Benefits and Limits of Interdisciplinarity

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I would like to thank Seyfi Kenan, Yaprak Türkân Yücelsin Taş, and the Institute of Educational Sciences at Marmara University for organizing this conference. When I came to Seyfi's office to discuss the content of my upcoming talk, I first thought that I could address my current research on the possible connection between Orientalism, Postcolonialism and Mediterraneanism. I also considered a presentation comparing my experience teaching French as a foreign language in the United States and Turkey. When Seyfi finally suggested to me a talk on interdisciplinarity, I was at first surprised since this is not my field of expertise even if I am aware of the importance of this notion in contemporary academic debates. Fortunately, or we would not be here today, it took me a few seconds to think "why not?" and accept his offer. After preparing this talk, I can tell you now that accepting this conference was the easiest part; the hardest was yet to come.

Even if "interdisciplinarity" has become a buzzword known by every academic, a catch word often synonymous with excellence and cutting-edge research, it is however one of these tricky concepts that we instantly recognize and believe to grasp until we try to define it. Unable to go beyond the most simplistic definition (interdisciplinarity is the attempt to connect two or more disciplines in order to address a specific topic or solve a singular problem), I started to think about my own academic journey in search of interdisciplinary traces. Then, just like Molière's Mister Jourdain who suddenly discovered in *Le Bourgeois Gentilhomme* that he had been speaking in prose for more than forty years without knowing it, I quickly realized that I may have been an interdisciplinarian for many years without realizing it. When I completed my graduate studies in sociology at the beginning of the 1990's, all of my professors and mentors had been trained in different disciplines outside of our home discipline (mostly in history or

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philosophy). If nowadays many scholars are trying to transcend the traditional disciplinary boundaries with innovative interdisciplinary approaches, it is important to keep in mind that interdisciplinarity, or rather multidisciplinarity as we will see later, is written in capital letters on the birth certificate of sociology. Indeed, interdisciplinarity constitutes the paradoxical foundation of sociology as a "singular" and "independent" discipline. To prove my point, I will rapidly survey the trajectories of the most influential French sociologists of the 20th century. Emile Durkheim, the founding father of modern sociology with Max Weber who by the way graduated in law and history, received his formal training in philosophy at the prestigious École Normale Supérieure where he happened to be the classmate of the celebrated philosopher and Nobel Prize in Literature recipient Henri Bergson. Marcel Mauss, the nephew and successor of Durkheim, remains famous for linking sociology and anthropology even if he received a rigorous training in linguistics, indology, Sanskrit and Hebrew. My lack of knowledge in these disciplines did not prevent me from learning a lot from his socio-anthropological books. Raymond Aron, who played a key role in the institutionalization of sociology as a self-contained discipline in post-war France, also graduated in philosophy from the prestigious École Normale Supérieure where he was a classmate of Jean-Paul Sartre. Before becoming the powerful Chair of Sorbonne University's Department of Sociology, Aron taught social philosophy for many years. He also wrote important scholarly books on international relations and was an influential political columnist for the conservative newspaper *Le Figaro*. Pierre Bourdieu also graduated in philosophy from the same prestigious institution of higher education with a solid expertise on the works of Heidegger and Husserl before becoming the most celebrated and influential French sociologist since Durkheim. Other famed intellectuals who shaped French sociology throughout the 1960s and the 1970s – at a time when sociology became fully institutionalized as a sovereign discipline – also graduated in philosophy (Henri Lefebvre, Raymond Boudon…), in history (Alain Touraine, Annie Kriegel…), in German literature (Jean Baudrillard) or even in business (Michel Crozier). The only common denominator between all these renowned sociologists is that they all graduated from excellent higher education institutions regardless of their disciplinary affiliation. On a more personal note, I remember that my curiosity for sociology started after reading a long and seminal essay by the French philosopher Vladimir Jankélévitch on Georg Simmel (the co-founder of German sociology with Max Weber). The same process of disciplinary cross-fertilization continued when I moved to America after completing my PhD in sociology and became a graduate student in literary studies with a strong emphasis on psychoanalysis, continental philosophy, cultural studies and postcolonial theory.

However, despite this almost thirty year-long familiarity with different but interconnected disciplines, I still struggle to offer you a solid definition of what truly constitutes interdisciplinarity. As the ultimate proof of my flimsy and amateurish "expertise" in interdisciplinarity, I have to confess that I had to google the term and start a search on data bases such as *Jstor*; something that I would never have done if you asked me to define sociology or to present my current literary research on Orientalism, Postcolonialism, and Mediterraneanism.

My first online search seemed to confirm how widespread the vogue of interdisciplinarity has been in scholarly publications for the last decades. As an example, the term "interdisciplinary" is indexed in more than 270,000 articles on the *Jstor* data base. It is important to note that this fad is not limited to interdisciplinarity since the prefix "inter-" is indexed in more than 2,700,000 articles. If you are familiar with recent academic prose, you probably noticed that this formidable inflation of prefixes is a global trend that goes beyond the various forms and subdivisions of interdisciplinarity and affects all academic spheres. It is becoming increasingly difficult to find scholarly publications that do not incorporate an apparent infinite variation around prefixes such as "pre-" (pre-modernism…), "post-" (post-structuralism…) , "neo-" (neo-colonialism…), "anti-" (anti-Americanism), "de-" (de-westernization), "trans-" (trans-gender…), "cross-" (cross-culturalism) and of course "inter-" (interculturalism, interfaith, intersectionality, intertextuality, interracialism, interdependence, interactionalism…).

For the limited purpose of my presentation, I will restrain myself to the notion of "interdisciplinarity" even if it is clearly just one symptom of a larger and dizzying proliferation of prefixes, which, for better or for worse, reveals a frenetic quest for innovative concepts and paradigms that could reshape current scholarly agendas.

Throughout my online literary review, I quickly noticed two main characteristics. First, despite its common use for the last fifty years, interdisciplinarity remains an ill-defined concept. Secondly, this vague notion tends to divide, sometimes violently, the research community at large.

But before exploring the causes of this dissension between the supporters and detractors of interdisciplinarity, it is first necessary to try our best to more accurately define this highly debated but elusive notion which, despite a vast and growing literature, still suffers from a profound terminological ambiguity. In its most literal sense, interdisciplinarity can be "simply" defined as the encounter, the interaction or even the integration of at least two disciplines. A more precise definition quickly highlights a more confrontational dimension of interdisciplinarity that is often defined negatively

in opposition to established disciplines. In its most extreme and integrative form, for example in trans – or even post-disciplinarity, interdisciplinarity would constitute an attempt to transcend disciplines in order to unify what is currently perceived as a dangerously fragmented (disciplinary) knowledge. As noted by Moti Nissani, if "a discipline can be conveniently defined as any comparatively self-contained and isolated domain of human experience which possesses its own community of experts", "interdisciplinarity involves bringing together distinctive components of two or more disciplines". [1] Accentuating its oppositional dimension, David Shumway states that "interdisciplinarity is an enormously imprecise term that often seems to function as a nebulous, utopian escape from disciplinary confines". [2]

If this first and basic definition can give us an embryonic sense of what constitutes interdisciplinarity, it still needs to be complexified because it does not fully inform us about the nature of this encounter or the degree of its integration. The best way to differentiate between these low, moderate or high levels of integration is to redefine interdisciplinarity by taking into account its numerous variations. Indeed, "inter-disciplinarity" is mostly delineated in comparison with "multi-", "trans-", "pluri-", "cross-", "intra-", "post-", or even "de-" disciplinarity. Due to the time restraint, but also for the clarity of my presentation, I will limit myself to the main three subcategories that are most often cited in these abundant debates according to their increasing degree of integration: multi-, inter – and finally trans-disciplinarity.

Often negatively defined as an inferior or low-level form of interconnectedness due to its limitation to a mere comparison, contrast or juxtaposition, multidisciplinarity constitutes a more minimalist and less integrative form of interdisciplinarity. It puts into contact a variety of disciplines and thus offers simultaneously different perspectives on one specific topic or problem that is a joint concern for otherwise distinct disciplines. As defined by Basarab Nicolescu, the founder and president of the International Center for Transdisciplinary Research and Studies (CIRET), "multidisciplinarity involves studying a research topic in not just one discipline but in several at the same time. Any topic will ultimately be enriched by the incorporation of the perspectives of several disciplines". [3] If multidisciplinarity already

1 Moti Nissani, "Fruits, salads, and smoothies: a working definition of interdisciplinarity", *The Journal of Educational Thought (JET) / Revue de la Pensée Éducative* 29-2 (1995), p.122. Henceforth Nissani, "Fruits, salads, and smoothies".

2 David Shumway, "Disciplinarity, corporatization, and the crisis: a dystopian narrative", *The Journal of the Midwest Modern Language Association* 32-2/3 (1999), p.8. Henceforth Shumway, " Dystopian narrative".

3 Basarab Nicolescu, "Multidisciplinarity, interdisciplinarity, and transdisciplinarity: similarities and differences", *RCC Perspectives* 2 (2014), p.19. Henceforth Nicolescu,"Multidisciplinarity".

overflows disciplinary boundaries, interdisciplinarity seeks a more profound interaction between disciplines. It implies a higher degree of integration that goes beyond the mere juxtaposition or the purely quantitative aggregation that set apart multidisciplinarity. As noted by Nicolescu, it implies a challenging "transfer of methods from one discipline to another". [4] Thus, the main objective of interdisciplinary studies is to bring together distinctive and separated disciplines in an attempt to reach a more unifying (or totalizing) form of knowledge that would be better fitted to address a complex and multifaceted problem that could not be fully grasped by an isolated discipline. If the multidisciplinary approach preserves the integrity of all the disciplines simply placed "side-by-side", the integrative nature of the interdisciplinary perspective implies, both at the methodological and epistemic levels, a more fluid and disruptive process of narrower or wider integration leading to a more unified knowledge.

I am aware that this first attempt to define the distinction between multi – and inter-disciplinarity remains too abstract and still confusing. In order to clarify my presentation, I will now refer to the useful fruit metaphor offered by Moti Nissani to highlight the differences between disciplinarity (single fruits), multidisciplinarity (a fruit salad) and interdisciplinarity (a smoothie). Just like fruits can be easily distinguished by their peculiar shape, texture or taste, each discipline can be defined by "distinctive components" such as "shared goals, concepts, facts, tacit skills, methodologies, personal experiences, values and aesthetic judgments". [5] If the fruits can be served alone (disciplinarity), they can also be mixed in a fruit salad (multidisciplinarity). The components can still be isolated and identified: a piece of kiwi will remain a piece of kiwi even if it is served with pieces of apples, bananas or oranges. It will still be possible to recognize the flavor and texture of each fruit even if their mingling will ultimately create a new flavor. Multidisciplinarity is like this fruit plate or fruit salad: it is not limited to one discipline (one fruit). It involves a certain degree of juxtaposition and combination but the distinctive specificity of each discipline will be preserved despite the amalgamation of components. History can be "mixed" with sociology, philosophy or literature but it will remain – *in fine* – the discipline of history just like a banana can be cut and served with pieces of apples or oranges without losing its distinctive features. However, it is possible to reach a higher degree of integration if the fruits are not just juxtaposed on a plate or in a fruit salad but blended into a smoothie. This blending process will make it increasingly hard to identify the original fruits, especially if a large number of them have been mixed. The more fruits are blended (the more disciplines are integrated) the more difficult it will become to clearly identify the

4 Nicolescu, "Multidisciplinarity", p.19.

5 Nissani, "Fruits, salads, and smoothies", p.122.

idiosyncratic flavor of each fruit-discipline in the interdisciplinary smoothie. As summarized by Nissani, the multi-faceted concept of interdisciplinarity can thus be defined by four main interrelated variables: "the number of disciplines involved, the distance between them, the novelty and creativity involved in combining the disciplinary elements, and their degrees of integration". [6] The first criteria (the number of fruits/disciplines) is the most obvious and easy to evaluate due to its strictly quantitative nature. The more disciplines are mixed, the more integrative the interdisciplinary process will be. Blending together two disciplines such as history and literary criticism will lead to a less integrative process than mixing for example five disciplines such as history, literature, philosophy, sociology and economics. The second and third variables (the distance between the disciplines and the novelty of their blending) are harder to determine due to their more qualitative and fluctuant dimension but they play a key role in evaluating the nature of the final interdisciplinary activity. Mixing sociology and political science (two distinct disciplines despite their many commonalities) will be less original due to their common epistemic and methodological grounding in social sciences. It would be like mixing raspberries with strawberries. On the other hand, mixing two distanced disciplines such as economics and literature will be a more challenging process comparable to mixing fruit with cereals or even meat (for example Swedish meatballs served with grape jelly). The final criteria (the degree of blending and integration) is clearly the most cardinal to distinguish multi – from inter-disciplinarity, but it is also the most difficult to label. A minimalist form of interdisciplinarity may resemble a smoothie where little chunks of the original fruits/disciplines are preserved. Such a narrower interdisciplinarity is easier to accomplish when disciplines share the most fundamental commonalities; for example, interdisciplinary research within the humanities (mixing literature with philosophy) or within the social sciences (Blending together sociology and political science). As noted by Martha Nussbaum:

> Though the different humanities disciplines have to some extent different content and different methods, and although differences of both content and method abound within each discipline, all of this diversity is held together by a set of themes and problems. [7]

But it becomes more complicated when scholars envision a wider form of interdisciplinarity aiming at connecting more clearly distant disciplines. Such a wide-ranging connection is harder to achieve especially when the "blended" disciplines do not belong to the same sciences (for example combining humanities with social or

6 Nissani, "Fruits, salads, and smoothies", p.125.

7 Martha Nussbaum, "Humanities and human development", *The Journal of Aesthetic Education* 36-3 (2002), p.39.

natural sciences) and thus do not share, as we will see later, the same epistemic and methodological foundations.

After this first attempt to distinguish multi – and interdisciplinarity, I will briefly address the specificities of what many scholars describe as a "trans-disciplinary" approach. Just like interdisciplinarity, transdisciplinarity represents an epistemic and methodological challenge that goes beyond the more minimalist juxtaposition of disciplines that characterizes multidisciplinary research. But – as explained by Nicolescu – transdisciplinarity also challenges interdisciplinarity by its attempt to unify knowledge and branch-out to actors located outside of academia in order to address, and possibly resolve, societal problems experienced in the *real-world*.

> Transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all disciplines. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge. [8]

I hope that this long but still schematic introduction had the merit to clarify the main features of *multi-*, *inter* – but also *trans-*disciplinarity even if I am fully aware that the nature and forms of interdisciplinarity are still intensely disputed. In many publications, this basic triad is often complexified with the addition of new subcategories such as "pluri-", "cross-", "intra-" "post-" or even "a-disciplinarity". The proliferation of these prefixes makes it very difficult to lay the foundation for a solid and scientific perspective on what truly constitutes interdisciplinarity.

As mentioned in my opening statement, interdisciplinarity is a hot topic that, often violently, divides the academic community. Most scholars tend to be either ardent apologists or virulent opponents of interdisciplinary teaching and research. Many of the arguments, either dismissing or lauding interdisciplinarity, are valid and deserve to be critically assessed. Before exploring the limits and also the potential dangers of interdisciplinarity, I would like to first address the main arguments mobilized by its defenders.

The Arguments Against Disciplinarity (In Favor of Interdisciplinarity)

In an increasingly postmodern world confronted with rapidly changing and polymorphic challenges, traditional disciplinarity is often perceived as an obstacle to a full understanding of this new world complexity. Trapped in their own epistemes, methodologies and world-views, rigidly compartmentalized disciplines would not provide the necessary tools to address and eventually resolve the

8 Nicolescu ,"Multidisciplinarity", p.19.

multifaceted *real-life* problems. Facing an apparently irresistible process of departmental hyper-specialization, disciplines would increasingly produce fragmented knowledges lacking the wider breadth necessary to effectively grasp and later resolve the predicaments afflicting our current societies. As a logical consequence of their hyper-specialization and disciplinary orthodoxy, the majority of scholars would be trapped in the tunnel-vision and "radical egocentricity" of their balkanized disciplines. [9]

This narrow and sometimes dogmatic view of the world (through the singular lens of exclusively disciplinarian perspectives) would promote a dangerously self-contained perception of its object of study. As stated by Stanley Bailis, a strictly disciplinarian scholar always runs the risk to confuse his partial understanding with a more holistic knowledge since his "specialized inquiry" has a dangerous tendency to "produce knowledge about parts that is too often used as if it were about wholes". [10]

Strictly disciplinarians would possess neither the methodological tools nor the larger world-view that would help them to transcend the rigid boundaries delineating their disciplines. And they would be unable to imagine groundbreaking ways to fully grasp complex and multifaceted *real-world* issues: Due to their *tunnel-vision*, a logical consequence of disciplinary orthodoxy, disciplinarians would not be capable to openly address real-world problems because of the increasing isolation and fragmentation of their hyper-specialized disciplinary knowledge. [11]

The difficulties for hyperspecialized approaches to fully address concrete real-life problems legitimize the calls in favor of a more integrative knowledge that could transcend major disciplinary boundaries. For example, any academic attempt to provide a more holistic understanding of all the challenges raised by climate change should facilitate numerous interactions between biology, ecology, law, cultural and migration studies. As convincingly argued by Garry D. Brewer, "universities are arranged around scholarly disciplines. Environmental problems are not" and Academia may indeed need a profound structural (interdisciplinary) reform if it wants to remain a major player in the humanist reshaping of our world (dis-)order [12]:

9 Julie Klein, "The dialectic and rhetoric of disciplinary and interdisciplinary", *Issues in Integrative Studies* 2 (1983), p.37.

10 Stanley Bailis, "Contending with complexity: a response to William H. Newell's 'A Theory of Interdisciplinary Studies'", *Issues in Integrative Studies* 19 (2001), p.27.

11 The ever-increasing hyper-specialization tends indeed to produce a fragmented and limited knowledge. One only need to look at hyper-specialized and "cutting-edge" academic journals (especially in the Humanities) to realize how hyper-specialization can favor both an obtuse jargon and an avalanche of often unnecessary footnotes that can be – in some extreme cases – as long and "informative" as the core text.

12 Gary D. Brewer, "The challenges of Interdisciplinarity", *Policy Sciences* 32-4 (1999), p.331. Henceforth Brewer, "The challenges of Interdisciplinarity".

> Many realize that disciplinary specialization has costs, too, not the least of these being more fragmented knowledge and knowledge which informs realistic problems only with great difficulty. The matter is especially evident, and increasingly urgent some believe, with respect to a variety of environmental problems. [13]

Based on my own academic training, I tend to agree with this pragmatic argument in favor of interdisciplinarity. I clearly remember my first undergraduate lecture in International Relations at Sorbonne university. The professor – who happened to be both humorous and well respected – started his course by stating – I quote him from memory – "it is easy to define international relations…. International relations are the studies of relations between nations". Of course, such a "simple" definition was a witty way to start a course that happened to be one of the most challenging I ever took. But our professor was in fact correct. At the very end of the 1980s, in the last years of the Cold War, we were still living in a bipolar world order dominated (if not controlled) by the Soviet Union and the United States of America. The main actors were indeed Nation-States and the study of international relations was a self-sufficient and maybe narrow-minded discipline. The "Nuclear Dissuasion" doctrine and its logic of "Mutual Assured Destruction" (MAD) was the undisputed theoretical framework for our year-long introduction to international relations. Non-Governmental Organizations (NGO), media or large industrial companies were just mentioned in lapidary footnotes. Years later – after the collapse of the Soviet Union and the emergence of a post 9/11 world Dis/Order – such a nation-centered approach to international relations would be clearly too narrow-minded to understand the multifaceted complexity of current world affairs. It has become obviously necessary to pay more attention to social psychology (collective narcissism, resentment and humiliation) if we want to grasp the rise of populism and the various form of ethnic and religious fundamentalism that undermine the very foundation of democratic and liberal societies. International relations must also take into consideration how information technologies and transnational communication corporations such as Facebook or Twitter can impact the outcome of national elections and profoundly reshape international relations through murky disinformation campaigns spreading "fake news".

Some qualitative studies appear to validate this current praise of interdisciplinarity. Moving beyond the limited scope of disciplinarity in order to gain a solid integrative training seems to constitute a significant asset for undergraduate students entering an ever more competitive job market. As noticed by William Newell – the founder

13 Brewer, "The challenges of Interdisciplinarity", p.327.

of the Association of Integrative Studies and long-time director of its Journal – the most essential skills taught in interdisciplinary programs are ever more sought by employers who expect students to remain open-minded, think *outside the box*, find innovative ways to resolve concrete problems and adapt to team-work.

> Dealing with environmental problems, urban problems, energy problems, and many others requires training in synthetic thinking, in weighing arguments from diverse narrow disciplinary perspectives, and in placing them in the larger context. The narrow vision and piecemeal approaches of disciplinary specialists have only exacerbated these problems. [14]

> Most employers have no particular loyalty to the academic disciplines, especially when they are hiring for jobs that do not build directly on disciplinary competence. Employers are particularly attracted to interdisciplinary majors because of the abilities of the students to think conceptually, to identify and solve problems, to understand other value systems to evaluate alternative and decide on a course of action, and to change one's opinion in the light of facts. Employers also cite traditional liberal arts skills of effective written and oral communication when they explain why they hired graduates of interdisciplinary programs, as well as affective skills like effective group participation, ethical sensitivity, and constructive response to criticism which reflect the experimental college setting on many interdisciplinary programs. [15]

Such a statement about the stronger employability of interdisciplinary practitioners seems to be validated by non-academic labor experts. According to an article penned by Liz Ryan and published in the march 2016 issue of *Forbes Magazine*, most of the "12 qualities employers look for when they are hiring" clearly correspond to the attributes of a successful interdisciplinary training: the ability to "think independently", to "like to problem-solve", to be "proactive", "responsible", "goal-oriented", ready to "work well on a team" and "happy to learn new things". [16] Students trained in interdisciplinary fields may indeed be more prepared to accept innovative ways of approaching real-life problems. They may be more open to criticism and display more tolerance in the face of complex problems that requires the collaborative engagement of multiple perspectives.

14 William H. Newell, "The case for interdisciplinary studies: response to professor Benson Benson's five arguments", *Issues in Integrative Studies* 2 (1983), p.6. Henceforth Newel, "The case for interdisciplinary studies".

15 Newell, "The case for interdisciplinary studies", p.7.

16 Liz Ryan, "12 qualities employers look for when they're hiring", *Forbes Magazine* (March 2016).

The Arguments Against Interdisciplinarity (And in Favor of Disciplinarity)

If the arguments in favor of interdisciplinarity often seem pertinent, one should not draw the conclusion too quickly that the time has come to finally transcend this academic attachment to disciplinarity. Thus, it is necessary to seriously pay attention to the arguments made by the opponents of interdisciplinarity. In the very first issue of the *Journal of Integrative Studies*, professor Thomas Benson perfectly summarizes the main (but also most violent) arguments mobilized by disciplinarians in their rejection of interdisciplinarity. The first and most damaging accusation concerns the apparently dubious quality of most interdisciplinary teaching. Since academia remains traditionally structured along disciplinary and departmental boundaries, Benson considers that the vast majority of interdisciplinarians can be considered as "second-class scholars, exiles and refugees from the disciplinary departments, where they either failed to measure up or found themselves incapable of sustaining the kind of rigor and focus required for success in disciplinary scholarship". [17] Incapable of attaining such a level of excellence, interdisciplinarian scholars would be more willing to engage in attractive but also shallow integrative studies courses, thus "trading intellectual rigor for topical excitement". [18] Such a lack of substance could only produce a diluted and gimmickry substitute to a rigorous and time-consuming disciplinary training and would ultimately replace serious academics with "faculty driving ice cream trucks down the academic alleys" promoting "half-baked notions" with little or no curricular value. [19] This "ill-conceived" and "sloppy" teaching may retain some entertaining values for students treated as customers, but it would also dangerously be subjected to an "heavy reliance on splashy special events: guest speakers, films, video-cassettes, and other classroom equivalents of easy-listening radio" to the detriment of a more traditional and "intellectually demanding mix of lectures, sharply focused discussions, exams, and papers". [20]

The burgeoning call for more integrative research and teaching may not be strictly limited, as claimed by Benson, to individual scholars lacking the necessary talent to strive in their home discipline and thus desperately searching for a niche that would give them a chance to reach an acceptable level of visibility that would remain unattainable in a more disciplinary based academic setting. Such a quest for interdisciplinarity may also reflect a more profound and

17 Thomas C. Benson, "Five arguments against interdisciplinary studies", *Issues in Integrative Studies* 1 (1982), p.47. Henceforth Benson, "Five arguments against interdisciplinarity".

18 Benson, "Five arguments against interdisciplinarity", p.45.

19 Benson, "Five arguments against interdisciplinarity", p.45.

20 Benson, "Five arguments against interdisciplinarity", p.45.

structural pressure imposed upon academics and institutions of higher education. As noticed by Brian Barrett, thirty years after Benson's remarks, the push for more integrative studies often corresponds to a survival strategy adopted by less reputable universities which are struggling to find a niche in an increasingly competitive market still dominated by more prominent and discipline-based universities:

> Lower-status universities might institute entirely problem-focused curricula and programmes of study in an attempt to create a niche for themselves in a higher education market expected to become increasingly competitive in coming years (i.e. due to demographic changes and declining numbers of students traditionally considered to be 'university-aged' in the United States as well as in a number of European nations). On the other hand, higher-status universities in the United States might be expected to remain somewhat 'immune' to similar pressures (i.e. their elite reputation is likely to draw a steady stream of applicants and 'consumers' regardless of the programming they offer, making a scramble to implement radical curricular and programmatic change less necessary than in lower-status universities). [21]

Some struggling scholars, departments or universities may indeed perceive interdisciplinarity as a chance to survive in an increasingly competitive and segregated labor market. It is also correct that the lack of a clearly defined epistemology for a more fully integrated knowledge may lead to a certain degree of conceptual confusion or methodological uncertainties. But these arguments are not sufficient to justify the definitive supremacy of disciplinarity over interdisciplinarity. One should not forget that highly regarded scholars and universities have engaged in solid integrative research and curriculum. It is then necessary to uncover more substantial limitations to interdisciplinarity. My objective is now to present two of these cardinal obstacles: first, the paradoxical (and probably unescapable) disciplinary foundation of interdisciplinarity and, finally, the epistemic and methodological challenges to a fully integrative knowledge.

The Paradoxical Disciplinary Foundation of Interdisciplinarity

The will to implement a dialogue between disciplines presupposes a clear separation of the singular disciplines that are going to be connected. Interdisciplinarity can only strive if it is rooted in solid disciplinary grounds. As simply put by the literary scholar Lynn Hunt, "interdisciplinarity cannot live without disciplines" because

21 Brian D. Barrett, "Is interdisciplinarity old news? A disciplined consideration of interdisciplinarity", *British Journal of Sociology of Education* 33/1 (2012), p.110.

"you cannot cross boundaries if you don't know where they are". [22] Despite the laudable call for more integrative research, the fact is that the structuration of university activities along disciplinary lines and departmental identities has been, and still remains, the backbone of most intellectual and scientific advancement since the 19th century. Largely due to their highly integrated modes of operation (through clearly defined departments, scientific societies and highly specialized peer-edited journals), disciplines indisputably played, and keep playing, a key role in the advancement and rapid dissemination of cutting-edge knowledge. Thanks to their rigorous research agendas, their coherent epistemic communities and their sharing of compatible value-systems, disciplines have been instrumental in the most critical scientific revolutions of the last two centuries from the industrial to the current information technology revolutions. As noticed by Richard Edwards, the structuration of research along departmental and disciplinary lines remains dominant regardless of the growing interest in interdisciplinarity facilitated by recent restructuration (creation of applied research centers and interdisciplinary programs as well as numerous attempts to branch out with governmental agencies or private foundations…): "For 10 years and more, public research universities have worked to reform themselves, often producing impressive results. Yet throughout, the academic department has survived largely unchanged – even untouched – by reform". [23]

Despite being challenged, the disciplinary structuration of research still constitutes the dominant framework to extensively train graduate students. In a rapidly changing world, the praiseworthy call for more interdisciplinary research does not yet seem to be matched in reality. Due to the increasing disciplinary specialization, admission to competitive graduate programs leading to employment in well-established organizations or research universities requires a long and rigorous disciplinary training that leaves very little time for the exploration of interdisciplinarity. Following the law on diminishing return, all academic training is a lengthy and time-consuming process. For example, as underlined by Louis Menand, "in order to become an assistant professor in a humanities department, the median time to degree (if your degree happens to be in English) is currently 9.8 years (…) as a registered student in a graduate program". [24] It may thus be unrealistic to expect any graduate student to venture into a cutting-edge interdisciplinary research path when he is still in the process of mastering his own fundamental disciplinary competence.

22 Lynn Hunt, "The virtues of disciplinarity", *Eighteenth-Century Studies* 28-1 (1994), p.1. Henceforth Hunt, "The virtues of disciplinarity".

23 Richard Edwards, "The academic department: how does it fit into the university reform agenda?", *Change* 31-5 (1999), p.17.

24 Louis Menand, "Dangers within and without", *Profession* (2005), p.12.

It could even be counterproductive and "pedagogically doubtful" for such a graduate student "to spend time in interdisciplinary learning projects when the student lacks a mature base in any of the contributing disciplines". [25] In addition, if interdisciplinarity is clearly a path to follow for some specific research agendas dealing with complex and multifaceted real-life problems, in more strictly academic terms, the intense valorization of interdisciplinarity could turn into a professional handicap since most faculty members, especially in research universities, are mostly trained as graduate students, and later hired as junior faculty, based on the excellence of their disciplinary training and expertise. This valorization of disciplinary professionalization despite the growing plea for more interdisciplinarity seems to be confirmed by the rare quantitative studies available on this subject. Very few published scholarly articles can be considered as truly interdisciplinary proving that research excellence is still defined on a more strictly departmental and disciplinary basis. A 2004 National Survey of Postsecondary Faculty cited by Jerry A. Jacobs and Scott Frickel seems to confirm this low publication rate of interdisciplinary research. According to these two authors, most publications are still based on a strictly disciplinary research agenda. The distribution of articles including the term "interdisciplinary" in the title is limited to 3.3% in history, 3.0% in sociology, 2.1% in literature and 1.8% in philosophy. [26] In the same article, Jacobs and Frickel show that the overwhelming majority of faculty in research universities completed their PhD in the same field and department as of their current position: 98.4% in law, 96.8% in physical sciences, 94.7% in sociology, 93% in psychology, 93.4% in political science, 90% in history, 89.9% in economics, 89.8% in foreign languages, 88% in mathematics, 88.3% in philosophy, 87.9% in English and literature. Some departments that are more recent or already structured around transdisciplinary subdivisions have a lower but still high percentage of faculty who graduated in the same department: 79.9% in biological sciences, 76.6% in business, 70.3% in agricultural and home economics, 64.9% in computer sciences… [27] These statistics reveal what could be described as a disciplinary paradox of interdisciplinarity. This is at a time when interdisciplinarity is ever more invoked in efforts to restructure academia that disciplinarity appears to be paradoxically reinforced. Far from challenging the disciplinary structure of higher education, interdisciplinarity may ironically favor its consolidation and thus reinforces the departmental hyper-specialization that is at the core of the disciplinary university. This initial *disciplinary*

25 Benson, "Five arguments against interdisciplinarity", p.40.

26 Jerry A. Jacobs and Scott Frickel, "Interdisciplinarity: a critical assessment", *Annual Review of Sociology* 35 (2009), p.47. Henceforth Jacobs and Frickel, "Interdisciplinarity".

27 Jacobs and Frickel, "Interdisciplinarity", p.59.

paradox is reinforced by what could be described as a *generational paradox* limiting furthermore the feasibility of a new academic world truly restructured around interdisciplinarity. Younger faculty are clearly more open to innovative research cutting through disciplinary lines, but they are also – as pre-tenured faculty – less eager to detach themselves from their home discipline. On the other hand, more senior and especially tenured professors who, due to their experience and hard-won academic freedom, could finally venture into interdisciplinary research may not find it beneficial to rock the disciplinary and departmental boat that they captain since "to gain the freedom to innovate, we must get tenure; yet to get tenure, we must be conformists". [28] This *generation gap* paradox has been clearly summed up by L. Earl Reybold and Mark D. Halx:

> Older faculty members are comfortable with the disciplinary cultures that help a discipline to function effectively. On the other hand, younger faculty [members] are more comfortable with the interdisciplinary approach and feel less concerned about the boundaries. [29]

This difficulty to transcend disciplinarity is rendered even more insurmountable by a new paradox that could be described as the *disciplinarization of interdisciplinarity*. Most fully integrative projects have undeniably a tendency to mutate into new disciplinary formations that consolidate – at the institutional level – into new departments. This is one of the reasons why Stanley Fish, in one of the most debated articles about interdisciplinarity, states that "being interdisciplinary is more than hard to do; it is impossible to do" because "it leaves us with projects that look disconcertingly like the disciplinary projects we are trying to escape". [30] Following the same reasoning, Priya Venkatesan Hays and David Shumway estimate that, far from challenging or transcending the disciplinary structure of research and teaching, interdisciplinarity may paradoxically bolster its consolidation:

> In other words, interdisciplinary, while acknowledged, promoted, and pursued on many fronts, has not evidently radicalized disciplinary studies, programs, and the academy. Interdisciplinary areas have tended to become new disciplines in their own right. [31]

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28 Sylvia Hurtado and Jessica Sharkness, "Scholarship is changing, and so must tenure review", *Academe* 94-5 (2008), p.37.

29 L. Earl Reybold and Mark D. Halx, "Coming to terms with the meaning of interdiscplinarity: faculty rewards and the authority of the discipline", *The Journal of General Education* 61-4 (2012), p.341.

30 Stanley Fish, "Being interdisciplinary is so very hard to do", *Profession* (1989), p.19.

31 Priya Venkatesan Hays, "Epistemic cross talk: why we need – and should desire – interdisciplinarity", *Interdisciplinary Literary Studies* 15-2 (2013), p.225.

> The typical result of integrative programs is the creation of more specialties. American Studies doesn't replace American literature, history and art history; it is added to them. Molecular biology may come to replace an older biology, but by excluding, rather than integrating, the older research program. Again, rather than being postdisciplinary, interdisciplinarity work seems firmly rooted in the disciplinary university. [32]

In addition to these institutional barriers limiting the likelihood of effectively transforming the current academia still based on disciplines and departments, I wish now to address the deeper epistemic and methodological obstacles to such an interdisciplinary project.

The Epistemic and Methodological Challenges to Interdisciplinarity

The laudable goal of interdisciplinarity presupposes a certain degree of permeability between the epistemic and methodological boundaries that delineate disciplines as highlighted earlier by the smoothie's metaphor. The validity and performativity of any interdisciplinary project imply a displacement, reframing and ultimately relocation of concepts and methodologies. The search for epistemic commonalities consequently remains the hardest (and probably unfeasible) task for a truly integrative interdisciplinary research since some disciplines – especially the most convergent ones – have more clearly defined boundaries that isolate them even more from adjacent disciplines. Certain epistemic and methodological barriers delineating disciplines cannot be so easily torn down. Before exploring some of these epistemic barriers between disciplines, one must first acknowledge that certain disciplines such as economics display, within their own disciplinary boundaries, different value-systems and world-views that makes it difficult to offer a coherent disciplinarian response to a specific real-life problem. The first and most obvious epistemic problem lays in the fundamental distinction that exists between qualitative and quantitative approaches. However, as proven by economics, sociology or political science, many disciplines already use a mix of qualitative and quantitative data. But in some cases, for example in economics, the divergence within the field may impair a syncretic perspective. Deep epistemological dissonances can appear within otherwise historically integrated disciplines. Let's take as a first example the way economics could address the current problem of world-hunger: a mathematically deductive approach such as econometry would certainly offer a radically different world-view than a more value-based and sociologically inclined Marxist perspective or a liberal free-market capitalist approach. This

32 Shumway, "Dystopian narrative", p.9.

difficulty to breach epistemological barriers in order to produce an integrative knowledge is also visible when we look at another current real-life problem: the connection between climate change and mass migration. The ethical perspective of a philosopher advocating the abolition of all frontiers in the name of humanism or universalism may not be compatible with the "judgment-free" perspective of a natural scientist or the relativism of a more behavioral sociological approach. An ethically condemnable behavior for a philosopher may also be considered as "normal" for a non-prescriptive sociologist or even "irrelevant" for a natural scientist focusing on "hard" and non-subjective facts. This epistemic incompatibility is especially obvious when one compares "hard" with "soft" sciences: whereas *hard* sciences focus on materiality, objectivity, universal and undisputable laws, *soft* sciences (especially in the Humanities) value relativity, subjectivity, open-ended interpretation and the unpredictability of the human spirit. In some cases, the epistemic incompatibility can run deeper and be ultimately insurmountable: the foundation of mathematics in logic and objectivity is for example totally foreign to the dominant epistemology of literary criticism which is based on interpretation and subjectivity. But highly convergent disciplines such as history, political science, sociology and anthropology may also not be able to provide a truly unified epistemic foundation. Even if all these disciplines can be globally labeled as "social sciences" and even if they all question the nature of human (inter)actions within societies, they still follow different methodologies and do not always share the same world-views. Whereas the dominant epistemology in sociology is deeply rooted in a process of experimentation and validation in the social field, history will mostly focus on the interpretation of past and mostly written archives leaving little room for the exploration of concrete interactions (with the exception of oral history). These distinctive and sometimes incompatible epistemes and methodologies of various disciplines renders unachievable a higher degree of synthesis as well as the formation of a unified knowledge.

Conclusion

I am reaching the end of my presentation and I am fully aware that I just scratched the surface without providing a definite answer regarding the limits and benefits of interdisciplinarity. Arguments lauding and dismissing this quest for a more integrative form of knowledge both contain indisputable advantages and dangers that deserve deeper consideration. After exploring the vast literature on interdisciplinarity, I came to the partial conclusion that interdisciplinarity should be valued as long as it remains relative and conditional. If interdisciplinarity should not be discarded (its values are obvious), it is however necessary to adopt a more balanced perspective that takes into account its limits and potential dangers. It

is true that a growing number of key societal issues such as education, poverty, criminality, out of control urbanization or environmental challenges cannot be fully addressed, and later corrected, without a more transversal *inter* – or *multi*-disciplinary approach. But it is also accurate that the uncontrolled expansion of interdisciplinary programs based on the unique objective to solve "real-life" problems may represent a life-threatening challenge to higher education by drifting away from its original pedagogical mission. If interdisciplinarity may indeed be more suited to address these social challenges, and thus may better contribute to the implementation of new policies, it should not be assumed that the function of research universities is to replace decision makers such as politicians, bureaucrats, professional experts or corporate managers. The fundamental question is then to know if the universities' main mission is to educate people or to solve societal problems? The question remains open but – in a time of budget restrictions combined with a growing cost of higher education and increasing pressure on overworked academic staff – one must be aware that the call for more interdisciplinarity could have a devastating structural impact on universities. Often being requested more from administrators than faculty, this growing call for new integrative programs could also represent a disguised bureaucratic maneuver aiming first and foremost at cutting costs by merging, downsizing or even eliminating weaker or smaller units perceived as *under-productive*. In a time when global economies are highly financialized, the corporatization of universities, to compensate the decline in both public and private funding, poses a serious threat to higher education all over the world. For this reason, all interdisciplinary restructuring of academia must be carefully debated since it may damage in the longer term the viability of higher education in general. It is crucial to anticipate some undesirable effects that could accompany a too systematic interdisciplinary restructuration of universities. Facilitated by the current implementation of a corporate model in educational institutions, the call for more interdisciplinarity could have, especially in the American context, worrisome consequences such as the elimination of tenure or the imposition of mandatory retirement. Whilst the 19th century predisciplinary structure of higher education gave most power to the presidents of universities, a shift to a post-disciplinary and "problems solving" order could dangerously transfer the present-day power held by faculty and chairs into the hands of managers and (non-academic) administrators. The current recruiting of tenured or tenure tack faculty based on disciplinary excellence and departmental affiliation could be easily replaced (and it already seems to be the trend) by an *à-la-carte* hiring of cheaper and disposable part-time or adjunct teachers based on the ever-changing curricular needs of flexible but also short-lived interdisciplinary programs. Focusing on the values of both disciplinary and integrative knowledge, the best compromise may

be to prudently advance towards a minimalist and marginal form of disciplined interdisciplinarity as opposed to a premeditated or preestablished masterplan. A less ambitious or holistic approach to interdisciplinarity may positively help disciplinarians in redefining but also consolidating their own methodologies by adopting a more self-reflexive understanding of what constitutes the unique essence of their respective disciplines. It is indisputable that disciplines can only evolve and become even more relevant once their practitioners are confronted with the blind spots, the ideological dogmatism as well as the potential balkanization of their own disciplinary hyper-specialization. In my introductory remarks, I lightheartedly described my flimsy grasp of interdisciplinarity by comparing myself to Mister Jourdain who practiced prose for over forty years without being aware of it. Far from being an insurmountable weakness, such an amateurish or even unconscious understanding of interdisciplinarity may represent a more rewarding path towards academic excellence. For better or worse, knowledge is and should probably remain deeply rooted in our home disciplines if we want to preserve a bright future for higher education. As elegantly expressed by Lynn Hunt, the safest way to venture into interdisciplinarity may be like visiting a foreign land or learning a new language. These rewarding experiences will undoubtedly enrich us as scholars, but they do not mean that we have to abandon our country or our mother tongue:

> Once you learn the language of another discipline, your relationship to your home one is never again quite the same. But you don't have to expatriate just because you learn a foreign language and enjoy visiting abroad. I believe that the best interdisciplinary work produces its effects back in the various disciplines that it crosses rather than creating an altogether new and different interstitial space. [33]

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