

Technomoral Financial Agents: Ethics in the Fintech Era

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The discussion on the future of finance, with particular reference to the fintech (financial technology) sector, is lively in academia (Bussmann, 2017; Lynn, Mooney, Rosati, & Cummins, 2019; Turner et al., 2010), among practitioners (e.g. KPMG International, 2018; PwC, 2017), and in the public arena (e.g. in Europe and in the USA, see Karakas & Stamegna, 2017; Mnuchin & Phillips, 2018; Stamegna & Karakas, 2019). It is part of the wider debate on the future of work (World Economic Forum, 2018) and the disruptive wave of the Fourth Industrial Revolution (Schwab, 2016).

The future of finance shares some of the same questions and concerns about the future of work: whether and to what extent artificial agents will be able to replace human agents in their daily jobs; how

employment will be affected; what new occupations will be generated by technology, and consequently which new roles will human agents be able to perform (Bartleby, 2018; World Economic Forum, 2018). Specifically in reference to finance, this debate mainly concerns the rise of the fintech industry and the increasing automation of financial activity (Chishti & Barberis, 2016). Can financial technologies replace what traditional finance currently encompasses? Which jobs will be completely automated and which new ones will be created in the future of finance (Mancher, Huff, Grabowski, & Thomas, 2018)? How is the generation of trust affected (Greiner & Wang, 2010)? How will regulation keep up with the pace of technological change (Treleven, 2015)?

La discussion sur l'avenir de la finance, avec une référence particulière au secteur de la Fintech (technologies financières), est animée à la fois dans le monde universitaire, chez les praticiens et sur la scène publique. Elle fait partie du débat plus large sur l'avenir du travail et la vague disruptive de la quatrième révolution industrielle. Alors que le débat sur l'avenir de la finance est particulièrement riche et animé, il n'en va pas de même pour le débat sur l'avenir de l'éthique en finance. L'analyse éthique menée jusqu'à l'avènement de la Fintech peut-elle encore s'appliquer à cette nouvelle vague de l'activité financière?

While the debate on the future of finance is particularly abundant and animated, the same cannot be said for the debate on the future of ethics in finance. Is the ethical analysis conducted up until the advent of fintech still applicable to this new course of financial activity? Should the moral standards required of financial agents be updated in light of the changing context? Is it necessary to develop a techno-financial ethics for techno-financial agents?

The aim of this article is to look at the future of ethics in finance in order to advance a theoretical and practical proposal, guided by three questions:

- 1) What kind of ethical reflection is able to support the future of finance?
- 2) What are the virtues that financial agents need to develop, in order to be excellent financial professionals and excellent people in the fintech era?
- 3) How can we implement an educational strategy with which to train technomorally virtuous financial agents in the fintech era?

In order to answer these questions, the article is organised as follows. Section 1, answering the first question, shows the relevance of a first-person ethics for present and future financial activity. In response to the second question, Section 2 compares the classical virtues with the virtues required of financial agents in the fintech

era. This section covers the main theoretical contribution of this article concerning the development of the technomoral virtues of financial agents. Section 3 suggests guidelines to implement curriculum changes in finance education according to the proposal advanced by this article, thereby providing an answer to the third question.

1. Aristotle and Fintech: An Agent-Centred Ethics for Finance

What sort of ethical reflection is able to support the future of finance? The word “ethics” is probably one of the most misused in different domains of human activity. Everyone speaks about “ethics” and the importance of being “ethical.” However, when it comes to providing a definition, it is hard to characterise what “ethics” really is.

The philosopher Abbà offers an insightful classification of the different approaches to ethics (Abbà, 1996). He distinguishes two ways of looking at ethical enquiry: a first-person and a third-person approach to ethics. The first-person approach views ethics as the discipline that asks what is the good life for human beings, a life worth living. This approach looks at a person's actions in the context of their life understood as a narrative unity, oriented to their flourishing, to the realisation of the best version of themselves. Aristotle can be considered the father of this approach (Aristotle, 2000). Virtue ethics is the label under which this

Tout le monde parle d'«éthique» et de l'importance d'être «éthique». Cependant, il est difficile de définir ce qu'est réellement l'«éthique». Le philosophe Abbà distingue une approche de l'éthique à la première personne et à la troisième personne. Aristote peut être considéré comme le père de l'approche à la première personne, qui considère l'éthique comme la discipline qui cherche à savoir ce qu'est une vie bonne pour les êtres humains, une vie digne d'être vécue. L'approche à la troisième personne quant à elle considère l'éthique comme la discipline qui répond à des questions telles que: cette action est-elle licite ou illicite? Cette action est-elle conforme aux normes existantes? Les théories éthiques déontologique et utilitariste sont des exemples de cette approche.

first-person approach to ethics is generally known. On the other hand, the third-person approach views ethics as the discipline that answers questions such as: Is this action licit or illicit? Does this action comply with existing norms? Under the category of a third-person ethics, it is possible to collect deontological ethical theories (e.g. Kant), approaches typical of Utilitarianism (e.g. Bentham), and more recent theories on neo-contractualism and justice (e.g. Rawls).

Similarly to the first-person/third-person distinction, Annas (1993) suggests a distinction between agent-centred and act-centred approaches to ethics. She clearly explains how “ancient ethics centres on the notions of happiness, of virtue and of the agent’s deliberation about his life as a whole” (Annas, 1993, p. 5); while modern ethical theories tend to consider “isolated problems in the abstract” (Annas, 1993, p. 124) and to view morality as “punitive or corrective” (Annas, 1993, p. 4). Ancient ethics can thus be considered “agent-centred,” while modern ethical theories are “act-centred.”

In the ethics of finance, the debate has mainly relied on third-person or act-centred approaches to ethics: What is it licit to do in this particular situation? Is this course of action “ethical?” Thinking about the diffusion of codes of ethics, compliance departments, and standards of practice, it is easy to retrace the origin of the ethical evaluations of financial activity

in deontological and Utilitarian theories. The main textbooks on the ethics of finance also generally prioritise the description of the morality of certain acts or situations without considering the life of financial agents as a whole, or how they can grow in the virtues. The virtues of those working in finance are actually a marginal element of the majority of the most used and renowned textbooks in the field (e.g. Boatright, 2010, 2014).

The dominance of a third-person approach to the ethics of finance can be retraced in the history of philosophy. Ancient virtue theory was obscured during the history of ideas,¹ and the publication of Anscombe’s essay *Modern Moral Philosophy* (Anscombe, 1958) is generally recognised as the beginning of the rediscovery of an ethics centred on the virtues of human beings, rather than merely act-centred or duty-oriented. Since then, reflection on the ethics of business – which can be considered a parallel field to the ethics of finance – also rediscovered an ethics of the first person. A recent handbook illustrates just how broad is the scope of virtue ethics in business (Sison, Beabout, & Ferrero, 2017), and the work of the Neo-Aristotelian philosopher Alasdair MacIntyre has a particular influence on teaching and research about virtue ethics in business (Beadle, 2017).

¹ The analysis of the reasons why this happened would go far beyond the scope of this article. For an accurate overview, see MacIntyre, 2007 [1981].

Virtue Ethics in Fintech: Excellent Financial Agents and Excellent People

Although its rediscovery has happened at a slower pace than in business ethics, virtue ethics is currently a presence in academic research on the ethics of finance (e.g. Sison, Ferrero, & Guitián, 2019). Alasdair MacIntyre's critical reflections on finance have also sparked a considerable debate in this growing discussion on virtue ethics in finance (e.g. Ferrero & Sison, 2017; Robson, 2015; Rocchi, 2019; Rocchi & Thunder, 2019; West 2018; Wyma, 2015). However, too little has been done so far about shaping the education of financial professionals according to the standards of virtue.

The adoption of virtue ethics in the context of financial activity holds that the analysis of a particular activity must take into account the life of the acting person (i.e. the financial agent or manager) as a narrative unity, and consider the social context in which the activity happens. On the one hand, at the level of personal ethics, a person tends to their personal development, which

ultimately concerns their happiness (Annas, 1993; Aristotle, 2000; MacIntyre, 2007); and the virtues are those specific qualities of character which enable a person to flourish, the habitual dispositions with which to pursue the life worth living (Aristotle, 2000). On the other hand, virtue ethics informs reflection on life in society, considering the common good as the ultimate end of social life and as the horizon of human work (MacIntyre, 1998). Ultimately, from the perspective of virtue ethics, ethics can be defined as “a guide for human excellence” (Melé, 2009, p. 10).

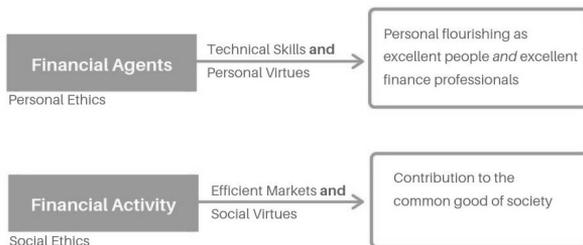
Figure A synthesizes this dual tendency to personal flourishing on the level of personal ethics and to the common good on the level of social ethics.

Applying this perspective to the ethics of finance brings to the forefront the need for a characterisation of the personal virtues of those working in finance, and of the contribution of finance to the good of society.

There are academic contributions that develop both personal and social ethics in finance. A wide range of authors have worked to demonstrate

L'adoption de l'éthique de la vertu dans le contexte de l'activité financière suppose que l'analyse d'une activité particulière doit être effectuée en considérant la vie de la personne qui agit (c'est-à-dire l'agent financier ou le gestionnaire) comme une unité narrative et en tenant compte du contexte social dans lequel l'activité se déroule. En définitive, en se basant sur l'éthique de la vertu, l'éthique peut être définie comme un guide de l'excellence humaine (Melé, 2009).

Figure A - Virtue Ethics in Finance: Personal and Social Ends



the contribution of finance to the common good of society (social ethics perspective),² but what has been developed less is an agent-centred personal ethics in finance, which is what this article seeks to develop further.

The next section explores what virtues are needed for an excellent practice of finance, i.e., what are those qualities of moral character which enable a person to flourish both as an excellent professional *and* an excellent person, taking into account the new technological context. The final aim of this inquiry is to demonstrate that the approach of virtue ethics provides the best groundwork for ethical reflection, not only for traditional finance, but also for the future of ethics in finance. It gives Aristotle the chance to walk the corridors of a fintech company.

2. The Technomoral Financial Agent: Human Agency and Virtues in the Fintech Era

Section 1 suggested virtue ethics as the approach *par excellence* to the ethics of finance, given that it considers the lives of financial

agents in their narrative unity and the contribution of finance to the common good. This section will further the discussion by providing a solid basis for the answer to the second guiding question of this article: What are the virtues that financial agents need to develop in order to be excellent financial professionals and excellent people in the fintech era?

In *Technology and the Virtues*, Shannon Vallor argues that the classical accounts of the virtues “still have much to offer us” (Vallor, 2016, p. 119), warning at the same time that “our current patterns of thinking about ethics and the good life may well prove ineffective, deleterious, or even catastrophic if we do not adapt them to these new technosocial realities” (Vallor, 2016, p. 23). For this reason, she formulates the notion of “technomoral virtues.” She does not suggest completely brand new virtues, but rather that 21st century virtues need to be cultivated “with a *new and explicit adaptation* to our emerging global technomoral environment” (Vallor, 2016, p. 119, emphasis in original).

This article will now carry out the same effort made by Vallor, with particular reference to financial agents working in the fintech era: *the technomoral financial agents*. However, before entering into the characterisation of two technomoral virtues for technomoral financial agents, it is necessary to clarify whether the impact of technology on finance will still leave space for

Quelles sont les vertus que les agents financiers doivent développer pour devenir d'excellents professionnels de la finance en même temps que d'excellentes personnes à l'ère de la Fintech? Les vertus du XXI^e siècle doivent être cultivées «avec une adaptation nouvelle et explicite à notre environnement technomoral mondial émergent» (Vallor, 2016, p. 119). Cet article s'efforce de caractériser les vertus technomorales pour des agents financiers technomoraux.

² For example, Schlag and Mercado discuss free markets and the creation of a culture of the common good (Schlag & Mercado, 2012); Dembinski reflects on what kind of society we desire and how finance contributes toward its shaping in the era of financialisation (Dembinski, 2009), and what the responsibilities of finance are (Dembinski, 2017); the Nobel Laureate Shiller describes finance as the “science of goal architecture” (Shiller, 2012, p. 6), and highlights the contribution of finance to the good society.

human moral agency. Put simply, if many tasks and even decisions will be made by artificial agents, is it really possible to speak of a human responsibility in future finance? Are virtues needed in the future financial sector, or will processes and even decisions be automated?

Fintech as Context for the Technomoral Virtues: Is There Still Space for Moral Agency?

A document from the European Parliamentary Research Service broadly defines fintech: “The financial technology (fintech) sector encompasses firms that use technology-based systems either to provide innovative and cheaper financial services directly (i.e. without the involvement of banks or other intermediaries) or to make

traditional financial business more efficient” (Stamegna & Karakas, 2019, p. 1). This document highlights how fintech “covers a range of services and products, such as cashless payment, peer-to-peer (P2P) lending platforms, robotic trading, robo-advice, crowdfunding, and virtual currencies” (Stamegna & Karakas, 2019, p. 1).

Arner et al. (Arner, Barberis, & Buckley, 2016) describe a topology of the fintech industry as comprising five major areas: “(1) finance and investment, (2) internal operations and risk management, (3) payments and infrastructure, (4) data security and monetization, and (5) customer interface” (Arner et al., 2016, p. 1291). The following Table A offers a description of each of these areas.

Table A: Topology of Fintech

Topology of Fintech*	Description**
1. Finance and Investment	Alternative financing mechanisms (e.g. crowdfunding and peer-to-peer lending); the financing of technology itself; robo-advisory services.
2. Internal Operations and Risk Management	Mainly related to compliance systems, and the automation of internal processes. RegTech, as the management of the application of financial regulations through technology, is part of this area.
3. Payments and Infrastructure	Internet and mobile communications payments; financial trading; disintermediation.
4. Data Security and Monetisation	Sensitivity of collected financial data; monetary value of data collected; vulnerability to cyberattacks.
5. Customer Interface	User experience for online and mobile financial services.

* From Arner et al. (2016, p. 1291). ** For a more detailed account, see Arner et al. (2016) and Karakas & Stamegna (2017).

Avec l'avènement de la Fintech, il semble qu'un large éventail d'activités habituellement exercées par des agents humains soit repris par des agents artificiels ou des processus automatisés. Serait-il alors utile de prendre en considération les vertus de ceux qui travaillent dans le secteur de la Fintech ou est-ce que toutes leurs responsabilités personnelles seraient déléguées à des agents artificiels? Le secteur de la Fintech partage bon nombre des questions éthiques traditionnellement analysées dans la relation entre l'éthique et la technologie.

With the advent of fintech, it seems that a wide range of activities usually performed by human agents have been taken over by artificial agents or automated processes across these five major areas. Would it then be useful to consider the virtues of those working in the fintech sector, or would all their personal responsibilities be delegated to artificial agents?

The fintech sector shares many of the ethical issues classically analysed in the relationship between ethics and technology. Franssen et al. report four recurrent themes in the ethics of technology: neutrality versus moral agency, responsibility, design, and technological risk (Franssen, Lokhorst, & van de Poel, 2018). Translating these issues into the language of fintech raises questions such as the following: Would artificial financial agents have responsibility for a mistake or illegal or unethical behaviour? Who should be considered accountable for the actions of the artificial agents? The debate on the neutrality of technology includes those who believe that technology has no moral content, but that its use has moral significance; others who argue that the design of technology has a moral content in itself; and others who state that both the way we design technology and the way we use it carry moral significance. Sheila Jasanoff (2016) in *The Ethics of Invention* gives voice to this debate, arguing that the way technology is designed bears moral significance,

insofar as it contributes toward shaping the society we desire. The discourse can be translated to finance: the design of the innovation of fintech not only advances the technical side of the financial sector, but also shapes the contribution of finance to the society of the future.

With regard to responsibility in finance, as in other sectors, technology also amplifies the so-called “problem of many hands” (van de Poel, Royakkers, & Zwart, 2015). In this instance, it is useful to look at the distinction drawn by Mancher et al. (2018) between unattended and attended bots in finance. According to these authors, unattended bots can perform “period-end close, reconciliation, maintain master data, cost accruals, travel accruals, labor accruals, daily report generation and compilation, PP&E activities (valuation, inventory, accountability)” (Mancher et al., 2018, p. 37); while attended bots can look after more complex activities such as funds distribution and control or cost and obligation transfers, and many others, which *need to be triggered by a human worker*.

This is the reason why it is still important to speak of the virtues of the financial agent: even in a scenario where automation and artificial agents will take over many tasks, these tasks must not only be performed, but also set and assigned. While repetitive and process-based activities can be replaced, therefore avoiding many common human

La sagesse pratique peut être décrite comme la vertu qui permet à l'agent d'identifier ce qui est bon et de choisir le meilleur moyen de le réaliser. Cette vertu a été largement étudiée en lien avec la gestion, alors qu'elle est moins étudiée en finance, même si elle est particulièrement pertinente pour les différentes décisions que doivent prendre les agents dans l'environnement financier. Vallor revisite la définition de la sagesse pratique dans le contexte des innovations technologiques. En prenant en compte la définition aristotélicienne de la sagesse pratique, celle mise à jour sous mode techno de Vallor et la description détaillée de St Thomas, cette section examine comment la sagesse techno-morale peut agir dans les cinq domaines de la Fintech précédemment esquissés.

errors (for example, robots do not seem to have the “problem of the fat finger,” and do not have issues with memory and data storage), the same cannot be argued for other actions that human agents will need to learn in order to be able to perform. In this context of a revised human agency in the future of finance, it makes sense to take a closer look at two virtues.

Technomoral Wisdom in the Fintech Era

Practical wisdom (PW) can be described as the virtue that enables the agent to identify what is good, and to choose the best means to achieve it (Aristotle, 2000). This virtue has been widely studied in relation to management, as a large body of literature witnesses (e.g.: Bachmann, Habisch, & Dierksmeier, 2018; Beabout, 2012; Melé, 2010; Moberg, 2007). It is less studied in finance, even if it is particularly relevant for the numerous different decisions that different agents in the financial environment need to make. Schwartz (2011) argues that rules and incentives do not help people desire to do the right thing and choose the best means to achieve it; it is rather the cultivation of PW that helps people decide for the good in every situation.

Vallor rereads the definition of PW in the context of technological innovations. She argues that technomoral wisdom is “a *general condition* of well-cultivated and integrated moral expertise that expresses successfully – and in an intelligent, informed, and authentic

way – each of the other virtues of character that we, individually and collectively, need in order to live well with emerging technologies” (Vallor, 2016, p. 154, emphasis in original).

Even if Vallor describes technomoral wisdom as a “general condition,” it is also fruitful to explore a detailed account of the parts of PW as described, for example, by Aquinas (1964). He identifies eight integral elements essentially linked to the exercise of PW: memory, reason, understanding, docility, shrewdness, foresight, circumspection, and caution (Aquinas, S. Th. II-II, q. 49). According to Aquinas, memory relates to the knowledge of the past; understanding, to the knowledge of the present; reason refers to ways of using knowledge, combining sources and evaluating alternatives; docility helps in acquiring knowledge through the experience or the knowledge of others; shrewdness is the capacity to acquire knowledge through one's own personal research; foresight helps balance the means that the person has in the present with the purpose set for the future; circumspection helps take into account the relevant circumstances of the decision; caution helps one to avoid obstacles.

The following Table B shows how techno-moral wisdom can act along the five areas of fintech previously sketched, taking into consideration the Aristotelian definition of practical wisdom (Aristotle, 2000), the techno-updated one by Vallor (2016), and the detailed description by Aquinas (1964).

Table B: *Technomoral Wisdom in Fintech*

Topology of Fintech*	Technomoral Wisdom
Finance and Investment	<p>Technomoral financial agents need to exercise foresight, circumspection and caution in deciding the best investment choice possible, not just the most efficient. Even if the processes are automated, the decisions about how to utilise them still require human wisdom. For example, a robot can detect an advantageous investment opportunity in buying shares in a company selling non-renewable energy. A human agent can mediate the efficiency of the choice by examining the historical and geographical context. Regardless of whether the choice is profitable, the question arises of whether one should support a company that helps enhance the future of humanity or one that makes a profit by taking advantage of environmental vulnerability.</p> <p>From the technomoral user's perspective, memory is greatly reinforced by automation, with the presence of reviews of the users of the platforms, availability of records of every transaction and project supported, amount of money spent, etc. The technomoral user's docility and shrewdness are greatly reinforced by bots and other available technical instruments that gather knowledge, while the way of using the knowledge (reason) remains human, or at least subject to human control.</p>
Internal Operations and Risk Management	<p>This might be the area in which human skills are more replaceable. Indeed, the automation of processes simply deducts from human agency some areas of interaction and automates efficient workflow and relationships.</p> <p>The reign of technomoral wisdom in this area is the wisdom of managers. Indeed, the automation impacts on how processes are developed, but cannot determine the "why." One of the strongest criticisms of managers in the postmodern era concerns exactly this point (MacIntyre, 2007; Mangham, 1995): a manager is a mere executor unless he or she is able to direct, define, and set the objectives of the firm. Technomoral wisdom is exercised in the definition of the good purpose that is achieved by the activity of the financial company operating in the fintech era. Technology is an element of the choice regarding which are the best means to achieve this purpose.</p>

Payments and Infrastructure	The fact that payments are easier to perform does not necessarily mean that the decision about payments is easier to make. However, there are studies on the impact of contactless technology on spending behaviours: if we do not see the money we use, it seems that we are inclined to spend more (Trütsch, 2014). This is where technomoral wisdom comes heavily into play. While automation takes care of the means of payment, practical wisdom helps in discerning the best purchasing option and, thanks to techno-foresight, balances present possibilities and real future needs.
Data Security and Monetisation	Technomoral wisdom helps in assessing the value of data and in choosing its best use. Any company can own data, but not every company would make the best use of it. This area, especially in Europe – given the detailed regulation under GDPR (European Commission, 2018) – lies at the border between ethical reflection and regulation.
Customer Interface	Technomorally wise developers of technological systems devoted to financial services will strive to provide the best platform for the clients, i.e. a platform which clearly helps the final user to find information without hiding potential risks and terms of use. The choice of the best means to achieve a good end is an essential part of the definition of technomoral wisdom.

* According to Arner et al. (2016, p. 1291).

This overview is illustrative but by no means exhaustive. The level of detail involved in each of the aspects of practical wisdom, updated for the digital context, reveals not only the complexity of this virtue, but also the complexity of the fintech environment in which this virtue needs to be exercised. The dawn of fintech brings an opportunity to redefine the specificity of human intervention in critical decisions (e.g. *The Renaissance of Practical Wisdom* in risk management, Hoffmann, 2017, ch. 10), and gives birth to a new educational need: training technomorally wise financial agents.

Digital Integrity

“Integrity” is another buzzword often used in the domain of finance. According to MacIntyre, “To have integrity is to refuse to be, to have educated oneself so that one is no longer able to be, one kind of person in one social context, while quite another in other contexts” (MacIntyre, 2006, p. 192). Integrity is the habitual disposition to show the same moral character in different situations. In finance, living according to the standard of integrity means, for example,

Vivre avec intégrité en finance signifie faire preuve de la même force morale avec des collègues, des clients ou à la maison. Le contraire de l'intégrité est la compartimentation, ce qui signifie montrer une force morale différente en fonction de la situation dans laquelle se trouve une personne. L'avènement de la Fintech appelle à une réactualisation de cette vertu, qui a été largement étudiée en finance et qui doit maintenant être examinée dans le contexte numérique. On appellera cette vertu «intégrité numérique» et elle peut être définie comme «la disposition habituelle à montrer la même force de caractère dans différents contextes numériques».

treating other people's money as if it is yours, or applying the same moral judgment to a situation in which others are involved as if you were the protagonist of this situation. Living with integrity in finance means showing the same moral character when with colleagues, clients, or at home. The opposite of integrity is compartmentalisation (MacIntyre, 2006), which means to show a different moral character depending on the situation in which a person finds themselves.

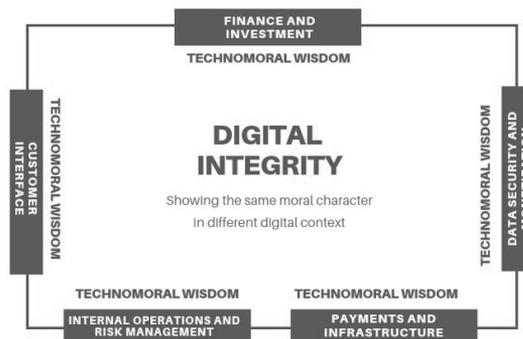
The advent of fintech calls for an update of this virtue, which has been widely studied in finance (Boatright, 2011; Cowton, 2002; Erhard & Jensen, 2012; Spitzeck, Pirson, & Dierksmeier, 2012) and now needs to be considered in the digital context. This virtue is going to be named “digital integrity,” which can be defined as the “habitual disposition to show the same moral character in different digital contexts.” Different authors have worked on identity in

digital contexts, discovering that the exposure to different digital platforms can give rise to the existence of different digital identities for the same person. For example, Sherry Turkle, in her book *Life on the Screen: Identity in the Age of the Internet* refers to decentred and multiple identities (Turkle, 1997), while Walker warns about the fact that “the Internet self is postmodern, transitory, deceptive, and fragmented” (Walker, 2000, p. 99).

Digital integrity is needed in a transversal way in all of the five areas encompassed by fintech and where technomoral wisdom enables the agent in multifaceted aspects: it is the coherent exercise of the traits of technomoral wisdom across any activity in the future of finance. In this specific characterisation, digital integrity does not concern the markets, but each human agent operating in the fintech environment.

Figure B illustrates this dynamic interaction.

Figure B - Digital Integrity in Fintech



3. Fintech and the Virtues: A Proposal for Technomoral Education in Finance

Bien que de nombreuses universités offrent déjà des diplômes spécialisés en Fintech, elles n'intègrent pas toutes l'éthique dans leurs programmes. De même, bien que certaines contributions académiques traitent de l'éthique en Fintech, la recherche et l'enseignement dans ce domaine n'ont pas encore été systématiquement développés. Afin de former des agents financiers technomoraux, des « Ascenseurs Instantanés Technoéthiques » (AIT) peuvent être introduits dans le programme d'études Fintech. Un AIT est conçu pour être une voie d'apprentissage rapide enseignée avec un contenu théorique solide, des lectures brèves et informatives et une conception adaptée aux technologies.

While many universities already offer specialised degrees in fintech, not all of them integrate ethics into their curricula. Some academic contributions deal with ethics in fintech (e.g. Scott, 2018; Trieu, 2016), but research and teaching in the ethics of fintech have not yet been systematically developed. At the same time, the integration of ethics into business school degrees is highly valued by those bodies assessing the value of business schools' curricula (e.g. Ethics Education Task Force to AACSB International's Board of Directors, 2004).

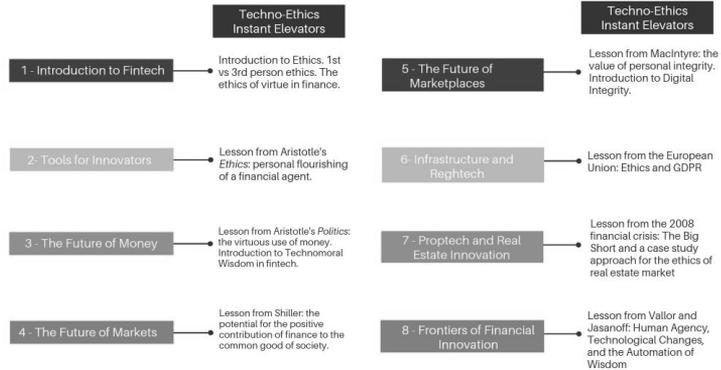
Integrating ethics in the newly-designed fintech curricula would save the finance of the future one of the criticisms against business education in the aftermath of the financial crisis: “Most of the people at the heart of the crisis [...] had MBAs after their name ... In recent years about 40% of the graduates of America's best business schools ended up on Wall Street, where they assiduously applied the techniques that they had spent a small fortune learning. You cannot both claim that your mission is ‘to educate leaders who make a difference in the world’... and then wash your hands of your alumni when the difference they make is malign” (Schumpeter, 2009). According to Dobson (2008),

it is possible to integrate ethics into finance curricula at different levels, and Dembinski (2017) also suggests that the method of teaching finance itself can be different, enlarging the reductionist concept of human beings upon which the theory of financial markets is based.

In order to train technomoral financial agents, *Techno-ethics Instant Elevators* (TIEs) can be introduced across the fintech curriculum. In order to have a concrete visualisation of how a fintech curriculum can be impacted by these “TIE breaks”, the following Figure C replicates the fintech online 8-module curriculum offered by Oxford University, as found in the publicly accessible sections of their website (<https://www.sbs.ox.ac.uk/programmes/oxford-fintech-programme>), and integrates each module with a TIE. A TIE is designed to be a learning fast track taught with solid theoretical contents, brief and informative readings, and technology-friendly design. Each TIE involves one hour of online engagement. Each hour is divided into four 15-minute learning steps: a 15-minute introduction to the topic; a 15-minute interaction with the instructor and the other learners; 15 minutes to explore the resources (readings and videos); and 15 minutes to write two paragraphs on how to face a situation related to the topic, to solve a case study, or to perform a related activity. Figure C shows the integration of TIEs in the abovementioned fintech curriculum.

L'éthique de la vertu est l'approche par excellence pour envisager l'activité financière future dans sa complexité technique et morale, en considérant à la fois la vie des agents financiers dans leurs unités narratives et la contribution positive de l'activité financière au bien de la société. L'avènement de la Fintech laisse une place à l'agence morale humaine, et les agents financiers impliqués dans cette industrie doivent développer les vertus technomorales afin de se développer en tant qu'excellents professionnels de la finance et en même temps comme excellentes personnes. En particulier, ils doivent développer une sagesse technomorale et pratiquer constamment l'intégrité numérique. Les Ascenseurs Instantanés Techno-éthiques sont conçus pour offrir une opportunité d'apprentissage efficace qui transforme la manière dont les agents financiers réfléchissent à la moralité de leur profession pour l'avenir de la finance.

Figure C- Techno-Ethics Instant Elevators Across the Fintech Curriculum



All the topics and related bibliography for Modules 1-5 and 8 have been sketched throughout this article, while Module 6 on regulation would be best left to an expert on GDPR. Module 7 uses the movie *The Big Short* (McKay, 2015) to provide a basis for discussion on the future of real estate and fintech.

A more advanced integration of the future of ethics in finance education would consist of adding an entire module on techno-ethics, which can be introduced by reading MacIntyre's provocative article on the character of financial agents, *The Irrelevance of Ethics* (MacIntyre, 2015). Learners are engaged in a structured discussion about whether MacIntyre's criticisms of the behaviour of financial agents and financial markets as a school of anti-virtuous behaviour could change positively or negatively in the fintech era.

Conclusions

This article considers the future of the ethics of finance in the fintech era. It answers the three questions proposed in the Introduction, arguing that:

- 1) Virtue ethics is the approach *par excellence* to look at future financial activity in its technical and moral complexity, considering both the life of financial agents in its narrative unity and the positive contribution of financial activity to the good of society.
- 2) The advent of fintech leaves space for human moral agency, and financial agents involved in this industry need to develop technomoral virtues (Vallor, 2016) in order to develop themselves as excellent financial professionals and excellent people. In particular, technomoral financial agents

need to develop technomoral wisdom across the five areas of fintech defined by Arner et al. (2016), and to constantly practise digital integrity.

- 3) A proposal for the integration of ethics into existing and future fintech curricula has been discussed: in particular, examples of TIEs (Technoethics Instant Elevators) are designed to offer an effective learning opportunity that

transforms the way financial agents reflect on the morality of their profession in the future of finance.

If fintech were the context which finance professionals can become the best version of themselves while contributing to the common good of society, finance would finally recover its original social function of bridging savers and investors in order to realise worthwhile projects for the common good. •

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