*Hottoisian Accompaniment of Technoscience: A Practical Philosophy (?)*

Hyacinthe Amour Gnahy,

PhD candidate in Practical Philosophy and Applied Ethics at the Department of Philosophy, University of Sherbrooke

tinne.nebomin.amour.gnahy@usherbrooke.ca

Tel : (+1) 514 884 5320

Summary:

Today, biomedical technoscience has evolved beyond the reach of the past. Its evolution makes our societies complex and thus places us in the face of a paradox that is difficult to overcome. As technoscience arouses by its development, a real need for support, as much it makes impossible any formulation of this support. So much so that in the present text, we wonder with Gilbert Hottois: is it possible to develop a universally valid form of accompaniment to techno-scientific dynamics in postmodern societies as complex as ours? To this question, Hottois answers in the affirmative, but on the condition that one ¨re-think¨ the accompaniment of the technoscience while actualizing the philosophical discourse which is the origin of it.

Key words: Technoscience - modernity - postmodernity - Accompaniment - philosophy of technosciences - bioethical methodology - philosophical tradition - practical philosophy

**INTRODUCTION**

The modern era was characterized by a unified and universal science. This essentially logothetic science, inherited from ancient Greece (Plato and Aristotle), explained the world through its true representation. In modernity, technology, with its limited capacity, was understood as the application of science and therefore externalized from it, exerting no fundamental influence on humanity and nature. However, in our postmodern world, "technology is no longer external to science, which is no longer pure or fundamentally theoretical and discursive." (Gilbert Hottois, 1999) To express the transformation that modern science has undergone (the interweaving of technology into science) and highlight the resulting "operative dimensions - technological and mathematical," (Gilbert Hottois, 2006, p.25) Belgian philosopher Gilbert Hottois coined the neologism "technoscience" for the first time in 1978 in an article titled "Ethics and Techno-Science." Through the numerous possibilities it opens for humanity, technoscience emerges as a significant operator of symbolic disconnection that continually reshapes "our representation of the human being and society," (André-Lacroix, 2011, p. 118) to the point of creating risk societies (Ulrich Beck, 2001) From nuclear disasters like Chernobyl and Fukushima to numerous manipulations of life, including the recent and surprising birth of "GM babies" in November 2018[[1]](#footnote-1), it becomes evident that fundamental philosophy and its moral imperatives are rendered mute (Nietzsche, 1977), incapable of proposing or imposing an appropriate ethical symbolization for technoscience. This impotence leaves a pressing need to accompany technoscience in its unprecedented expansion. It is this need for accompaniment that justifies the birth and development of bioethics in the first half of the 20th century (1927) in Germany. We will delve into this analysis in the following text. But first, is it truly possible to develop a universally applicable form of accompaniment for the technoscientific dynamics in our complex[[2]](#footnote-2) postmodern societies? If so, under what conditions is this possible, and what are the stakes involved in such a bioethical approach?

In this text, I argue that through Hottoisian bioethics, which can be assimilated, from an operative perspective to practical philosophy, it is possible to develop an appropriate form of accompaniment for technoscientific dynamics today. Unlike his predecessors who attempted, unsuccessfully, to symbolize (accompany) Technoscientific Research and Development (TSR&D) based on ethical imperatives derived from traditional philosophy, Gilbert Hottois approaches the phenomenon through an adaptation of philosophy to the very phenomenon it is called to accompany. For this purpose, Hottois employs what he calls "the philosophy of technosciences." Such an approach reinforces the idea that while updating the accompaniment of technoscience is indeed essential, it must first involve a revision of the philosophy that generally underpins it. Thus, this text aims to defend, based on the Hottoisian corpus, the idea that reinvesting in the accompaniment of technoscience requires a prior reconsideration of the relationship between traditional philosophy and the world.

To strengthen such an approach, we will first examine the crisis of closed symbols that necessitates reinvesting in the accompaniment of technoscience (I). Next, we will analyze bioethics as the most dynamic part of the philosophy of technosciences (II). Finally, by synthesizing the previous points, we will explore the various stakes involved in Hottois's proposed accompaniment of technoscientific dynamics (III).

# FROM THE CLOSED SYMBOLS CRISIS TO THE REINVESTMENT OF SUPPORT FOR TECHNOSCIENCE

We must understand here by closed symbols, ˝The bioethical imperative˝ and ˝the ethics of responsibility˝ respectively formulated by Fritz Jahr and Hans Jonas, as forms of accompaniment of technoscience essentially based on fundamental philosophy. These forms of ethics hold our attention momentarily, because although morally founded, their various authors pose them as ready-made symbolizations or accompaniments, non-updateable, universally valid, and therefore applicable to all given times and situations.

Unlike Jonas who is well known to the public, for what he is a reference in the bioethical sphere, the name of the first quoted (Fritz Jahr) is very little present in the literature devoted to the question of the accompaniment of technoscience. However, the ontological approach of this author, which gives rise to his ethical position, fits perfectly with our present demonstration. Basically, Fritz Jahr is a German Protestant theologian who already in 1927 used the term bioethics[[3]](#footnote-3) in the title of an article[[4]](#footnote-4). Inspired by Kantian morality which he extends to all living beings, Jahr develops an ethics articulated around the solidarity of the human species with respect to other species (animal and plant). For him, animals and plants are moral partners of humans. Partners towards whom we have a formal obligation to maintain an appropriate posture or treatment. As if to enjoin humans to respect this moral partnership which binds it to its neighbors (animals and plants), the German theologian begins by recognizing in them the soul perceived until then as an exclusively human characteristic. Needless to recall that it is the soul considered by the ancient Greeks as a portion of the divine momentarily lost in man, which, while bringing the latter closer to transcendence, suddenly gives him his dignity. (Hyacinthe Gnahy, 2017, p.180-193)

By also attributing this soul to other species, Fritz Jahr intends to sanctify them in the same way as the human species and make them inaccessible to technoscientific operations. In short, from Jahr's perspective, the proper treatment that man and his techno-scientific power must give to plants and animals is one in which the latter are considered as ends in themselves and not as mere means. Evidenced by the ˝bio-ethical˝ imperative[[5]](#footnote-5) on which his approach leads.

This normative approach to the support of technoscience, essentially inspired by the biopsychology of Rudolf Eisler (1873-1926) and especially by Kantian philosophy, considerably influenced Hans Jonas, another German author. Indeed, a little more than half a century later (1979), Hans Jonas took up the bioethical imperative of Fritz Jahr in his famous book The Responsibility Principle. Essay for an Ethics in a Technological Civilization[[6]](#footnote-6). According to Hans Jonas, present generations have obligations towards future generations. And that these obligations require us to show great responsibility today. The ethics of responsibility that he is going to release, is that which is committed to the task of limiting human action, while indicating to man how to act in the form of an ethical imperative: "Act to so that the effects of your action are compatible with the permanence of an authentically human life on earth. (Jonas Hans, 1990)

The attacks against Jonas' work are numerous. And as these criticisms are not the subject of our present study, then we will limit ourselves only to that of Gilbert Hottois. Indeed, speaking of the hidden designs of this work, Gilbert Hottois will say in an article entitled Ethics of responsibility and ethics of conviction, that "Hans Jonas sought to pass off as an ethics of responsibility an attitude - a morality and a political - which is much more, in the final analysis, about the ethics of conviction. » (Gilbert Hottois, 1996, p.490)

In this article, Gilbert Hottois first evokes the confusion created by Jonas' work around the ethics of responsibility, the origins of which can be found in the thought of the German sociologist Max Weber (1864-1920), before restoring the distinction that this author makes between the two forms of ethics (the ethics of responsibility and the ethics of conviction). According to Hottois, the ethics of responsibility as thought by Weber, is concerned with the concrete consequences of action on others. As a result, the ethic of responsibility is and must be that of the man of action, the philosopher of the technosciences, he who, in our postmodern era, works to support the growing rationalization of the whole of Company.

As for the ethics of conviction, it is a matter of axiological rationality as its sole concern is not to betray a value or not to transgress a pre-established norm. Looking more closely, we immediately realize that the Jonassian ethics of responsibility, which degenerates into an ethical imperative, curiously resembles the Weberian ethics of conviction.

In short, the approach of the two German authors presented in the previous lines, makes it possible to see the accompaniment of technoscience as a kind of assignment in which it is fixed, given, attribute in an authoritarian way, an orientation to technoscience. In other words, the forms of morally based support proposed by Jahr and Jonas aim to enclose technoscience in a closed symbol in the hope of containing and thus slowing down its development.

What does accompaniment originally refer to, this polysemous notion that is massively used in everyday language?

It was around the 1980s and 1990s that the term ˝accompaniment˝ appeared for the first time in medical vocabulary, as a relational activity designating the assistance provided by medical care providers to people in end of life. But little by little, the term accompaniment will expand to the point of going beyond the framework including only people at the end of life[[7]](#footnote-7), to extend to all people admitted to care and recognized as vulnerable as a result. In its application, the term ˝accompaniment˝ will imply an active position of the two people brought into contact: the health care provider and the person cared for (the patient). In this relationship, the carer strives to respect the space of freedom of the cared for: he walks with the cared for, at the pace of the latter, without however imposing a path to follow.

Basically, accompaniment as originally understood in the medical field, is a thoughtful act, carried out with method: a fine adaptation of the help to be provided to the patient. There is a huge gap between accompaniment as understood by Jahr and Jonas and what this term refers to from an original point of view.

However, from the Hottois perspective, the term ˝accompaniment˝ keeps entirely or almost its original definition, before being referred to technoscience. Thus, the Hottois philosopher, as if to testify to the adaptation of his accompaniment to technoscience, will be designated by the term ˝philosopher of technoscience˝.

This Hottoisian approach of the philosopher who adapts his discourse or his accompaniment to his object, is all the newer in that it suggests that philosophy, to borrow the term from Christiane Vollaire, has gone against the tide of these original characteristics in two ways. "On the one hand, its claim to universality which strongly frees it from anchoring in a territory, and on the other hand, the requirement of objectification that it imposes on itself which would suppose that the relationship intersubjective which threatens its neutrality" (Christiane Vollaire, 2017). In other words, the Hottois philosopher lends the image of a break between philosophy and language, this instrument of symbolization which has always characterized him, and what is more, influences from a normative point of view, the different forms of ethics worked out without success, by the predecessors of Hottois, to accompany technoscience.

Clearly, when Jahr and Jonas think about the support of technoscience, they give the impression of misunderstanding what contemporary science really is, of which Frédérick Bruneault rightly evokes a paradoxical aspect[[8]](#footnote-8).Their approach, while aiming at the valorization of the natural-cultural man, devalues at the same time the technique and the material operation which they consider as not helping to the constitution of this man: natural-cultural. There is a clear externalization of the technique of culture identified with the symbolic order. However, this would basically imply "a state of stable or very slowly evolving techniques, and of limited scope" (Gilbert Simondon, 1965).However, following Hottois in *Faith in Language[[9]](#footnote-9)*if we consider that new technoscientific techniques and inventions are, in the full and immediate sense of the term, cultural; cultural in the sense that they become the driving force and vector of culture, then everything changes. At the head of this change, our approach to technique and with it, the forms of support that result from it. In other words, it is essential to reinvest the support of technoscience as understood by Fritz Jahr and Hans Jonas.

But given that such a conception of accompaniment is the emanation of moral philosophy, then this reinvestment must preside, in our view, over the revision or updating of the position of philosophy in relation to the world (the technoscientific universe). This means the need to internalize technique in philosophical discourse; Better, to make practical the standards generated by the fundamental philosophy with regard to technoscience, so that these pass from their initially static and absolute character to an evolving, contextual character, in short, so that they are commensurate of the techno-scientific dynamic that they intend to support.

It is precisely the reinvestment of the accompaniment of technoscience underpinned by this updating of the position of philosophy in relation to the technoscientific universe that the Hottois term ˝philosophy of technoscience˝ translates.

Authors such as Pierre Ducassé and Gilbert Simondon have also supported this thesis of updating the relationship of traditional philosophy vis-à-vis the techno-scientific world. Indeed, in his book *Les techniques et le philosophe[[10]](#footnote-10)*, Pierre Ducassé highlights the impotence of philosophical discourse in the face of technology and the dangers that this entails. For Ducassé, the impossibility of fundamental philosophy to satisfactorily symbolize the techno-scientific universe is because this philosophy was ignorant of the operational dimension of contemporary technique. He says to this effect "that a thought which believes to cancel the obstacle by ignoring it, before having appreciated, then assimilated its resistance, refuses its own future and runs the risk of being subalternized in a radical way, by a silent overtaking on the level of action" (Pierre Ducassé, 1958).

Even if he deviates from his peers for what he thinks is the support of technoscience in the constitution of a technical culture, Gilbert Simondon shares with them the idea of the impossible reduction of the technoscientific dynamic to the authoritarian discourse of fundamental philosophy. For him, in fact, the problem of the impotence of symbolization lies in the fact that the representations and concepts of the traditional literary culture perpetuated by teaching and carried by the dominant philosophies (fundamental philosophy) turn out to be outdated and science. Consequently, they are no longer able to properly articulate the techno-scientific civilization[[11]](#footnote-11).

It is well known that Simondon will propose the development of a technical culture as an appropriate way to support technoscience. This text will not dwell on this Simondonian proposal strongly criticized by his peers. However, to return to the original idea, let us note that beyond the contradiction that it shows in the terms that constitute it, the philosophy of technoscience appears in the Hottois perspective as a task to be accomplished in order to be able to accompany the technoscience which exceeds all “philosophy, all symbolization, all discourse, all ethics: everything that makes man ˝natural-cultural˝”.(Gilbert Hottois, 2001, p. 339-356)

# THE PHILOSOPHY OF TECHNOSCIENCES, BIOETHICS: HOTTOISIAN SUPPORT THROUGH ACTION

2.1. The philosophy of technoscience or the reinvention of the methodological framework of the French-speaking philosophical space

Like the Simondonian technical culture with which it is generally associated, the philosophy of technoscience forged by Gilbert Hottois as a means of assimilation and appropriate accompaniment to technoscience, has been the subject of numerous protests mainly from philosophers French in technique: Jacques Ellul, Michel Henry and weakly, Pierre Ducassé. The first named and the most categorical maintains that “there is no philosophy of technique possible and no advantage of technical culture. » (Jacques Ellul, 1988)

Michel Henry in *La barbarie*[[12]](#footnote-12) is in the same vein as Ellul. Ducassé, certainly the most nuanced in his remarks, maintains “that there is no philosophy of techniques and that there cannot be. At least if we follow certain radical pretensions of philosophical thought. (Pierre Ducassé, 1958) These various objections made to the philosophy of technoscience are due to the fact that Hottois, who is a French-speaking author, introduced into his universe the oxymoron: ˝philosophy of technique˝ hitherto limited to Germany where it saw the day[[13]](#footnote-13) and to the Anglo-American world where it first slowly developed under the title of philosophy of science.

Clearly, long before the Hottois attempt to create his philosophy of technoscience criticized by his peers, the French-speaking world was dominated by analytical and phenomenological currents. Currents that postulate that it is exclusively through language, defined as its essence and its end, that the natural-cultural man is won and lost. As such, this dominant philosophical anthropology of the French-speaking philosophical space “claims to constitute the basis of any possible humanism and to exclude any anthropotechnical statement or enterprise. (Gilbert Hottois, 2005, p.49-64) The philosophers of the French-speaking world generally use such conceptual frameworks to adopt an overhanging position in relation to the world, and to think about the accompaniment of the RDTS.

From the Hottois perspective, the creation of the philosophy of technoscience should ultimately make it possible to fill the void of the philosophy of technology in the French-speaking world. Not only that, but also and above all, implicitly allowing to reform the methodological framework of which this void was the cause and from which the Franco-German philosophical tradition thinks of the accompaniment of the RDTS. Doing so, Hottois recognizes, following Simondon and Ellul (although the latter is opposed to a possible philosophy of technology), technoscience as the issue of the century which brings new challenges to philosophy and which more is, should be internalized to the discourse of the latter to be better assimilated.

This Hottois approach, which goes against the current of that of his peers in the French-speaking philosophical space, gives a certain particularity to his approach to supporting technoscience. This is evidenced by its approach methodology to the ethical issues raised by RDTS in the context of bioethics.

* 1. The methodology of Hottois bioethics

It is even more difficult to retrace the precise history of bioethics than to determine a single founding event. It is so true that its appearance and development are linked to a plurality of elements and factors. However, let us summarize the situation with Hottois: bioethics is a cultural phenomenon resulting from a double revolution: social and biotechnological. Social because bioethics was born from the crisis of collective, stable, and unifying values and norms that goes hand in hand with the modern development of the individualism of people and the pluralism of societies. Biotechnics, because bioethics is the effect of the crisis or mutation of naturalistic and paternalistic traditional medicine which goes hand in hand with the development of modern experimental medicine and biomedical technoscience today.

American oncologist Van Rensselaer Potter is named as its founder[[14]](#footnote-14). Indeed, for Potter, bioethics is a bridge between the two cultures that no longer seem to speak to each other: our axiological values and the booming technoscience. If its founder conceives it in this way, the fact nevertheless remains that bioethics has allowed itself and still allows itself today to be defined or approached differently according to the culture or the philosophical tradition to which the person engaged in such an exercise belongs. Thus, it is not uncommon to find in the bioethical literature, divergent ethical approaches depending on whether they are inspired by one or the other philosophical tradition (Franco-European/Franco-German and Anglo-American). Each of these two great antagonistic philosophical traditions within bioethics is characterized by a bioethical methodology that is reflected in its approach to supporting technoscience.

Note that from the perspective of Gilbert Hottois, “the methodology specifies the procedures to be followed to provide an answer to bioethical questions” (G. Hottois and J-N Missa, 2001). Thus understood, the characteristic methodology of the Franco-German philosophical space, the foundation of its bioethical positions, is essentially of Kantian inspiration. It therefore underlines, “the requirement of non-instrumentalization and respect for the autonomy and dignity of persons. It articulates quite closely with the ethics of human rights” (G. Hottois and J-N Missa, 2001). Unlike the Franco-German methodology based on a philosophical system (Kantism), the principlism[[15]](#footnote-15) that characterizes Anglo-Saxon bioethics is not based on any clearly articulated moral theory. Its methodology is a kind of ethical pragmatics as Hubert Doucet writes. Since the bioethical approach in principlism is centered on four principles (autonomy, justice, beneficence, and non-maleficence) whose application is supposed to allow the resolution of ethical dilemmas, particularly in the medical environment.

However, identifying himself as "a thinker of operative and active immanence (...) and in more classical philosophical terms, quite close to contextualism or relationalism" (G. Hottois, 1999), Gilbert Hottois represents a bioethical conception based on a methodology close to that of the Anglo-American tradition.He thus opposes the bioethical orientation and the support of technoscience that his French-speaking origin predestined for him: fundamental bioethics based on an exhaustive and unitary methodology. Because for him, bioethics appears from the outset as “a most developed part of technical philosophy” (G. Hottois, 1988) to which it is impossible to present an exhaustive and unitary conception by way of methodology.

The fact is that bioethics is characterized by imprecision in the diversity and nature of the realities it covers. Moreover, it is relative to questions of value and choice which are dependent, from their very formulation, on the subjectivity of individuals and the intersubjectivities of collectives. Thus, in bioethics, according to Hottois, we find all the questions of philosophy. Whether ancient or contemporary, philosophy is characterized by controversy rather than by the universal agreement that the Franco-German tradition implicitly claims to aim for. As if to really mark his distance from this tradition and its unitary methodology, Hottois defines bioethics as:

“a set of research, discourses and practices, generally multidisciplinary and pluralistic, aimed at clarifying and, if possible, resolving questions of ethical significance raised by biomedical and biotechnological R&D within societies characterized to varying degrees as individualistic, multicultural and evolving.” (G. Hottois, 2004)

From the perspective of Gilbert Hottois, bioethics is less a discipline than a multidisciplinary and interdisciplinary practice capable of properly shedding light on any problem in a multilateral manner. But to better understand the nature and methodology underlying Hottois bioethics through such a definition, it is necessary to listen to Guy Durant's very explanatory reading of it. For him indeed,

“The word research refers to all work of reflection, analysis, historical, sociological investigation, etc. Discourses refer to discussions and publications of various forms, on various themes, which contribute to the creation of a kind of ˝bioethical knowledge˝. The practices relate to the actions of individuals and those of the various committees, centres, commissions set up by the public authority, healthcare or research institutions, universities, or individuals (…)” (Guy Durand, 1999)

Although reading Guy Durand has brought out the multidisciplinary and interdisciplinary character, and the (rooted) practical dimension of Hottois bioethics, Durand has passed over in silence, however, the two main origins of the bioethical problems around which the bioethical methodology is articulated. Hottois: techno-scientific R&D and multiculturalism. According to Hottois,

“R&D continually creates novelties characterized both by independent physical operability and by strong, largely unpredictable, social consequences and effects. Multiculturalism refers to the diversity of religious, philosophical, and moral traditions as well as the diversity of special interests, but also to the inequality and asynchrony that characterizes many regions of the world.” (G. Hottois, 2004)

From technoscientific R&D and multiculturalism diagnosed by Hottois as being the two origins of bioethical problems, he articulates in his book What is bioethics? its methodological indications for a better practice of bioethics in postmodernity.

The first most important methodological requirement in the eyes of Hottois is to take into consideration the complexity of our technoscientific and multicultural civilization. Consideration which includes a double imperative of a multidisciplinary and pluralistic approach to the various problems raised by techno-scientific R&D. By imperative of the multidisciplinary approach, it is necessary to understand, the respect of the methodology specific to each discipline which takes part in the bioethical debate. Moreover, the fact that there may be intradisciplinary disagreements requires that the so-called Hottois pluralism be taken into consideration, with regard to multidisciplinarity, especially when it comes to appealing to disciplines such as law, theology and philosophy. In this logic, the pluralism which is also to be respected is to be understood in a double sense. On the one hand, classical pluralism: that which is the ferment of the various ideologies, philosophies, religions, moral traditions present in modern societies. On the other hand, a pluralism which developed the most during the second half of the 20th century: the pluralism of interest associations, NGOs, and other pressure groups.

The second basic methodological requirement that Hottois indicates in his work is what he calls the processual and evolutionary complexity characterizing our civilization. In relation to this second indication, Hottois postulates that the complexity of our civilization that needs to be understood and managed is not simply structural and synchronic; it is procedural and diachronic. Well known, the engines of its dynamism are.

“(…) technoscientific R&D which constantly discovers and invents products, procedures and systems capable of profoundly affecting mores, the relationship of the individual to himself, to the other, to the group, in short personal identity and the socio-political fabric, (…) and the desire which, sheltered from pluralism, individualism and the market, is expressed more and more freely and diversely, ad infinitum” (G. Hottois, 2004).

The articulation of our global societies to the flow of new artifices generated by these two engines is difficult, as Hottois says. Difficulty which, according to Hottois, arises from two essential orders or problems:

“It is first a problem of equality and justice, especially between the developed countries and the developing countries which do not have access to the latest discoveries and inventions, to the plan (...) of survival such as new drugs to fight AIDS or malaria. But it is also a problem of rhythm, very sensitive even within developed societies. The lag of morality, law, and institutions in relation to biomedical R&D is obvious. The time required to negotiate and formulate new standards, given the heterogeneous multitude of stakeholders, is such that when they are finally published, the new standards are already overtaken by R&D. And the time required for the symbolic, cultural, strictly moral assimilation (evolution of mores, habits, representations, and basic values) of innovations by the mass of citizens is still much longer than the time necessary for the experts who are working on developing new standards. (…)” (G. Hottois, 2004)

All in all, the Hottois bioethical methodology reinforces the idea that the management of a world as procedural and evolving as ours does not require the simple replacement of its old immutable structures (the axiological values, the law, the conception of the world, etc.) by new structures that are also immutable. But it requires a certain ability to support and assimilate the evolution of our societies. In other words, from the perspective of Hottois, the accompaniment of the RDTS requires procedural rules and institutions, with revisable conclusions, sensitive to the empirical change of contents and contexts. Because says Hottois, the management of the synchronic and diachronic complexity of our technoscientific and multicultural, open, and evolving societies, is neither operable because of fundamentalist and essentialist rules, characteristics of closed and immobile societies. Because

“The latter have a metaphysical or ontological conception of reality, incompatible with the idea that the most real is ˝ where the future is invented ˝. Within a global, techno-scientific, and multicultural civilization, fundamentalisms are hardly acceptable except as individual or community beliefs.” (G. Hottois, 2004)

This is also what justifies to a large extent the significant development of new institutions such as the various bioethics committees, which we will not dwell on here. However, we will focus on the challenges of the Hottois support of the RDTS carried by its bioethical methodology.

# THE CHALLENGES OF HOTTOISIAN SUPPORT FOR THE TECHNOSCIENTIFIC DYNAMICS

It would be very curious to hear what Gilbert Hottois himself would answer, if we addressed the question to him to know what the term ˝issue˝ refers to first in his understanding, then what could be that of his conception of the accompaniment of technoscience. To this question, Hottois would say bluntly that.

“What is at stake is what counts and what is to be defended because it is threatened. If I had to answer in a few words, he said, I would say that the essential issue is the safeguarding and extension to all individuals of effective freedom.” (G. Hottois, 1995)

The freedom Hottois is talking about here is to be understood in the sense of the morphological freedom explicitly claimed by the Swedish transhumanist philosopher Anders Sandberg. In fact, he defends morphological freedom as a fundamental right in a liberal democratic society against the abusive powers of the state or any other power such as the church. In other words, it is a question not only of the freedom for the individual to fully dispose of his body and its products as they were naturally given to him, but also and above all to modify it physically at will. According to Anders Sandberg, such freedom is not without consequences for cramped medical practices in a therapeutic framework which, in principle, only admits one health and does not recognize that the patient's wishes are important elements in the definition of health. Thus, morphological freedom necessarily implies a redefinition of the concepts of health and disease as well as the limits of the therapeutic paradigm (Anders Sandberg, 2013,). As Hottois puts it, “one expression of morphological freedom is transgender and transsexual claiming.” (G. Hottois, 2018)

Generally, the question of morphological freedom, which inevitably leads to that of the wearing of the body and its products on the market, is the focal point of the opposition between the Franco-German and Anglo-American philosophical traditions in bioethical debates. In this opposition, the arguments put forward by each of these two traditions, is essentially a function of its philosophical background. As mentioned in the previous section, the philosophical and ethical background of the Franco-German tradition is of Rousseauist and Kantian inspiration. Indeed, this tradition received from Rousseau, the idea that the individual only reaches freedom because of his belonging to the social body and therefore, of his participation in the general will. It is therefore the state that creates the free individual as a citizen. As a result, no individual freedom can take precedence over the general will or the public good that the Nation-State expresses. From such a perspective, the individual body is perceived as an integral part of the social body and individuals are more the usufructuaries of it than the owners: they cannot therefore dispose of it as they wish.

Also, the bioethical prohibition of the objectification and instrumentalization of the individual in the name of the dignity of the person is of Kantian origin. Because according to the principle of the autonomy of reason in Kant, the exercise of individual freedom cannot come into conflict with the exercise of reason, which is universal. Even if it is true that for Kant the person is not the body, the fact remains that through the various traditions and philosophical and religious arguments, we note a certain inseparability of the person and the body, to which the dignity recognized in the person is automatically transferred.

Moreover, the Anglo-American tradition very often indexed as wanting without any reserve, to pour everything into the free market, including the body and its products, has for philosophical background, Hobbes and especially, Locke. According to Locke, individuals have non-violable natural rights, including, among others, the right of ownership which is basically a right of appropriation. For natural things belong to each and no one. However, a thing becomes the lawful property of a person when it has been the object of the activity carried out by that person. In other words, it is through work variously understood that a thing initially without a master finds its owner. The thing thus appropriated becomes a good that can be exchanged or sold at will by its owner.

In short, the issue targeted by the Hottois support of technoscience: the safeguarding and extension to all individuals of an effective freedom, finds its realization when we consider ourselves from the Anglo-American perspective.

**CONCLUSION**

The present study, which concludes here, started with hesitation in asserting that Hottois' accompaniment of technoscience can be assimilated, from an operative point of view to practical philosophy. This hesitation stems from the fact that Hottois has never used this oxymoron ("practical philosophy") in any of his texts. However, by addressing the question of technoscience accompaniment in Hottois' work, as done here around the following question: "Is it really possible to develop a universally valid form of accompaniment to the technoscientific dynamics in postmodern societies as complex as ours?", one can realize that the philosophy of technoscience he promotes, which also reflects his genuine concern to ground the various moral theories generated by traditional philosophy in the world, in order to properly accompany technoscience, closely resembles this approach of practical philosophy.

The philosophy of technoscience, as a reflection or an accompanying tool, essentially becomes action upon the technoscientific universe. In other words, the Hottoisian philosopher of technoscience does not stand at a distance from the technoscientific world to apprehend it with an objective, overarching perspective. Instead, they are an integral part of the world, considering its changing nature to formulate a pragmatic accompaniment. It is precisely at this point, which marks the shift of philosophy from its traditional position (a position of detachment from the world) to a position that actively participates in action, that Hottois' accompaniment of technoscience and practical philosophy converge.

GENERAL BIBLIOGRAPHY

Anders Sandberg, "Morphological freedom: Why we not just want it, but need it," in The Transhumanist Reader, Hoboken, John Wiley & Sons, 2013.

André-Lacroix, "The New Human Contingency," in Redeploying Practical Reason: For a Pragmatic Ethics, Liber, Montreal, 2011.

Christiane Vollaire, For a field philosophy, CREAPHIS, 2017.

Frédérick Bruneault, "How to Define an Ethics for Technological Civilization? The Contribution of a Joint Reading of the Thoughts of Karl-Otto Appel and Hans Jonas," in Laval Théologique et Philosophique.

Gilbert Hottois and Jean-Noël Missa, New encyclopedia of bioethics, De Boeck University, 2001.

Gilbert Hottois, Essays in bioethical and biopolitical philosophy, Vrin, 1999.

"Technoscience: from the origin of the word to its current uses," in RECHERCHE EN SOINS NURSING, N° 86 September 2006, p.25.

"The impossible symbol or the question of 'technical culture'," in L'esprit du temps, 1994.

"Ethics of responsibility and ethics of conviction," 1996, Theological and Philosophical Laval.

"From anthropology to anthropotechnics?" Kimé, 2005, n°25.

"Faith in language," in Jean-François Mattéi, Philosopher in French, PUF, 2001.

"From anthropology to anthropotechnics?" Kimé, 2005, n°25.

"The philosophical and secular issues of bioethics," Revue internationale d'éducation de Sèvres, 1995, published online on March 16, 2015.

"The philosophy of technosciences," in texts compiled by Lazare Marcelin Poame, PUCI, 1997.

“Essays in bioethical and biopolitical philosophy,” Paris, Vrin, 1999.

"Assessing technique," Paris, Vrin, 1988.

"What is bioethics?" Paris, Vrin, 2004.

"What is bioethics?" Vrin, 2004.

"The philosophical and secular issues of bioethics," International Review of Education of Sèvres, 1995.

"Technosciences and Transhumanism," in Emmanuel Hirsch et al., Treatise on bioethics, ERES, 2018.

Gilbert Simondon, "Culture and technique," in Bulletin de l'institut de philosophie-morale et enseignement, Brussels, 1965.

Gilbert Simondon, "On the mode of existence of technical objects," Éditions Aubier-Montaigne, 1958, and "Culture et technique," in Bulletin de l'institut

1. The announcement of this birth was made on the internet by Chinese scientist He Jiankui, who is the author of the research. Through his research, the Chinese scientist had just challenged the myth of creation upheld until then by religious traditions. [↑](#footnote-ref-1)
2. Our postmodern societies are individualistic, pluralistic, multicultural, and made up of diverse interest groups. [↑](#footnote-ref-2)
3. This use has been recognized as a Hapax. [↑](#footnote-ref-3)
4. "Bioethics: overview of the ethical relationships between man, animals and plants", in Kosmos: Handweiser für Naturfreunde, vol. 24 [↑](#footnote-ref-4)
5. "Fundamentally respect each living being as an end in itself and treat them accordingly, to the extent possible." [↑](#footnote-ref-5)
6. Trad. Jean Greisch, Ed. Champ essais, 1990 [↑](#footnote-ref-6)
7. See KELVOA, Manifesto: for a philosophy and ethics of support, 2015 [↑](#footnote-ref-7)
8. See Frédérick Bruneault, *How to define an ethics for technological civilization?* : The contribution of a joint reading of the thoughts of Karl-Otto Appel and Hans Jonas, in Laval theological and philosophical, 68, (2), 335-357 [↑](#footnote-ref-8)
9. in Jean-François Mattéi, Philosopher en français, PUF, 2001, pp. 339-356 [↑](#footnote-ref-9)
10. Paris, PUF, 1958 [↑](#footnote-ref-10)
11. See Gilbert Simondon, On the mode of existence of technical objects, Éditions Aubier-Montaigne in 1958 and Culture and technology, in Bulletin de l’institut de philosophie-morale et enseignement, Brussels, 1965 [↑](#footnote-ref-11)
12. Paris, Grasset, 1987, 247 p [↑](#footnote-ref-12)
13. The expression philosophy of technology was born with the German philosopher Ernst Kapp who published in 1877 a work entitled: Grundlinien einer philosophie der technik (Basics of a philosophy of technology). The main thesis of this book is the analogy between the organic and the technical. See Lazare Marcelin Poame, Ethics and technique in the French-speaking philosophical space, in Le korè, Presses Universitaires de Côte d’Ivoire, pp. 141-154 [↑](#footnote-ref-13)
14. The term bioethics would have appeared for the first time, in 1970 in an article by Potter entitled: “Bioethics, science of survival” and taken up by the author in 1971 in a book: Bioethics: bridge to the future. [↑](#footnote-ref-14)
15. According to Eric Delassus in Critical Analysis of Principlism in Biomedical Ethics, Principlism is a moral theory inspired by both utilitarianism and Kantianism, a rather consequentialist morality (utilitarianism) and deontology based on intention (Kantianism). [↑](#footnote-ref-15)