.g., many of the grievances typically suffered by the four gender groups might not be related to the original male/female distinction after all, but probably rather to other more (rich/poor) or less (black/white) true distinctions.

In this sense, digital theorizing can systematically challenge and integrate the most diverse fashions in analogue theorizing. This is possible because a digital theory is maximally minimalist to the extent that it is based on only one distinction—for example, the distinction of distinction and indication— and effective as soon as it runs only one basic programme: the distinction between true and false distinctions. Consequently, a digital theory is rooted in science and only in science, and therefore more receptive to guiding distinctions from other spheres of society because there are no ideological or social desirability assumptions in its DNA that would suggest affirmation, rejection, or preference of particular social guiding distinctions. The only basic assumptions of such a digital theory would be that observation is a matter of distinction (and indication), and that scientific observation consequently is a matter of the distinction between true and false distinctions.

As the self-concept of a digital social theory is not that of an analogue story written line-by-line and recited word-by-word, but rather that of a literal social theory *programme*, its basic self-concept and

architecture is perfectly compatible with other fields of science and their respective forms of digital self-implementation. This is particularly true for logics, where binary logical operators are systematically represented as truth tables that may be implemented as digital electronic circuits.

Digital social theory may therefore be associated with prospects of a *universal social theory machine* that is similar to the universal Turing machine and its later implementations to the extent that the universal social theory machine could be used to theorize any theorizable event by either processing true social-theoretical distinctions or translating false into true ones.

This idea of a universal social theory machine might remind us of a term that Niklas Luhmann (2013, p. 139) used only once to describe and defend his own theory:

> "The term is '*supervacuus*' or '*supervacaneus*' in the old Latin of the Republic, which is even worse. If you consult a dictionary, you will find that it is translated as 'superfluous.' The theory is superfluous! But what is really meant by '*vacuus*' is something empty. However, one cannot say 'more than empty or '*über*-empty' or 'over-empty.' How could one express something like that? Let us stick with '*supervacuus.*'"

In this sense, we might say that a digital social theory would be a *Supervacuus* and indeed be empty to the extent that it is so short on premises that only one premise, the idea of distinction (between true and false distinctions), would be enough to unfold a most comprehensive theory architecture. Within such a theory architecture, there would be a place for all true and a procedure for the translation of all false into true distinctions.

A universal digital social theory would therefore not cancel any more specific theoretical ambitions as long as these ambitions are ultimately scientific and therefore guided by the distinction between false and true. Thus, if we wish to study class struggles, then we may easily install and run a theory programme that splits the world into proletarians and bourgeoises, base and superstructure, and further derivates of the bottom/top distinction. Or why not increase the gender-sensitivity of our digital theory downloading a gender-app made of man/women distinctions, before we translate this probably false into a true distinction and thus also accommodate the above-mentioned both- and neither-cases. Economy/society, behaviour/action, … no matter what distinction, if it is a true one, we can implement it in a digital theory architecture; and if it is a false distinction, we can translate it into two true distinctions that fit the purpose. As has been shown in this article, this is possible because the tetralemma may be observed as a flexible, adaptive, theory-immanent, and therefore ultimately also "supervacuous" reading device for an equally flexible, adaptive, and supervacuous theory that considerably reduces the risk of logical deadlocks without limiting the scale and scope of theoretical explorations. The utility of this concept could be demonstrated by a crowdsourcing project that first collects and then processes or translates the guiding distinctions of social theory of the last decades or centuries.

Digital social theory is a universal social theory machine or *Supervacuus* not only because it is empty to the extent possible and can therefore simulate all other theory programmes, but also because some might say that such digital simulations of analogue theories are completely supervacuous. Which truly they are, for there has been a life before the computer, and there might be again a life without the computer in a future near or far. Until then, however, our contemporary life is not well-understood without computers, and thus we might be needing this superfluous digital social theory as long as our civilization needs as superfluous a machine as is the computer.

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