

## Dances with Categories: Anthropology of 'Technology' and Anthropology of Technics...

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**Abstract:** This article proposes to consider the term *Technology* as a vernacular category of modernity, whose use inscribes the phenomena to which it refers in a utilitarian, rational and Eurocentric framework. Based on the work of classical and recent anthropology, and drawing on the foundations laid by the French-speaking "Technologie Culturelle" of Maussian origin, the article proposes to return to Marcel Mauss' definition of technical acts and focuses on the question of efficiency, a source of debate. The article argues that it is by considering, with Mauss, efficiency according to the actors themselves, be they computer engineers or shamans, that we can obtain an adequate methodological framework for the empirical analysis of technical (or ritual or aesthetic) phenomena and their deep axiological significance, without sacrificing their material or conceptual diversity, or their temporal or spatial complexity.

**Keywords:** anthropology, technology, technics, techniques, magic, Mauss, efficacy, technical diversity. Keywords : anthropology, technology, technics, techniques, magic, Mauss, efficacy, technical diversity.

*Technology offers a light at the end of a long, dark investment tunnel*  
The Times, David Smith, Wednesday January 04 2023, 12.01am  
(<https://www.thetimes.co.uk/article/technology-offers-a-light-at-the-end-of-a-long-dark-investment-tunnel-c26vcgz8>)

*The technology that could break the rail unions: The fiercely resisted greater use of automation is a core plank of Network Rail's reforms*  
The Telegraph, Oliver Gill, Chief Business Correspondent 3 January 2023  
(<https://www.telegraph.co.uk/business/2023/01/03/technology-could-break-rail-unions/>)

*3 in 4 believe future technological progress will play "key role" in combating climate change*  
Circular Economy, Environment and Energy, Sustainability, 4<sup>th</sup> of January 2023 (<https://www.circularonline.co.uk/news/3-in-4-believe-future-technological-progress-will-play-key-role-in-combating-climate-change/>)<sup>1</sup>

### Introduction

1. The epigraphs presented above can play the role of ethnographic vignettes illustrating the common uses of the term "Technology"<sup>23</sup>. Derived from the English *Technology*<sup>4</sup>, as François Sigaut pointed out in 1985<sup>5</sup>, these usages have spread as much in the media as in official documents and academic circles – including in the historical and social sciences. Sigaut then

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<sup>1</sup> [Translation Notes: in the published text I used headlines from Google, searching "technologie" in the News section in French. I've replaced these with more recent English headlines.]

<sup>2</sup> [Translation Notes: in French *Technologie*.]

<sup>3</sup> In this article, I use quotation marks and a capital letter for the word Technology, and *technology* in italics with a lower case, when dealing with their common usage. Used without inverted commas, Technology refers to the study of techniques.

<sup>4</sup> [Translation Notes: In English in the original.]

<sup>5</sup> Sigaut 1985: 115-116.

noted that the use of “Technology” to designate a set of techniques had developed in France during the 1950s and 1960s under the influence of Anglo-American and that, however deprived it was of approval from the *Comité d'étude des termes techniques*, this usage was not about to disappear. The thirty or so years that have passed since the publication of this text have in no way belied this prediction. Whether in the field of genetics, audio-visual, communications or digital technology, the reality of the “new technologies” is, more than ever, accepted by all, whether they are academics or not.

2. Certainly, the growing hegemony of the English language is partly responsible for this ubiquity. Disciplines such as Science and Technology Studies (STS) and Material Culture Studies, which are dominant in critical approaches to phenomena associated with technology in both Britain and the United States, have obviously played a role in this widespread misuse. However, it is clear that the term *Technology*, while widely used, including metaphorically, attracts little critical attention from those who use it in these disciplines. This position is particularly noticeable in the translations of original texts that deal precisely with the subject. Whether for Martin Heidegger's *Die Frage nach der Technik*, Bruno Latour's *Aramis ou l'Amour des Techniques* or Michel Foucault's *techniques de soi*, Technology has become the default term.<sup>6</sup>

3 This paper will not be the umpteenth plea in defence of the French language, but instead wishes to draw attention to the ubiquitous use, particularly in the academic world, of a term whose empirical meaning has become so extensive that it has become extraordinarily vague - including in the English language. If the inventory of definitions of the word<sup>7</sup> illustrates the difficulty that technical phenomena pose for the social, historical and human sciences, it is interesting to note that the English-language articles and books that deal with Technology - whether in philosophy, sociology or anthropology, and whether they are introductory chapters, textbooks or monographs - all require an etymological and/or linguistic exercise and agree that the term, with its imprecise contours, covers a vast range of phenomena<sup>8</sup>.

4. The evasive nature of this category of “Technology” is conceptually problematic, like those of “Culture”, “Society” or “Nature”, which anthropology has worked hard to deconstruct<sup>9</sup>, due to the very fact that its use grafts the phenomena it deals with onto an already constituted analytical framework that implicitly orients the thinking of those who employ it. However, one must recognise its deeply concrete and operational effect, both conceptually and materially, in modern societies. I am not suggesting here that *technology* has to be deconstructed, but instead that we ought to anthropologically decentre it. This would then leave room for an analytical framework that would make it possible to pursue the technological work that Sigaut and so many others have been calling for, while at the same time exposing the epistemological and other dangers of using the category of *technology* as an analytical category. As I hope to demonstrate, this task does not, in the final analysis, pose any real difficulty, requiring, in fact, only a return to methodological sources.

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<sup>6</sup> Heidegger, 1954; Foucault, 1988; Latour, 1992; it is worth noting that Foucault himself, universally acknowledged to be an epistemology buff, uses technology, to translate his own “techniques of self”.

<sup>7</sup> Sigaut 19852

<sup>8</sup> For example: Winner, 1977; Oldenziel, 1999, pp. 19-50; Eglash, 2006; Matthewman, 2011; Mitcham, 1992, pp. 137-266; Sigaut, 2002 [1994].

<sup>9</sup> For instance Ortner, 1972; Strathern, 1996; Descola, 2005.

5. Therefore, I will first attempt to dislodge this category of *technology* (and its substantivized variant *la technique*<sup>10</sup>) from its analytical centre in order to demonstrate its profoundly vernacular dimension, rooted in industrial modernity. I will then show that this project can find its methodological sources in classical and recent anthropological work, notably through its grounding in the Maussian tradition. I will then try to show how Marcel Mauss's "formula"<sup>12</sup> provides an adequate methodological framework to empirically analyse technical phenomena without sacrificing their material or conceptual diversity nor their temporal or spatial complexity.

### ***Technology as a vernacular category of Euro-American modernity***

6. Considering *technology* as a category rather than a concept highlights its effect on anthropological analyses. Without going into the philosophical or cognitive details of their respective definitions<sup>13</sup>, while concepts are often understood as pertaining to categorical activity, categories, on the other hand, are rather envisaged as endowed with a power of classification and constitution and, therefore, with an operative value. The fact that the term *technology* can occupy both the positions of concept and category in everyday language is a direct repercussion, in my view, of the semantic confusions that cloud its definition. Making it primarily a category allows me to recall its capacity to structure "the intersubjective construction of the objectivity, observable and describable, of reality"<sup>14</sup>, and thus to highlight its operative role. It is thus the way in which *technology*, as a category, is articulated to practices and conceptions of lived and perceived reality that invites me to assign it as such.

7. The other analytical advantage of this assignment is to be able to consider the term *technology* from a perspective with which the anthropologist that I am is more comfortable: that of taking into account, in ethnographic work, the relationships that exist between vernacular (or emic) categories and analytical (etic) categories. In this respect, one of the best-known examples, as old as anthropology itself, is undoubtedly that of *mana* in Oceania and the questions that concern its role as a verb, substance, process, energy or force. These questions demonstrate the specificity of *mana* as a vernacular category within Oceanic societies, with no direct equivalent to the analytical categories of anthropologists.<sup>15</sup> Despite these debates, all agree in recognising the fundamentally operative dimension of *mana* in practices and relationships, whether these "enlist" human beings, objects, materials or meta-humans (spirits or deities).

8. This is the position taken by the late Marshall Sahlins, whose thinking clearly details the tension between the two poles emic and etic.<sup>16</sup> His reference to Arthur M. Hocart's famous quote perfectly illustrates what he considers to be the very issue of anthropology: "How can we make any progress in the understanding of cultures, ancient or modern, if we persist in dividing what the people join and in joining what they keep apart?"<sup>17</sup> While these debates generally focus more on the role of categories in indigenous classification systems, I concentrate here on their

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<sup>10</sup> [Translation note: before the French term *La Technologie* became preeminent, one could often find *La Technique* as its equivalent]

<sup>11</sup> See Camolezi, this issue.

<sup>12</sup> Sigaut, 2003.

<sup>13</sup> See Ogien, 1994, p. 191..

<sup>14</sup> Quéré, 1994, p. 6.

<sup>15</sup> Codrington, 1891; Firth, 1940; Keesing, 1984; Holbraad, 2007; Da Col and Graeber, 2011; Tomlinson and Tengan, 2016.

<sup>16</sup> Sahlins, 2017; Ginzburg, 2017; Strathern, 2017.

<sup>17</sup> Hocart, 1970 [1952], p. 23.

epistemological and practical dimensions. The fact that the category of *technology* can take on an empirical and conceptual extension in some contemporary Euro-American practices and their interpretations is not in doubt. In such cases, the anthropologist is then obliged to take it seriously, as with any other vernacular category. However, as in the case of *Nature*, imposing this category on practices such as, for example, yam cultivation in Papua New Guinea<sup>18</sup>, initiation rituals or other practices such as sculpture or painting, amounts to imposing on them an analytical framework derived from its Western conceptual content.

9. The vernacular specificity of the conceptual content of *technology* has already been sufficiently clarified by sociologists, philosophers and historians. It is associated with Western, capitalist modernity<sup>19</sup>. As Leo Marx reminds us, *technology* then appears as a discrete entity, a set of neutral means, elaborated for specific and known ends, inscribing the phenomena it covers in a utilitarian and rational framework; *technology* goes so far as to acquire a form of autonomy that distinguishes it from the scientific and social domains, thus occupying the position of a totalizing and universal agent of change<sup>20</sup>. Even the most critical positions, which make it “responsible” for environmental degradation, social inequalities and the “technocratic” or, on the contrary, “populist” drifts of contemporary democracies, only reinforce its essentialization.

10. These two characteristics, autonomy and neutrality, have been the subject of much criticism. Constructivist studies of STS, such as those of Actor-Network Theory (ANT), have revealed the inseparable participation of social relations and representations in the design of technical objects and infrastructures<sup>21</sup>. While this research has empirically demonstrated the rootedness of *technology* in social and historical phenomena as well as the non-neutrality of socio-technical innovation processes, it has less often noted the vernacular dimension of the category of *technology* and its implications.

11. The extension of the use of this category outside English is obviously not limited to French. There are hints of it in *teknologi* in Bahasa (Indonesia), *tecnología* in Spanish, or *tecnologia* in Brazilian Portuguese, as well as transcriptions in Japanese (*teknorojī* or *teknoloji* in its romanised form, which can replace the classic *gijustu*) or Arabic (تكنولوجيا). This linguistic expansion, which accompanies the geographical expansion of the industrial and digital environments, systems and infrastructures to which the term refers, critically raises the question of a double colonisation: that of the industrial character of these technics and their effects, both positive and negative, and that of their conceptual, and hence axiological content (in terms of rationality, efficiency and utility), already questioned by authors such as Heidegger, Mumford, Ellul or Marcuse. And yet, if, as Dipesh Chakrabarty suggests<sup>22</sup>, the postcolonial project must provincialise European epistemologies, then *technology* as a category embedded in modernity would be expected to be subject to the same provincialisation.

12. In sum, as anthropology demands, *technology* must be taken seriously as a vernacular category. The task then is not to find a new definition for it<sup>23</sup>, but to analyse what is claimed when it is invoked, as Tim Ingold suggested<sup>24</sup>, and what effect this claim may have on the phenomena it

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<sup>18</sup> Coupaye, 2013; 2018.

<sup>19</sup> Frison, 1993; Marx, 2010 [1997]; Odenziel, 1999; Mitcham and Schatzberg, 2009; Hui, 2016; Schatzberg, 2018; Adas, 1989; Benjamin, 2019; Paulson, in press.

<sup>20</sup> Marx, 2010 [1997], p. 564; see also Winner, 1977.

<sup>21</sup> Bijker and Pinch, 1987; Akrich, 1992; Latour, 1991; Law, 1991.

<sup>22</sup> Chakrabarty, 2000.

<sup>23</sup> See Camolezi, this volume.

<sup>24</sup> Ingold, 1999, p. viii.

comes to cover - a task that remains to be done. In parallel, the analysis of the empirical extension of the category *technology* - technical activities, objects and environments - can then free itself from the conceptual weight of notions of modernity, efficiency and rationality and allow local logics to emerge, without systematically subjecting them to Eurocentric criteria<sup>25</sup>.

13. In French-speaking anthropology, the *Technologie Culturelle* programme, set up by Robert Cresswell and Hélène Balfet and continued by Pierre Lemonnier, Marie-Claude Mahias and Philippe Geslin, in the continuity of André Leroi-Gourhan and André-Georges Haudricourt, and in dialogue with historians such as Bertrand Gille and François Sigaut, is one of the few, if not the only one, devoted to documenting these empirical dimensions in metropolitan as well as remote areas. The very title of the programme showed that *Technologie Culturelle/Cultural Technology* was to technical phenomena what *Cultural Anthropology* was to human phenomena. Based on the disciplinary definition of the term, *technology* is thus a branch of the human sciences like *sociology* or *philology*. The oxymoronic dimension of this project was no doubt not accidental, any more than that of the Anglophone project of Material Culture Studies, both of which are based on the Marxist reference to historical materialism. The documentary wealth of the ethnographies and the theoretical wealth of the debates presented in *Techniques & Culture*, the programme's journal, illustrate the pragmatic turn proposed by the observation, not only of finished products, but of the processes of manufacture and the modalities of action<sup>26</sup>.

14. If this anthropology of technics has continued and renewed itself by enriching itself with new themes and fields, ranging from contemporary art to the digital, via biomimicry or the practices of “resistance”, its contemporary empirical inflection also provides it with the analytical tools to decentre this category of *technology*. Indeed, it is his anchoring in the Maussian tradition that makes this decentring possible. However, it is perhaps at the heart of this tradition that we find an analytical ambiguity posed by the question of techniques.

### **The ambiguity of the "Mauss formula": Effectiveness from an analytical point of view or from the vernacular point of view?**

15. The question of techniques runs through almost the entirety of Maussian thought, firmly placing Technology among the human, historical and social sciences<sup>27</sup>. In particular, it is on Mauss's definition of technical acts as efficient and traditional<sup>28</sup>, which Sigaut rightly calls a “formula”<sup>29</sup>, that the French-speaking anthropological tradition rests. Given that the term “tradition”, far from being essentialist, is used by Mauss to indicate that all techniques are learned and transmitted over time and space, it is undeniably the term “effectiveness” [or “efficacy”, Translation Note] which requires clarification, given its potentially teleological character.

16. Indeed, the autonomisation of *La Technique* or of *technology* as categories based on a fundamentally rationalist and objective preconception of the phenomena they cover, may invite empirical analysis to focus primarily on a linear relationship between, on the one hand, concrete (material) and universal causal networks and, on the other hand, the results obtained. In doing

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<sup>25</sup> Of course, attention should also be paid to cases in which the category of *Technology* is used, especially in “non-modern” contexts, to use Bruno Latour's expression, 1991.

<sup>26</sup> Bartholeyns et al, 2011; Douny and Naji, 2009; Coupaye and Douny, 2010; Lemonnier, 2012.

<sup>27</sup> Schlanger, 2006, 2012.

<sup>28</sup> Mauss, 1950 [1934], pp. 371-372.

<sup>29</sup> Sigaut, 2003.

so, this relationship is anchored in an objectivist, functionalist and teleological conception of the effectiveness of actions (and by extension of technical objects and systems). In other words, the very idea of “effective technical acts” can summon the presence of determinisms from which the relations between humans and the material world cannot escape, a real analytical bugbear for the social and historical sciences, and especially in anthropology, as illustrated by the following two debates.

17. The first debate emerges from an exchange which, friendly as it was, opposed Pierre Lemonnier and Bruno Latour in the pages of the journal *Ethnologie française*<sup>30</sup>. Lemonnier criticised the “ultra-relativist” approaches to techniques by insisting on the notion of technical efficacy<sup>31</sup> and showed how, in societies far removed from Euro-American ways of thinking, the technical act can never be totally arbitrary since it remains subject to physical laws. Latour, on the other hand, responds by evading the question of efficacy, which seems secondary to that of documenting the socio-technical processes of delegation (and therefore of innovation and conception) of moral values to technical objects.

18. This exchange elicited a response from French-speaking technologists in a special 2003 issue of *Techniques & Culture* devoted to this tension between, on the one hand, a technical foundation (empirical, concrete and universal) of efficiency for Lemonnier, and, on the other hand, a social foundation for Latour and the more relativistic critics of ethnocentrism and scientific objectivity<sup>32</sup>. The introduction written by the late George Guille-Escuret<sup>33</sup> unfold the complexity of this debate, showing the cleavage between a search for objective and empirical sources of conceptions of efficiency, stemming from the Marxist foundations of *Cultural Technology*, and a critical sociology of technical innovations, in which efficacy belongs more to the hermeneutic register.

19. Taking part in this debate, Sigaut focuses on Mauss' definition in order to show that the formula Action + Tradition + Efficiency “has an analytical value, and that this value is transcultural because all human societies use it themselves”<sup>34</sup>. To demonstrate this, Sigaut subjects the formula to a kind of crash test: “If techniques are effective traditional actions, what would be non-effective or non-traditional actions?”<sup>35</sup>. By cancelling “separately each of the three members of the formula, this cancellation being real or fictitious”, one could then “specify as best as possible the different registers of activities that may be involved”<sup>36</sup>. Leaving the door open to other registers, however, Sigaut suggests four main ones: doing (the action itself, whether successful or not), learning, play (including simulation) and spectacle. It is important to note here that “magic” occupies an interesting place, as the author quite rightly points out that there is no evidence that the actions qualified by the anthropologist as such are always and everywhere equated with “magic effects”<sup>37</sup>. In other words, Sigaut points out not only that

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<sup>30</sup> Lemonnier, 1996; Latour, 1996. [See a discussion in English by Karl Knappett 2012, and Coupaye 2013: 237-246]

<sup>31</sup> [Translation Note: Using DeepL as a basis for this translation, I note that the algorithm automatically translated “efficacité” into “efficiency” instead of “efficacy” or “effectiveness”. “Efficiency” refers to a ration input/output, see Jennifer Karns Alexander, *The Mantra of Efficiency: From Waterwheel to Social Control* (Baltimore: The John Hopkins University Press, 2008)].

<sup>32</sup> Geslin, 2003.

<sup>33</sup> Guille-Escuret, 2003.

<sup>34</sup> Sigaut, 2003, § 28.

<sup>35</sup> Sigaut, 2003, § 13.

<sup>36</sup> Sigaut, 2003, § 28.

<sup>37</sup> Sigaut, 2003, § 28.

“magic” is far from being a vernacular category to the people performing such tasks, but also that, as an analytical category, it poses real heuristic problems in itself.

20. While Sigaut's demonstration is impeccably rigorous, it nevertheless relies on this universal conception of efficacy, forming the Marxist underpinning of *Cultural Technology*, and opposes it to the more hermeneutic approaches which, at the time of writing, were taking an increasingly important place in anthropology. Adopting an analytical stance, Sigaut seems to be looking for the universal empirical foundations that rationally underlie cultural practices, the source of which would be found in the “mechanical, physical or physico-chemical”<sup>38</sup> effects felt.

21. The second debate, around the tension between objective and interpreted efficacy, can be found in the criticism that Jean-Pierre Warnier and his research group *Matière à Penser (MàP)*, also of Maussian inspiration, make of *Cultural Technology* and its quest for the type of efficacy and its anchor point. According to Warnier, it is preferable to focus on the target of effectiveness by relying on an analytical distinction between, on the one hand, effectiveness on the matter, and, on the other hand, effectiveness on the subject.<sup>39</sup> For the *MàP* group, there is no doubt: the “technical gesture cannot therefore be dissociated from the subject, [their] history, [their] desires, [their] social life. The efficacious technical gesture, at the same time as it is efficacious on the material, is efficacious on the subject”<sup>40</sup>. The efficacy of technical acts must therefore be sought in the effects that the affective-sensory-motor relations with the material have on their actors, as a process of subjectivisation. It should be noted that for *Cultural Technology*, as for *MàP*, the role of the relationship with the material remains central, and it is perhaps this that gives efficiency its objective character<sup>41</sup>.

22. My own suggestion is less attached to these universals, although far from being as relativistic as the postmodern currents that Sigaut criticises. Without invalidating his position, that of Lemonnier or that of Warnier, it is oriented towards an approach to efficacy that I hope complements theirs, on which Mauss himself is ambiguous, and which is found in several periods of his writings, whether it is a question of techniques in the strict sense, rites or aesthetics<sup>42</sup>.

23. Indeed, it is the common application of the Maussian formula to (religious or “magical”) rites, aesthetics and actions on matter proper, that prompts me to return to the way Mauss, in his attempt to define rites, insists on the need to consider “not the efficacy in itself, but the way in which this efficacy is conceived”<sup>43</sup> - and thus perceived. This central remark allows us to distinguish analytically the efficacy of body techniques from that of rites, insofar as, in the case of the latter, this efficacy has a dual character. It can be (1) *sui generis*, i.e., it is the performance itself which is conceived as effective, not its result, and this in an illocutionary manner<sup>44</sup>, and/or (2) it must take into account the fact that it always mobilises causes that escape direct observation (meta-humans - or vital processes, for that matter).

24. This pragmatic dimension of ritual, magical or religious acts, whether or not associated with technical acts in the strict sense, is therefore central to placing the notion of efficiency in its

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<sup>38</sup> Mauss, 1950 [1934], p. 372.

<sup>39</sup> Warnier, 2009.

<sup>40</sup> Julien and Rosselin, 2003, § 35.

<sup>41</sup> [Translation note: see also: Douny, Laurence & Urmila Mohan. Editors. 2020. *The Material Subject: Rethinking Bodies and Objects in Motion*. London: Routledge.]

<sup>42</sup> Mauss, 1950 [1902-1903], pp. 11-12; 1950 [1934], pp. 371-372; 2002 [1947].

<sup>43</sup> Mauss, 1968 [1909], p. 405, emphasis added.

<sup>44</sup> Ahern, 1979.

anthropological framework. As categories of act, problematic for anthropology, as Stanley J. Tambiah details<sup>45</sup>, rites necessarily invite us to position ourselves vis-à-vis Euro-American ethnocentrism and its functionalist and utilitarian rationality.

25. At the same time, it becomes possible to study, in parallel, the vernacular conceptions of efficiency, in order to bring to light the logic and the actors for whom “technical act, physical act, magico-religious act are undifferentiated”<sup>46</sup>. And this can be done without necessarily rejecting the practical and empirical foundations dear to *Cultural Technology*, undoubtedly anchored in actions on matter, on which societies can elaborate a conception of efficiency likely to extend to domains that anthropologists qualify as “symbolic”.

26. From an anthropological point of view, my own focus is thus halfway between that of Cultural Technology and that of MâP, on the vernacular modalities of actions, whatever their targets.

### **From the adjective 'technical' to efficiency as a way of actualising values**

27. Cultivators in the village of Nyamikum in Papua New Guinea visit daily their gardens to care for the voluble stems of the Long Yams *Waaipi*. As they unwind and rewind them on their stakes, which have been moved to follow their daily lengthening, they encourage their growth by humming a *manëgup*, a short song with a prescribed structure, over the stem itself<sup>47</sup>. The gestures of the gardeners must be delicate because of the fragility of the stems but also out of respect for the plant itself. Moreover, hand contact transmits to the plant its *Jëvaai*, a bodily (and therefore material) capacity which, residing in blood, sweat and smell, can affect many technical activities, such as the carving of ritual images or a football match<sup>48</sup>. This sequence of unwinding gestures-movement of the stake-winding could be analysed on its own, but doing so, by stripping it of the accompanying murmured (or even just thought) chant, separates (analytically) what people unite (vernacularly) in action, as Hocart has warned us.

28. The term “action” thus covers not only movements or processes, but also performances and practices, whether *praxis* or *poiesis*. In all cases, these actions, whether verbal or mental, are experienced as having the capacity to have a real impact on the transformation sought. They must therefore be documented ethnographically in the same way, whether it is dancing, playing, praying, painting, planting a yam, coding an algorithm or invoking water spirits. In doing so, one also has to *suspend all preconceptions and pre-categorisation* of what the category of technical action (or even “matter”) is supposed to cover. These acts are performed with the aim (explicit or not, achieved or not), of doing things and/or creating prescribed effects - in other words, of effecting transformations, whether these are perceptible or imperceptible.

29. Moreover, this *emic* efficacy of the action, even when *sui generis*, also bases its legitimacy on two aspects that can be considered external to the material aspects themselves: first, it is *de facto* “traditional”, i.e., transmitted and learned, and therefore *shared* between individuals and

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<sup>45</sup> Tambiah, 1990.

<sup>46</sup> Mauss, 1950 [1936], p. 371. [Translation note: in the English 1973 translation “Techniques of the body” (*Economy and Society*, 2:1, 70 – 88) on found the “confused” instead of undifferentiated a word which I believe is a false friend, and obviously carries an ethnocentrist bias]

<sup>47</sup> Coupaye, 2013, p. 135-137.

<sup>48</sup> Coupaye, 2013, p. 168-172 [See also Coupaye, Ludovic. 2018a. ‘Yams Have No Ears!’: Tekhne, Life and Images in Oceania. *Oceania* 88(1): 13-30.]



generations (“this is how my forebearers did it”). Secondly, it is this same shared character which, combined with implicit efficiency, also gives it the character of being appropriate - which does not prevent innovation or improvisation. This “traditional” efficacy can this be a *raison d’être* in itself, a reason that fundamentally differs from the causalities that more scientific approaches are investigating<sup>49</sup>. This legitimacy of action is therefore based as much on these reasons as on determinants external to the action, consolidating them as instituted practices. It is thus the consideration of these reasons - as important in the action as what the material aspects require, that gives the anthropologist unique access to vernacular conceptions of action.

30. This does not mean, however, that these material or technical determinants, which Balfet and Cresswell have identified as belonging to internal logic<sup>50</sup>, should be put on the back burner, as the most constructivist approaches do. On the contrary, it is the organic articulation between these determinants and the instituted practices that seems crucial to documenting vernacular logics. The fragility of a yam stem, which determines the delicacy of the gestures, is indeed a universal property since it remains the same in Cameroon, the West Indies or Vanuatu (where yams are also cultivated). On the other hand, for the anthropologist, it is the operation as a whole, whether it includes humming, praying or assessing exposure to sunlight with the help of an electronic measuring instrument, that provides an opportunity to glimpse the ethnographic specificities of local logics.

31. Indeed, if the sequence of gestures and their performance reveal the fragility of the stem, its volubility and its relationship to phenomena identified as being related to photosynthesis, its association with the *manëgup* song and the role of the *Jëwaai* substance also allow us to glimpse local conceptions of vital processes, of the living<sup>51</sup>, of the bodily substances involved, of the meta-humans mobilised, of the speech, the breath or the words spoken which, combined with gestures and objects, are conceived as co-agents of the development of the plant, whose growth, which can be observed empirically, is indeed an effect produced<sup>52</sup>. It is therefore by taking into account these modalities of action, insofar as they mobilise ontologically heterogeneous relations, that it is possible to anthropologically reveal the way in which humans seek to obtain effects and transformations. This position is particularly important when actions are supposed to act on the causes of vital growth processes which, in living beings, “are hidden from view, because they are hidden in the heart of organic matter, or disseminated in complex ecological networks and in the long time of evolution”, as Perig Pitrou points out<sup>53</sup><sup>51</sup>.

32. Approaching technical activity in these ways makes it possible to reveal vernacular efficacy, which can only be achieved analytically by avoiding confining it to a framework that separates action and its strictly material effects from the practices and logics that underpin it. It is therefore by retaining the analytical use of the adjective “technical” that we can qualify the vernacular modalities of action.

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<sup>49</sup> It is the emphasis on causes instead of reasons that Ludwig Wittgenstein reproaches Sir James G. Frazer for in his remarks in the *Golden Bough*. Frazer in his remarks to the Golden Palm. Philippe de Lara, 2005; Wittgenstein, 1982 [1969].

<sup>50</sup> Balfet, 1975, p. 52; Cresswell, 1996, p. 43.

<sup>51</sup> Coupaye and Pitrou, 2018.

<sup>52</sup> Coupaye, 2018.

<sup>53</sup> Pitrou, 2020, p. 13 [See also Pitrou, Perig. 2017a. Life as a making. *Nature* 4: 1–37, or Pitrou, Perig. 2017b. Life form and form of life within an agentive configuration: a birth ritual among the Mixe of Oaxaca, Mexico. *Current Anthropology* 58:7: 360–80]

## Conclusion: Anthropology of Technology, Anthropology of Technics

33. Finally, I would like to outline three important analytical consequences of this use of the adjective 'technical'. First, as Latour notes,

"Technical" is an adjective that allows us to evoke what I hesitate to call materiality, whether it be songs or wood, noise or steel, stories or fences. In fact, everything that "technical" actions mobilise in their specific course of action becomes, consequently, "material"<sup>54</sup>.

34. In other words, as a qualifier, the adjective "technical"<sup>55</sup> allows to escape the essentialization that the use of the category of *technology* imposes on the phenomena concerned, by referring to the modalities of action without imposing a preconception on what the activity mobilizes (objects, ancestors, mana) nor on what it is supposed to transform (matter, time, space, spirits, the subject, young men into initiates).

35. Furthermore, this adjective highlights the fundamental axiological dimension and, in particular, moral of modalities of action. These modalities derive their character as appropriate acts, in accordance with a set of values, some of which may be implicit, from 'traditional' aspects (transmitted, shared, validated - which may become institutions such as in ritualised operations) and efficacious (which presupposes a fit with the desired transformation).

36. Finally, it is because this axiological dimension is striated with concrete material aspects (be it the body, materials, substances or objects and/or machines) on which la *Technologie Culturelle* has focussed, that "mental realities", as Maurice Godelier defined them – such as specific cosmologies – become entangled in materiality. This entanglement, in turn allows these "mental realities" to acquire a concreteness as they are actualised in technical activities.<sup>56</sup> It is this capacity to realise "mental realities" that allows Yuk Hui to forge his concept of "cosmotronics", meaning "the unification of the cosmic order and moral order through technical activities"<sup>57</sup>. Hui goes so far as to specify that ". Human activities, which are always accompanied by technical objects such as tools, are in this sense always cosmotechnical". Every modality of action, in its smallest details, involving tools and instruments, and its treatment of the material itself, actualises and reveals a culturally-specific moral aesthetic. From there, following André-Georges Haudricourt's fertile proposal, it becomes clear that the technical treatment of plants or animals resonates with the treatment of others.<sup>58</sup> From Godelier to Hui, via Haudricourt and Philippe Descola, it becomes possible to suggest an analytical approach to technical phenomena in order to ethnographically to investigate their moral and, beyond that, political effect.

37. The analytical basis I have just presented could provide anthropology with the tools to understand technical phenomena - be they artistic, ritual or political practices - whether or not they are part of *technology*, understood here as a vernacular category of Euro-American modernity.

38. To do this, I will take as my starting point the three sets of interacting phenomena that the category of *technology* encompasses, according to Langdon Winner<sup>59</sup>: (1) processes and activities that include knowledge and skills formalised and or not in the form of science; (2) objects such as tools, instruments, machines, computer programs and algorithms; and (3) social organisations,

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<sup>54</sup> Latour, 2014, p. 508.

<sup>55</sup> Latour, 2007, p. 201-203.

<sup>56</sup> Godelier, 2015; see also Coupaye, 2012.

<sup>57</sup> Hui, 2017, p. 4.

<sup>58</sup> Haudricourt, 1987 [1962], pp. 227-285; see also Descola, 2005, pp. 154-156 and p. 448.

<sup>59</sup> Winner, 1977, pp. 10-11.

networks composed of multitudes of vertical (temporal) and longitudinal (spatial) chains of assemblages of objects and activities, which can sometimes be referred to as “infrastructures” and/or “technical systems”. By applying the adjective “technical” to activities, objects and organisations or systems, one should be able to take into account how these three levels and the ways in which they relate actualise moral values specific to a particular ethnographic context<sup>60</sup>.

39. Thus, the anthropological approach to techniques may contain two distinct and yet concomitant projects. The first project concerns the documentation and analysis of technical activities, technical objects and (socio)technical systems, and their relations and interrelationships, a project in which the adjective “technical” qualifies their practical and axiological dimension. The second project concerns the study of *technology/ la Technique* as a specific category, dealing with the way modern societies conceptualise *technology* as well as its operative role in the representations and practices that are associated with this category, following the example of what has already been proposed for, notably, *Nature*. In the absence of this reflexive attitude, any analysis that would have recourse to the category of *technology* could not do otherwise than offer a properly *imperialist* content.

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<sup>60</sup> See Coupaye, in press, 2022. In addition to activities, we know, since Gilbert Simondon and André Leroi-Gourhan, that technical objects are part of lineages; just as, since Bertrand Gille, Lewis Mumford and Thomas Hughes, technical networks are also the product of a social and political history.

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## LUDOVIC COUPAYE

Ludovic Coupaye teaches the anthropology of techniques at University College London (London, UK), and has taught the history and anthropology of the arts of Oceania at the École du Louvre. He has done fieldwork in Papua New Guinea on horticulture, rituals, aesthetics and techniques. He studies the relationship between arts, societies and the environment from the point of view of technical activities by intersecting French and English-speaking traditions.