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## Miscellaneous

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## The commodification of academic research and its social legitimation: When the public communication of science becomes propaganda

### Abstract

This paper takes a novel approach to the functional transformation of the public communication of science and technology in the context of the commodification of academia and academic research. It contends that the public representations of university-industry relations and academic entrepreneurship policy should be understood as an instance of the leveraging of the public communication of science and technology for propaganda purposes. To substantiate this approach, this paper elaborates on the concept and functions of propaganda by drawing from traditional and contemporary scholarship. It also examines what the commodification of academic knowledge production consists of, underscoring its contradictions and the negative consequences that it has had for some domains of social life, including academia itself. In view of the foregoing, it is possible to hypothesise the use of the public communication of science and technology for disseminating the 'ideology of academic entrepreneurship' for propaganda purposes. The final section outlines some general criteria that ought to be considered when operationalising this theoretical framework for analysing the media coverage of university-industry relations and academic entrepreneurship. The approach described here should be understood as a first step towards uncovering and criticising the 'common sense'

on which the contemporary political economy of academic knowledge production rests.

### Keywords

**Science communication, public communication of science, propaganda, academic entrepreneurship, university-industry relations, science journalism.**

## 1. Introduction

New trends in the political economy of academic knowledge production are rarely newsworthy. But it is not unusual to come across news, features and other types of content produced by popular media outlets that revolve around university-industry relations (hereinafter, UIRs). Even though most people are oblivious to information of this sort, more attentive readers or

listeners will have surely noticed the insistence on the virtues of the links between academic institutions and for-profit companies, or possibly the fact that ‘academic entrepreneurship’ policy is almost always presented in a rather positive light.

This point can be illustrated with some examples taken from the Spanish media system. Every Monday, the popular radio magazine ‘La Ventana’ –produced by the broadcaster Cadena Ser and with a daily audience of approximately 1 million listeners– includes a section devoted to the ‘technological breakthroughs’ of Spain-based start-ups, called not coincidentally ‘Revolutionaries’ (‘Los Revolucionarios’). In this section, always in interview format, the presenter and his collaborators ask the CEO of the start-up in question about how the company’s science-based technology works and what problems is trying to address. The founding and evolution of these start-ups is often described in terms of personal achievement and success and its technological solution as “ground-breaking”.

In Spain, UIRs and academic entrepreneurship policy also receives strong support from the most influential and widely-read newspapers.<sup>2</sup> Readers not directly involved in academia or science policy but who try to form their own opinions on the collaboration between universities and for-profit organisations are being led to believe that a bright future lies ahead for universities that engage more closely with industry –provided that scholars change their mindset (Meneses, 16 June 2022)– that policymakers have established the necessary legal and administrative framework (e.g., Silió, 29 September 2021; Montero, 27 February 2022) and that governments should generally spend more on R&D and, in particular, on the necessary infrastructure for knowledge-transfer activities (e.g., Mas, 5 May 2023).

Apart from the fact that they deploy the same arguments, another common feature of this type of media content is that neither are there critical voices questioning the proactive approach taken by universities towards the commercialisation and commodification of academic research, nor does such media content ever broach the negative consequences (for researchers, universities and society as a whole) to which such a drift may give rise. At least in the case of Spanish universities, it has been assumed that academic entrepreneurship is a “necessary policy” (to paraphrase Herman & Chomsky [1988]), the questioning of which is inadmissible.

Everything would thus suggest that these examples of media coverage are all very favourably disposed towards academic entrepreneurship policy and UIRs in general. This, in turn, poses the question of the role that such content plays in the new market orientation of universities and the deliberate attempts to “valorise” academic knowledge (“academic entrepreneurship,” also known as the “third mission of universities”). It would not be too farfetched to claim that the public communication of science and technology (hereinafter, PCST) has been placed at the service of a specific political-economic agenda whose aim is to redefine academia and academic research.

But in the available literature on Communication & Media studies and the subfield of science communication (of which PCST is just one instance) there is a complete dearth of research on how and for what purpose the media construct a public image of UIRs and academic entrepreneurship –in Spain and elsewhere. This totally uncharted territory not only requires more empirically-oriented research (which goes without saying) but also more theoretical analyses addressing the design of robust conceptual and theoretical tools for raw

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<sup>1</sup> A selection of the latest episodes (in Spanish) is available at <https://cadenaser.com/podcast/cadena-ser/la-ventana/la-ventana-los-revolucionarios/3356/>

<sup>2</sup> Examples include the following: Sánchez-Caballero (29 September, 2021; 3 December 2022) and Mas (5 May 2023), published in the left-wing online newspaper *eldiario.es*, the fourth most popular news website in Spain, with a user share of 29% (Statista, January 2024, p.4); Meneses (16 June 2022), Silió (29 September 2021), and Pereira and López (10 July 2020), published in the centre-left newspaper *El País*, the most popular daily in Spain (Statista, January 2024b, p.4); Pérez-Barco (7 June 2021), Montero (27 February 2022) and Velázquez (31 October 2022), published in the right-wing newspaper *ABC*, the fourth most popular in Spain (Statista, January 2024b, p.4). These examples are mentioned for illustrative purposes only and without any pretence of exhaustiveness.

data collection and processing. Empirical analysis alone is insufficient in this regard, for there is a need for theoretically-grounded compasses and heuristic devices to make sense of such data.

Addressing this latter gap, the intention here is to engage in theory-building for the purpose of designing a robust conceptual and theoretical approach that scholars in Communication & Media studies can use when enquiring into media representations of science and technology, specifically in connection with UIRs and academic entrepreneurship. Accordingly, the general research question is as follows: *How should media representations of UIRs be understood in terms of purpose, function and effect?*

It goes without saying that there are several possible answers to this question, the one offered here being just one among many. Yet the theoretical framework constructed here: 1) is original in that it explores the interconnections between two instances which have not been considered before; 2) is precise because, by our reckoning, it gets to the crux of the matter, namely, the need to legitimate the new market orientation of universities before society; 3) and last but not least, is productive insofar as it paves the way for future empirical and theoretical research. More specifically, the aim here is to systematise the connections between PCST, the commodification of academia and academic research and the phenomenon of propaganda. The fact that this is the first time that this triad has been examined in its interconnection, to the best of the authors' knowledge, justifies to a certain extent the more theoretical approach adopted.

The paper is structured as follows: Section 2 introduces the concept of propaganda and explores its connection with PCST; Section 3 discusses key aspects of the process of commodification of academic research, with special attention to the socioeconomic conditions underlying the use of PCST for propaganda purposes; Section 4 sets out the first step of the practical operationalisation of the theoretical framework proposed here; and Section 5 offers a summary of the main findings and concludes.

## **2. PCST and propaganda**

Despite (or perhaps because of) the fact that the origins of Communication & Media studies can be traced back to the use of propaganda during the two World Wars of the 20<sup>th</sup> century (Zollmann, 2019), the very concept of propaganda has fallen into disrepute in this research field (Zollmann, 2019; Robinson, 2019). Scholars often assume that propaganda is a thing of the past, and that Western societies are no longer governed (among other 'tools') by propaganda, but through public deliberation and democratic debate—a conception that seems to be somewhat naive (Zollman, 2019; Robinson, 2019; Pedro-Carañana, Broud & Klaehn, 2018) in the face of the ubiquity of propaganda (Robinson, 2019). When the spectre of propaganda cannot be simply conjured away, it is the 'enemies of the Western order', i.e., Russia, China and Iran, among others, who are accused of using it.

A similar attitude towards propaganda currently prevails in science communication or PCST, one of the most important and most rapidly developing subfields of Communication & Media studies. By and large, it is assumed that PCST has nothing to do with propaganda (Roberson, 2020) because this is a "bad thing" (Goodwin & Priest, 2012) or an illegitimate instrumental use of PCST that must be eradicated (Davies, 2021). Although these are normative observations, far too often they have been taken to mean that research does not have to enquire into whether the "social conversation around science" (Bucchi & Trench, 2021) is filled with propaganda content and shaped by propaganda intents—even though it is admitted that science communication can no longer be regarded as free from issues of power and social inequality (Bucchi & Trench, 2021). In this respect, it is very telling that the notion of propaganda has only been seriously addressed in two recent works, but the authors either have focused on the historical context (Olesk, 2017) or have accused one of the usual suspects, namely, Russia, of instrumentalising PCST to this end (Strudwicke & Grant, 2020).

It is impossible to deny that media representations of science can be very ‘ideologically overpowered’, so to speak –which is why researchers should pay more attention to the phenomenon of propaganda. For instance, in the context of the Russian invasion of Ukraine, global media leaders such as *The Guardian* or the BBC have published reports clearly aimed at conjuring up images relating to global warming and the protection of the environment to stir up negative perceptions against Russia<sup>3</sup>. Likewise, and still in connection with the Russo-Ukraine War, and against the background of the growing belligerency between China and the United States, the public has been informed that researchers at Virginia Commonwealth University (Canada) are searching for the physiological, biological and neurological bases of human aggression and violence –a very ideological departure point as it *naturalises* human aggression, instead of explaining it in social terms (see Dorenbaum, 2 October 2022).

There are so many examples of public representations of science and technology underpinned by strong ideological assumptions, which are seldom discussed or challenged, that it seems reasonable enough to assume that propaganda is part and parcel of PCST, for which reason science communication scholars should not disregard this concept. On the contrary, it can be a powerful heuristic device that helps to make sense of certain phenomena that are not yet properly understood. It is argued in this paper that media representations of UIRs and academic entrepreneurship are one such case. But before proceeding to elaborate on this argument any further, it is first necessary to explore the meaning of the concept of propaganda.

### 2.1. *What is propaganda?*

Generally speaking, propaganda is considered to be a process of symbolic manipulation whose purpose is to exert influence on large groups of the population (Hyzen, 2021; Robinson, 2019), generating “public support and/or relevant action” in favour of the interests of groups or social strata implementing such strategies (Zollmann, 2019). There are different forms of manipulation, from deception to misrepresentation, through coercion, among others (Bakir *et al.*, 2019; Robinson, 2019) and propaganda can be media- or non-media mediated, that is to say, produced and disseminated by the media or by other social institutions (Zollmann, 2019). The practice of propaganda is inevitably aimed at undermining human agency and decision-making, since target audiences are expected to behave according to how propagandists want them to behave (Robinson, 2019; Herman & Chomsky, 1988). Propagandists never declare their real interests and consent is never freely given (Bakir *et al.*, 2019). As a result, propaganda is a distinctive form of organised persuasive communication because it is non-consensual (Bakir *et al.*, 2019; compare Zollmann, 2019).

Propaganda does not happen by chance but is intentional and organised. Regarding intentionality, Robinson (2019) argues that propaganda should be understood as “the active promotion of particular world views.” Particular interests are imposed in and through propaganda for it consists of producing representations based on the strategic selection of certain aspects of reality which are then structured to form a logically coherent discourse – in keeping with the interests of the propagandist (Todorov, 2010). In relation to its organised character, propaganda represents a “sustained campaign” (Hyzen, 2021) or “coordinated attempt” (Robinson, 2019) to exert influence. In a deeper sense, the organised character of propaganda means that it is the material expression of interests organised at the social level, or as a social power. Propaganda cannot be truly effective without money, time, and labour, thus making it almost the exclusive preserve of the most powerful social groups (Mullen, 2021; Fuchs, 2018; Herman & Chomsky, 1988).

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<sup>3</sup> See 1) <https://www.theguardian.com/environment/2022/nov/08/cop27-climate-summit-volodymyr-zelenskiy-ukraine-president-speech>; 2) <https://www.bbc.com/news/world-63011640>. It goes without saying that the same strategy may have been adopted by the Russian government.

The notion of propaganda is closely associated with that of ideology. The connection between the two will prove to be relevant to the discussion on the social legitimization of UIRs and academic entrepreneurship presented below. At this point, suffice it to mention that propaganda is “the tangible expression of ideology in communication” (Hyzen, 2021); a practice intended to disseminate ideological constructs that are expected to become dominant, namely, the “natural,” self-evident way of conceiving and interpreting a given reality (Sussman, 2016; see also Robinson, 2019). This is a significant point because it differentiates propaganda from other similar activities, such as marketing or public relations.

This use of propaganda for creating or maintaining ideological beliefs is what Hyzen (2021) terms “slow propaganda”, as opposed to “fast propaganda,” which is aimed at prompting quick responses to certain causes or in specific situations (e.g., in times of war). The notion of ‘slow propaganda or ‘low-intensity propaganda’ brings to light a hitherto less researched facet of the phenomenon of propaganda, namely, its capacity to establish the boundaries of the thinkable with respect to a given reality –a far more lasting and pervasive effect of propaganda content (Vázquez-Liñán, 2021). As will be seen below, this determination of propaganda as ideology-building and as a strategy for shaping social consciousness is of vital importance when exploring the instrumental use of PCST for propaganda purposes in the context of the commodification of academia and academic research.

There can be no complete exposition of propaganda as “non-consensual organised persuasive communication” (Bakir *et al.*, 2019) without addressing the ideological function of the media. That the media play an important role in the production and dissemination of propaganda is a well-known fact at least since Herman and Chomsky’s (1988) seminal work. And this train of thought has inaugurated a very productive and enlightening, albeit marginal (see Mullen, 2021) area of research in Communication & Media studies (Pedro-Carañana, Broud & Klaehn, 2018). As far as the ideological role of the media is concerned, there does not necessarily have to be a ‘conspiracy’ between the social elite and corporate media managers (although this possibility should not be ruled out *a priori*) (Mullen, 2021). Journalists and media outlets operate in a social environment shaped by certain structural conditions, one of the most important being media ownership and the fact that news making is a for-profit activity (Herman & Chomsky, 1988; see also Zollmann, 2019). Given this and other structural features, the interests of the most powerful social actors naturally converge, as it were, in media content. As to the role of journalists in propaganda making, important elements include their socialisation in the newsroom –with the concomitant internalisation of the dominant ideology(-ies) (Mullen, 2021), their dependence on institutional information sources (Robinson, 2019; Zollmann, 2019), and their precarious working conditions.

In relation to this last aspect, some general background information is necessary. It is well known that the traditional media system is currently immersed in a deep and lasting crisis all over the world (McChesney, 2008; Almirón, 2010). With the advent of the Internet and the phenomenon of mass online news consumption, the number of online news outlets multiplied, meaning that advertising revenues had to be divided among a larger number of players –a situation further aggravated by the emergence of social media platforms which also claim their respective share of advertising revenues. This state of affairs has even jeopardised the long-term sustainability of the so-called legacy media (UNESCO, 2022).

Journalists have been under greater pressures as a result of the shakier financial position of the media outlets employing them. Layoffs and their increasingly more precarious working conditions are two of major problems that journalists face on a daily basis. This has made them more dependent on information produced in the press offices of governments, public and private institutions, and businesses. In Spain, specifically, the political dependence of the media is a matter of concern for professionals working in the sector (Asociación de la Prensa de Madrid, 2022). Reporters Without Borders has recently indicated that the Spanish media system has become increasingly more politicised, owing above all to the high degree of

political polarisation (Reporteros sin Fronteras, 2023)<sup>4</sup>. Generally speaking, the situation of journalism in Spain and elsewhere is grim (McChesney, 2008).

In sum, propaganda is a form of communication based on symbolic manipulation whose aim is to harness the support of relatively large groups of the population for particular interests or to prompt them to take relevant action in this regard. Propaganda is both non-consensual and manipulative; is based on the symbolic manipulation of reality; and its real purposes are never revealed, so that consent 'to be convinced' is not freely given. The interests that propaganda serves are more often than not those of powerful social groups with the resources necessary to make it effective, which means that it is always intentional. As already noted, propaganda can be of the 'fast' or 'slow' kind. The latter is particularly relevant here because it is chiefly aimed at maintaining and reinforcing certain ideological beliefs and at shaping public representations. The media play a key role in the dissemination of propaganda. News coverage and other media content construct certain representations of reality that are systematically skewed towards the interests of the elites.

The following section examines the social conditions under which academic research is commodified, as well as discussing how this new market orientation of universities needs to be socially legitimised, thus creating the conditions for the instrumental use of PCST for propaganda purposes.

### **3. The use of PCST for propaganda purposes in the context of the commodification of academic research**

Up until now, the discussion has mainly revolved around the soundness of the thesis concerning the instrumental use of PCST for propaganda purposes. The time has now come to broach a more complex matter, namely, whether this situation has been expedited by the current commodification of academia and academic research. This point should be primarily addressed in terms of the contradictory and conflictive dynamics (at the economic and social levels) that such a process generates, a circumstance which, in turn, requires the social legitimization of UIRs and the activities of academic entrepreneurship in which academic institutions are increasingly engaging. In other words, given the problems that the commodification of academic knowledge production has given rise to, the 'ideology of academic entrepreneurship' must be disseminated to, and embraced by, large layers of the population.

#### **3.1. *The commodification of academia and academic research: a brief overview***

As a thorough analysis of the political economy of knowledge production in contemporary capitalist societies is beyond the scope of this paper, the intention here is to offer a brief overview for the purpose of gaining further insights into the contradictory and conflictive character of the commodification of academic research and how this creates the conditions for the instrumental use of PCST for propaganda purposes.

The commodification of academic research is just one of forms that the commodification of science takes –the former is internal to the latter and underpinned by the same general social and historical forces (Arboledas-Lérida, 2023). Accordingly, the commodification of academic research should be understood as the transformation of knowledge produced in academic contexts –mostly, but not necessarily, with public funding– into a commodity that universities sell to generate income (Radder, 2010). The production of knowledge as a commodity can take several forms but it almost customarily entails collaboration with industry (hence, UIRs) (Slaughter & Cantwell, 2012; Lave, Mirowski & Randalls, 2010; an exception to this rule is discussed in Arboledas-Lérida, 2023). Western universities are expected to become more "entrepreneurially-oriented," in the expectation that the "valorisation" of knowledge

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<sup>4</sup> For an analysis of other structural weaknesses of the Spanish news media system, see Jiménez (2019) and Reig and Labio-Bernal (2017).

through market mechanisms will help them to become more financially independent from governments and national states (Slaughter & Cantwell, 2012), apart from contributing to the accumulation of national capital.

Yet academic entrepreneurship and UIRs are not just a Western phenomenon but are also to be found in other countries, such as China (Suttmeier, 2017) or Argentina (Rikap, 2021). As the pressure to generate income through the production and sale of industry-relevant knowledge has mounted, universities have become “hybrid institutions” struggling to meet conflicting demand –profit-making, on the one hand, and allegiance to their traditional roles, on the other (Compagnucci & Spigarelli, 2020; Oliver & Sapir, 2017). One of the most outstanding changes that the commodification of knowledge has brought about in universities is their adoption of corporate-like styles of management (Slaughter & Cantwell, 2012) and the fact that management has tightened their grip on more and more academic activities with an eye to better aligning them to the imperative of raising income (Slaughter & Cantwell, 2012).

According to the historian of economic thought Philip Mirowski, it is debatable whether policies on knowledge transfer, UIRs and academic entrepreneurship have produced the desired results –and whether they actually offset the negative effects that such policies have caused and continue to cause (Mirowski, 2012). This has led the author to contend that the commodification of knowledge as a whole may be no more than a colossal ‘Ponzi scheme’ entirely based on unrealisable promises and doomed to collapse sooner or later (Mirowski, 2012). In purely economic terms, it can be concluded that the policy of knowledge commercialisation has not lived up to the initial expectations: some authors have stressed that it has even resulted in losses for some universities (Mirowski, 2012; Slaughter & Cantwell, 2012) and also for society at large, given that most academic entrepreneurship initiatives implemented at universities in the United States, the United Kingdom and Europe are supported with public funding (Slaughter & Cantwell, 2012)<sup>5</sup>. This signifies that the sought-after financial autonomy of academic institutions has not been achieved (Slaughter & Cantwell, 2012; Lave, Mirowski & Randalls, 2010).

The commodification of academic knowledge production has also had a lasting impact on other facets of social life. It has resulted in “epistemic injustices,” as access to commodified knowledge –protected by intellectual property rights– has been restricted (Birch, 2017; Lave, Mirowski & Randalls, 2010). More generally speaking, it has hindered knowledge dissemination, creativity and innovation, since IP rights represent an additional burden to already costly innovation processes (Rikap, 2021; Birch, 2017). In academia, the commodification of knowledge has resulted in the alignment of research agendas with the interests of industry (Kleinman, 2010). Consequently, greater pressure has been brought to bear on industry-sponsored researchers to prevent them from disclosing sensitive research results, which in turn has led to greater secrecy and less accountability (Radder, 2010). In light of the foregoing, the fact that policymakers continue to push for closer UIRs and more knowledge transfer can only be understood, according to some authors, as the expression of a deep ideological belief in ‘the market knows best’ maxim (Mirowski, 2012; Lave, Mirowski & Randalls, 2010) –hence, the importance of addressing ideological and communication aspects when analysing the political economy of contemporary knowledge production (Tyfield, 2012).

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<sup>5</sup> According to the “Fundación Conocimiento y Sociedad” (Fundación CyD, 2023), in 2021 (the last year for which data are available) the total income generated by Spanish universities as a whole from the economic exploitation of knowledge—a proxy for the income generated from all knowledge transfer activities—amounted to €1.6 million (Fundación CyD, 2023, p. 209). For the same year, the overall expenditure on R&D activities carried out by those same universities amounted to €4.6 billion.

### 3.2. *Manufacturing consent around the 'necessary policies' of the commodification of academia and academic research*

Given the negative effects outlined above, it should come as no surprise that the commodification of academia and academic research remains a highly divisive issue (Holloway, 2015; Mirowski, 2012; Cooper, 2009). For one thing, academic researchers have not wholeheartedly embraced the principles, values and organisational arrangements that come with the new market orientation of universities (Compagnucci & Spigarelli, 2020; Oliver & Sapir, 2017; Holloway, 2015; Cooper, 2009). Scholars are currently struggling to navigate through the complexities arising from the new situation and the conflicting pressures to which they are subjected on a daily basis (Tapanila, Siivonen & Filander, 2020; Freel, Persaud & Chamberlin, 2019; Huang, Panga & Yub, 2016; Teelken, 2012). This state of affairs is basically down to greater managerial control and to the ensuing loss of decision-making powers on the part of rank-and-file scholars (Tapanila, Siivonen & Filander, 2020; Lust, Huber & Junne, 2018; Huang, Panga & Yub, 2016). More generally speaking, empirical research has shown that the greater the commitment of scholars to the traditional "academic identity" is, the less likely they will be to engage in knowledge valorisation activities (Wang *et al.*, 2022). As scholars still have some degree of autonomy when it comes to commercialising their own research, many prefer not to do so (Holloway, 2015). Their negative perception of the commodification of academia and academic research is reflected by their passive and apathetic attitude towards knowledge transfer activities, since only a relatively small part of the academic workforce engages in such practices (Perkman *et al.*, 2013).

It requires no great stretch of the imagination to ascertain why this resistance on the part of scholars to the commodification of knowledge poses a problem for academic managers striving to generate income for their institutions through knowledge transfer activities –and the same holds true for policymakers who have high stakes in the successful implementation of UIRs and initiatives in academic entrepreneurship. As a result, raising the "entrepreneurial spirit" of faculty is now a pressing issue that academic managers and science policymakers must address (Koryakina, Sarrico & Teixeira, 2015; Pinheiro, Langa & Pausits, 2015). An effort is needed to make UIRs more acceptable in the eyes of academic researchers, for if they do not freely consent to this situation, they cannot be forced to do so either. This is where the "manufacture of consent" through propaganda comes into play in the context of the commodification of academia and academic research. It is essential to convince scholars of the virtues of UIRs and the benefits that such a policy will generate –notwithstanding the evidence to the contrary. As already observed, this is one of the functions of propaganda.

However, for the successful implementation of policies aimed at commodifying academic knowledge, it is not only necessary to obtain the consent of the academic community, for there are other concerned parties whose support is also indispensable. In general, any far-reaching science and technology policy requires for its successful implementation of the support (or the acquiescence) of relevant sectors of the population, at the very least (Davies, 2021; Gregory, 2016; Bauer, 2008). Indeed, the recent wave of enthusiasm for PCST among policymakers can be explained precisely in those terms (Weingart, Joubert & Connoway, 2021; Conceição *et al.*, 2020; Thorpe & Gregory, 2010). Academic entrepreneurship and UIRs are no different in this respect. Public support is all the more necessary in this context given that the gradually greater market orientation of universities, resulting from the adoption of the rationale behind the commodification of knowledge, entails a redefinition of universities as social institutions in terms of their function (from research and teaching to research, teaching *and* knowledge transfer), their integration in the social fabric (now decisively affected by their links to industry), and their long-term financial sustainability (from unconditional public funding to financial autonomy attained through income-raising activities).

Along these lines, it warrants noting that empirical research has demonstrated that non-experts tend to be distrustful of university–industry collaborations (Besley *et al.*, 2017). As these authors point out, such a negative attitude may be very detrimental to research policymaking aimed at fostering UIRs and knowledge transfer through academic entrepreneurship (Besley *et al.*, 2017). Even though Besley *et al.* (2017) attempt to “mitigate,” in their own words, the negative impact of such a circumstance on UIRs with several recommendations in communication terms, these are of little avail insofar as the commodification of academic research goes against the interests of the large majority of the population (see the negative consequences described above). There will always be a lack of support for UIRs and academic entrepreneurship. But this resistance can be circumvented to some extent if public support is ‘manufactured.’

The resistance of academics and society at large to UIRs and academic entrepreneurship represents an obstacle to the successful implementation of these policies –and which has to be eliminated by means of communication. More specifically, the *social legitimation* of the new market orientation of universities has made its way on to the agenda and constitutes one of the tasks of the day for academic managers and policymakers. In other words, consent to the commodification of academia and academic research is required and has to be produced or ‘manufactured’. It is on these grounds that it is possible to hypothesise an instrumental use of PCST for the purpose of disseminating what can be called the “ideology of academic entrepreneurship” among the population<sup>6</sup>.

#### **4. Making sense of the PCST –propaganda connection in the context of the commodification of academic knowledge**

So far, the theoretical approach described above has been limited to demonstrating that it seems reasonable enough to assert that there is an instrumental use of PCST for propaganda purposes accompanying and evolving with the process of knowledge commodification in academia, insofar as people (first and foremost, academic scientists) need to be convinced that UIRs and academic entrepreneurship are necessary for society to reap the benefits of scientific research. However, whether the ideology of academic entrepreneurship has been propagated or not and, if so, to what extent, plus the role played by the media in this regard, are questions that can only be answered empirically on the basis of the theoretical approach outlined here. Having established that it is both necessary and pertinent to address the public representations of UIRs and academic entrepreneurship as a phenomenon of propaganda, we proceed to articulate this theoretical framework in more concrete terms and work out consistent criteria for establishing the propagandistic (or otherwise) character of media representations of UIRs and academic entrepreneurship.

The first important remark in this regard is that the public representations of UIRs produced by the media should be understood as instances of “slow propaganda” (Hyzen, 2021). This means that the main issue at stake is the creation and maintenance/reinforcement of certain ideological beliefs with respect to what academic institutions are ultimately for and

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<sup>6</sup> In the light of the conceptualisation of propaganda developed above, it can be claimed that this “ideology of academic entrepreneurship” represents an ideological construct which is internally consistent–based on the ideologically motivated combination and structuring of certain aspects of reality–and which aspires to become not only legitimate (*a* form of understanding universities and academic knowledge production in contemporary capitalist societies) but also hegemonic (*the* way of understanding and interpreting how universities are integrated into the social fabric). Drawing from the existing literature (Holloway, 2015; Mirowski, 2012; Slaughter & Cantwell, 2012; Lave, Mirowski & Randalls, 2010; Cooper, 2009), the rationale behind the ideology of academic entrepreneurship can be defined as follows: its core *value* is the idea that universities can only have a positive impact on society through market mechanisms; the *principles* at stake have to do fundamentally with the necessity and desirability of close links between universities and for-profit companies; at the level of *practice*, the ideology of academic entrepreneurship prescribes the commercialisation of research results, along with more corporate-oriented approaches to academic management.

how they must be funded and integrated within the social fabric. This could have an important bearing on several aspects of media coverage, including the frequency of news items on UIRs and the formats employed (more reports and interviews and less breaking news and short pieces, for instance), among others.

Besides, the operationalisation of the concept of propaganda has proved to be difficult to achieve when dealing with media content (e.g., Mullen, 2021; Zollmann, 2019; Pedro-Carañana, Broud & Klaehn, 2018). The problem basically lies in establishing an adequate yardstick for assessing whether news items have a propaganda purpose or not. In other words, it is necessary to define clear and consistent analytical criteria for identifying the presence of propaganda in media content.

As an initial approach in that direction, the theory of the functions of ideology proposed by the literary critic Terry Eagleton can be particularly useful. According to Eagleton (1991), there are four main functions that ideology, understood as the legitimation of the power of a social class or an alliance of classes over others (Eagleton, 1991, p. 5; compare Žižek, 1994), usually performs. These are as follows:

- Promoting values and beliefs that are functional for the dominant social relations. Also important in this respect, as Eagleton remarks elsewhere (1991, pp. 14–15), is that any given ideology must resonate to some degree with people’s everyday experiences and understanding of their own social reality. One of the values associated with UIRs that could be promoted is that, to be truly effective, science must be geared towards resolving societal problems –and that society can obtain the benefits deriving from this only by means of knowledge- transfer activities involving profit-making (see Holloway, 2015)<sup>7</sup>.
- Naturalisation of those values and beliefs in order to present them as self-evident and unquestionable. Treating ‘innovation’ (to be achieved through knowledge transfer) as an end in itself can be considered as one of such procedures in the context of the public representations of UIRs and academic entrepreneurship.
- Denigrating and/or excluding alternative belief systems. The absence of criticism of the process of knowledge commodification in academia in media coverage of academic entrepreneurship can be interpreted in this vein.
- Misrepresenting, concealing or downplaying phenomena of social reality that may contradict the ideological postulates being propounded. If journalists do not discuss the downsides of knowledge commodification in their stories (that are well documented in the extant literature), it can be taken as an expression of an ideological –propagandistic intent.

To these more general criteria should be added other aspects inherent to media coverage on which researchers should focus. For the sake of brevity, only three of them are dealt with here: framing, salience and information sources.

As for framing, Mullen (2021) observes that it is not only important whether a given topic receives media coverage or not, but also how it is generally approached and interpreted. In his analysis of the British media coverage of the Great Recession, the author found that the ‘There Is No Alternative’ framework (public budget cuts as necessary or even desirable) prevailed even in left-wing media outlets—thus evincing the ideological role played by the media, according to the author.

Moving on to salience, Zollmann (2019) notes that when a given news outlet minimises the space or time devoted to a given issue, it might be trying to downplay its importance and to reduce its social salience –something that can be connected with the function of “concealment” function that ideology performs, according to Eagleton.

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<sup>7</sup> This is the framework at work in a few of the news items mentioned at the beginning of this paper; the clearest example –which also includes non-negligible doses of nationalism–is Sánchez-Caballero (3 December 2022).

Finally, in relation to news sources, their number and diversity are important variables that should be considered in any analysis. For Zollmann (2019), that certain views are overrepresented whereas others are minimised when discussing a given social problem is, in the long run, a clear sign that the aim is propaganda. At the same time, it has also been pointed out that the institutional affiliation of news sources is paramount (Mullen, 2021; Pedro-Carañana, Broud & Klaehn, 2018). More often than not, the interviewees belong to the same associations, institutions and/or political groups whose interests underpin the propaganda campaign and who stand to gain the most in the event that the latter is successful.

Although the aspects examined above do not provide an exhaustive description of the complexities of media coverage of UIRs and academic entrepreneurship, they do serve as a good initial approach to investigating into the leveraging of PCST for propaganda purposes. By delving into the connection between propaganda and PCST in the context of the commodification of knowledge in academia, this theoretical framework helps to overcome the predominant one-sided conception in science communication studies with respect to the functional transformation of PCST brought about by the new market orientation of universities and other academic institutions. The value of this theoretical approach is also evidenced by the fact that it can serve as a bridge between the field of science communication studies and that of propaganda studies (both belonging to Communication & Media studies), thus laying the foundations for future collaboration and cross-fertilisation.

## **5. Conclusions**

This paper has proposed a new reading of the functional transformation of the public communication of science and technology in the context of the commodification of academia and academic research, contending that the media coverage of the university-industry relations and academic entrepreneurship policy both point to the leveraging of PCST for propaganda purposes.

To substantiate this new reading of PCST, we have drawn from traditional and contemporary scholarship on propaganda to identify its main features as a communication phenomenon, considering it –following Bakir *et al.* (2019)– as a form of communication that is non-consensual, deliberately manipulative, intentional and organised.

Along these lines, we have attempted to describe the main aspects of the commodification of academic knowledge, shedding light on its internal contradictions and its negative consequences, as highlighted by experts. On this basis, we have argued that the resistance and conflicts that the commodification of knowledge has sparked and will continue to provoke make its social legitimization necessary –for which reason it is plausible to suggest that PCST is instrumentalised for propaganda purposes in media coverage of UIRs and academic entrepreneurship. To conclude, we have developed a few general guidelines for operationalising propaganda in the context of media content analysis, based above all on Terry Eagleton's theory of the functions of ideology.

To date, there have been few calls for researchers in Communication & Media studies to analyse the political economy of contemporary (capitalist) knowledge production, in the face of the growing importance of its ideological and communicative aspects (e.g., Tyfield, 2012; Lave, Mirowski & Randalls, 2010; Bauer, 2008). This paper should be regarded as the first step towards the development of the research program in the political economy of science and technology in that direction. Clearly, there is a need to prove conclusively that the 'common sense' around the 'necessary policies' of the commodification of academic research has been manufactured –among other means, by propaganda. And scholars in Communication & Media studies are in an ideal position to make a meaningful contribution in this regard.

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