

The Political Economy of the Journal Impact Factor

Abstract: This paper argues that the rise of the Journal Impact Factor is a result of the perceived value of quantification measures in modern society and the restructuring of capitalism. A key implication of this acceptance is explored, namely, an increase in global academic dependency.
Resume:

1. Introduction

The journal impact factor (JIF) and the citation indices upon which it is based is an increasingly important aspect of the 21st century's information landscape. From an indicator few knew anything about it has now become a matter of deep importance to journal editors and authors the world over as it is increasingly used as means of evaluation and an indicator of high achievement (Smith 2006; Ogden & Bartley 2007). Although some criticism has been forthcoming of such indicators as the JIF, much of this is from a technical viewpoint which aims to either discredit the use of such measures or devise improvements (Macdonald & Kam 2007; Harley & Lee 1997; Yeung 2002; van Diest et al. 2001). This is absolutely essential work, but this paper wishes to do something different. It puts forth an explanation for why the JIF enjoys its current popularity and then seeks to elaborate its likely effects on the norms of academic dependency.

2. Critics of the JIF

Criticism has come along with awareness and widespread use of the JIF in academic circles. Per O Seglen, a Norwegian scientist, is one of those casting doubt on the use of citations and JIF data in the evaluation of research and researchers. He argues that scientists don't (and in fact can't) cite all of their intellectual debts. In fact, for Seglen, space proves to be a critical limiting resource in this regard. Simply put, there is not enough pages to list all those who have influenced a particular project. Hence, Seglen argues, scientists cite for utility – how does the citation augment the work at hand, rather than for reasons of acknowledging intellectual debts (Seglen 1997). Scholars within the field of information science have also criticized the use of citation analysis for research evaluation. Michael and Barbara MacRobert attack the heart of the citation enterprise: “the citation analyst begins with the assumption that references cited by an author are a roughly valid indicator of influence on his work” (MacRobert & MacRobert 1989, 342). They go on to point out seven problems with this assumption ranging from biased citing, self-citing, lack of citations to informal influences, different types of citations, and variations in citation rates. Alongside this critique MacRoberts and MacRoberts bemoan the lack of studies examining the extent of these problems. More recently, R.N. Kostoff has also criticized the use of citation analysis for research evaluation. He enumerates four basis roles for citations: bookmarks, intellectual heritage, trackers of research impact, and self-serving purposes. Given the many reasons people cite, drawing conclusions about the

quality of a contribution using citations is, he suggests, extremely problematic: “What meaning, then, can be ascribed to the field of citation analysis and the metric of citation counts if the basic unit has such associated uncertainty?” (Kostoff 1998, 31)

While the usefulness of such critiques is beyond doubt, this paper wishes to explore a different, through related issues, namely, what has made the JIF and the citation indices upon which the indicator is based so successful despite the leveling of such critical analyses over the years.

A number of scholars have written of the impact quantitative measures of academic performance have (journal rankings, school rankings, university rankings), but few elaborate in any great detail about why they are in the ascendant at this particular moment in time. Slaughter & Roades, for example, suggest that these changes in higher education be seen as a “shift from a public good knowledge/learning regime to an academic capitalist knowledge/learning regime” resulting from decreasing government funding of universities coupled with periodic fiscal crises (Slaughter & Roades 2004, 8, 14). Edward Hackett similarly argues that “universities have become more dependent on external agencies for material and cultural resources” which has contributed to the creation of new structures, roles, and processes in higher education. These include new forms of managerial control that reside outside academic communities themselves. These new bureaucracies require, according to Hackett, “objective quantitative performance standards that can be applied independently of scientists’ substantive expertise” (Hackett 1990, 268). R.N. Kostoff notes that “as debt in the U.S. has piled up there are more pressures to choose between research and things like health and welfare” so that “accountability of all government programs has increased substantially.” (Kostoff 1998, 31) But for Kostoff the form this accounting takes is constrained by the data processing capabilities available and, perhaps more importantly, the cognitive capacities of the judges – hence simple quantitative indicators are preferred over other more complex measures. Yves Gendron has explicitly examined the role of journal rankings in creating, following Lyotard, what he calls academic performativity. This increasing stress on academic performativity for Gendron seems to be a result of the growing influence of auditors in the operation of non-financial institutions, a group Gendron believes are generally “not qualified to understand subtleties in course curricula, research articles, and journal policies. Instead the work of auditors is predicated on a broader viewpoint, to arrive at the development of quasi-universal measures and standards of performance which, in the same way as generally accepted accounting principles, are presumed to facilitate users’ comparisons of performance across different settings” (Gendron 2008, 110). Hugh Willmott argues that the combination of “weak economic growth and/or recession” in the private sector leads to government attempts to privatize parts of its operations for the benefit of private capital. Where this cannot easily be done, “an alternative is to simulate market discipline ... for example, by tying the allocation of funds for higher education to performance measures” that approximate “market discipline by making markets and institutions compete with each other for rankings that are linked to the provision of valued material and symbolic resources” (Gendron 2008, 100).

Of course, all of these works are essentially correct in the surface causes leading to the use of quantitative measures of academic performance, but none really gets to the heart of the process as their aim is more to show the pernicious or unintended side effects of the new regime. In the following two sections I will discuss two factors that I think provide

an explanation for why citation analysis in general and the JIF in particular are gaining prominence.

3. The Allure of Quantification

Kostoff and others are surely right in noting the allure of quantitative indicators to policy makers. The history of much of Western thought, in fact, suggests that this allure is not something new. Intellectuals from Pythagoras to Nicholas of Cusa have all considered that numbers were something special – a link to a transcendent realm or even God itself. Numbers today continue to have a certain aura about them. They form the language of natural science, which is in the minds of most, the pursuit of knowledge through experiment and reason. Numbers through their association with science in our society have become in fact a shining symbol of rationality (Bogdan & Ksander 1980, 307) so that even spurious indicators such as the JIF can reflect the light of reasonableness if the context of their production is ignored or otherwise overlooked. Acting as “symbols of precision, accuracy, and objectivity” despite the complexity of their production (Stone 2002, 137), numbers and quantification hide the messiness of the real world, making invisible the political and ethical choices that underlie their collection and interpretation. For bureaucratic forms of social organization needing to apply inflexible rules to complex situations that defy simplification this is an especially useful advantage. Counting “offers the promise of conflict resolution through arithmetic ... Numbers provide the comforting illusion that incommensurables can be weighed against each other, because arithmetic always ‘works.’ Given some numbers to start with, arithmetic yields answers” (Stone 2002, 136-137). Numbers act as a kind of lubricant that allows for decisions to be made without much thought. But they are also useful for hierarchical organizations as they allow for the concentration of power. People in positions of power do not have the time to sort through the peculiarities of each individual case. Instead they rely on others in their organizations to summarize succinctly the “facts” that they believe they need to know to make a decision. These facts often take the form of numbers with “a single number [being] the ultimate step in the reduction of complexity” that high-level decision-makers frequently demand.

If we turn our attention to the citation analysis and the JIF it becomes clear that the sanctity of numbers is definitely at play here. Kostoff is again correct to note that citation analysis as a tool for research evaluation is a product of the desire for simplicity. He writes that “there is substantial motivation from assessors to have simple quantitative indicators which could drive the resource allocation process ... rather than use the more complex and expensive and subjective qualitative peer review evaluation process” (Kostoff 1998, 32). Similarly, the notion of numbers as inherently accurate and precise is reflected in the JIF figures themselves which are not rounded to a whole number but instead calculated to two decimal places. Doing so certainly adds to the perception of accuracy and precision. In fact, the JIF is apparently deliberately presented in this way in order to aid the ranking of journals (Garfield 2006). For the users of the database, distinct values are all that is apparently needed in order to produce a clear hierarchy of journals, rather than one in which journals are “clumped” together in various ranges. The numbers are presumed to be precise and accurate enough to allow for this kind of differentiation between journals. Similarly, the JIF as a simple number removes from view many of the otherwise sensitive decisions that have gone into its production (for example, the geographic, linguistic, and political biases of the database). Of course, it could be argued that the database merely makes use of bibliometric laws in order to guide the selection of

the most important journals in the discipline. However, this is just a further mystification based, once again, on the apparent objectivity of numbers. Bibliometric laws do not reflect the natural world in the same way as the law of gravity does. Instead it reflects a man-made construction. The small number of “top” journals in a field is not the result of a natural process, but a human one involving political and social choices concerning the distribution of resources and prestige. Be that as it may, numbers and procedures of quantification in our societies today still hold allure enough to make an indicator like the JIF appear to be product of an objective scientific process. Their nature as numbers not only simplifies the world senior managers need to deal with, but mask the political and social decisions that go into their creation, decisions that would otherwise be contested.

4. Capital and Higher Education

But the popularity of the JIF also reflects social forces that are much more recent than the mysticism of numbers. The JIF and the Journal Citation Reports database that makes its calculation possible are owned by Thomson Reuters, a large multinational corporation that is at the forefront of information capitalism, intuitively suggesting that the changing nature of the world’s currently dominant socio-economic system is also likely to be involved in generating the popularity of the JIF as a research evaluation tool. A perspective deriving from the tradition of autonomous Marxism (Witheyford 1999) can shed some light on how the JIF, JCRs and the socio-economic context of our times interact.

Autonomist Marxism sees capital as dependent yet inherently antagonistic to labour, its great nemesis. Whereas traditional Marxist thought tends to explain history in terms of the unfolding laws of capital, autonomous Marxism sees history as a product of battles labour fights to free itself from the grip of capital and capital’s response -- which is to decompose labour’s organizational form and re-compose it in terms that incorporate it once again as a vehicle for capital accumulation. Yet the basic contradiction of capitalism remains throughout; capital does not pay labour its full value and so new conflicts and a new working class emerges.

If we look at the history of capitalism we can identify three broad “cycles of struggle” that are distinctive in terms of the roles of capital, state, and labour. In the first of these, which may be identified with the latter half of the nineteenth century up to the First World War, skilled labour is increasingly absorbed into the factory but maintains control of much of the knowledge of the production process. The state plays little role in the economy. Conflict between capital and labour revolves around control of the shop floor and conditions of labour and progressively escalates over the years culminating in the Russian Revolution of 1917. From this point onwards capital and the state work to reform the system by decomposing the working class. Taylorisation and later the assembly line removes craft knowledge from the worker while the state slowly starts to take a role in stabilizing the economic cycle. But this is not enough to rid the system of crisis. A new working class quickly emerges that realizes its strength not through knowledge of the production process but its ability to shut that process down. As a result capital is forced into a further round of class decomposition by tying wages to productivity while the state develops a social wage: welfare, unemployment benefits, health insurance, and educational subsidies. It is at this time as well that capital is forced to take into consideration sites of production outside the factory for the tedium of the assembly line

breaks down the workers mentally and physically and so threatens the very source of profit required to keep the accumulation process going. The household becomes a site of labour repair (a social factory) as well as reproduction, with female unpaid labour also enrolled as key consumers in a new mass production and consumption economy. The years immediately following the end of the Second World War see the expansion and apparent stabilization of this regime, but the cracks begin to show again in the 1960s as workers start to resist union negotiated conditions of work and pay in what the autonomist Marxists have come to call “the refusal of work”. In this revolt they are increasingly joined with other forces in society: women rebelling against patriarchy and students rebelling against their future lot as capitalist workers. Internationally, Vietnam and Cuba represent a vision of an alternative way of organizing society. These points of resistance “appear as a broad revolt by different sectors of labour against their allotted place in the social factory” (Witheford 1999, 75) and act to upset “the whole intricate equilibrium” of this same factory (Witheford 1999, 76). Once again state and capital are called on to decompose the working class (both in the social and economic factories). The welfare state is retrenched while capital globalizes and automates its production processes. The subsumption of society within capital is strengthened: “as capital reduces its industrial work force, it seeks out new sources of labour in the so-called service or tertiary sector” (Witheford 1999, 80). Capital now moves to engulf the majority of institutions that hold society together from education to health to policing.

In these processes, the Autonomist Marxists argue, lie the seeds of a new working class ready to continue the struggle. However, it is in this process of subsumption that we can also locate the urge to subject academic work to the kind of scrutiny made possible by the JIF. As capital draws the university closer to itself it also attempts to impose its own forms of control. Harry Braverman in his pioneering work on labour under monopoly capitalism has shown us that the key to understanding the need for control on the part of capital stems first of all from its own dependence on labour to realize its need for accumulation. But equally important is the intractable and independent character of labour itself. Labour’s potential for productivity is also unlimited, but it cannot be commanded or accounted for in the same way as a tonne of coal or a kilowatt of electricity. It has a will of its own. Hence, for the capitalist comes the necessity, if he or she is to receive the most value from bought labour power, to ensure “that control over the labour process pass from the hands of the worker into his own” (Braverman 1975). This imperative presents itself, to the capitalist, as “the problem of management” which is solved, at least temporarily, by a number of strategies, chief among them, the casualization and rationalization of the labour process. The aim is to force what is technically a free and voluntary association between labour and capital to bend to the wishes of the later. Today, these strategies are complemented by others, notably the imposition of systems of performativity.

As noted earlier, Yves Gendron has examined the issue of performativity in relation to its impact on academic work. Influenced by Lyotard he defines performativity “as a set of ideas and practices which stress the search for technological optimality via the most efficient input/output ratio” (Gendron 2008, 99). He goes on to argue that “advocates of performativity often stress that the performance of organizations, groups, and individuals has to be operationalized and translated into detailed, calculable targets and measures” with the result being the mushrooming of league tables and rankings lists in more and more areas of human activity, including universities. Performativity enables a form of control that is at the same time both centralized and decentralized. Centralized in that the

norms established by the “targets and measures” can be largely imposed or dictated by those at the top of the management hierarchy and decentralized in the sense that those receiving such instructions are otherwise left alone to carry on their work as they see fit while all the while internalizing those same norms as their own. Gendron, again following Lyotard, argues that this internalization “works” because performativity regimes engender “a certain level of terror, in that organizations and individuals are increasingly required to perform otherwise they are doomed to collapse and disappear” (Gendron 2008, 99).

As Gendron notes, the JIF is a key performativity measure. He argues that its continued use as an evaluative tool will likely lead to a decline in academic innovation, especially in the social sciences as quantity takes precedence over quality and few editors or authors are willing to take the risks associated with producing radically new analyses of social phenomenon for fear of jeopardizing their performativity ratings. In the following sections I will expand his point by examining the implications of his thought for social science knowledge production in light of the notion of academic dependency.

5. Locking in academic dependency

The idea of academic dependency is an offshoot of the broader concept of economic dependency developed by scholars and intellectuals such as Andre Gunder Frank, Fernando Henrique Cardoso, Enzo Faletto, and Samir Amin in the 1960s and 1970s (Frank 1969, Cardoso and Faletto 1979, Amin 1976). The common thread of their work is a perspective that sees the internal political, social and economic structure of certain nations determined in large part by forces external to that country; usually of stronger nations (Larrain 1989, 112). Dependency theory was initially conceptualized in order to explain the stagnant or distorted economies of Latin America. Later it became a key element of neo-Marxist analysis of the so-called Third World, but as well as spreading geographically to Africa and Asia, dependency theory was also increasingly used to understand non-economic areas of social existence, including the world of scientific work.

Academic dependency, as this subset of dependency theory has been called, considers the world to be roughly divided into core and peripheral zones of knowledge production. In the case of social science, it is argued that most theorizing takes place in a few centres located predominantly in North America and Western Europe. Theories regarding social phenomenon developed in these centres and mainly on the basis of studies of North American and European societies are then exported to the rest of the world, the social science periphery, where they tend to be applied indiscriminately to local situations without regard to context or even topical relevance. The mechanisms through which relations of dependency between countries develop are many. Historical legacies of colonialism are one cause. Colonial powers produced centres of knowledge in their own countries in the course of ruling others which have gone on to accrete knowledge and prestige ever since (Garneau 1991). Furthermore, post-colonial upheavals and economic immiseration often preclude the development of the kind of robust infrastructures needed to produce social science knowledge, contributing to the “brain drain” that helps maintain the knowledge divide between core and periphery (Altbach 1976). Finally, differing discursive conventions concerning the nature of acceptable texts and correct social rituals surrounding academic interaction also help create barriers between social science core and periphery (Canagarajah 2002).

Measures of academic “excellence” such as JIFs potentially add to these reasons. Scholars from peripheral areas are not immune to the pressures immanating from the core zones of social science knowledge production and it is to be expected that the performativity pressures that are a part of the deepening relationship between capitalism and university is likely to affect peripheral institutions of higher education as well (Paasi 2005). However, the implications for the periphery are deeper. In striving to meet the criteria for inclusion in the “top ten” lists of journals, scholars in these areas must bend to the methodological, topical, and discursive conventions as they find them and which must appear far more alien to them than to western scholars (Canagarajah 2002). Of course, it may be pointed out that the pressure to publish in successful Western journals has always existed and would continue to exist even without the introduction of measures such as the JIF. This is essentially correct but overlooks one important point and that is the JIF tends to lock the position of successful journals in place through the creation of vicious cycle of virtue. Far from a free market of ideas what is created is an oligopoly of successful journals.

This likelihood of this development has serious ramifications. The social sciences are not predictive sciences, rather they are (or should be to best realize their potential) interpretative. Their strength lies in encouraging multi-vocality and making it visible (Randall 1994). A great deal of diverse thinking on social phenomenon could be cultivated in Asia, Africa, and Latin America as many of these societies are very different from the West and face situations that are often much different as well. Listening to these voices is difficult to begin with given the reasons elaborated earlier. An added layer of difficulty is imposed by the creation of a small list of respected “international” journals focusing on a narrow set of geographically, topically, and methodologically bound concerns.

6. Conclusion

In this paper I have outlined two broad reasons for why measures such as the JIF have achieved the success they have to date. On the one hand, the age old allure of having a simple number represent a complex reality continues unabated in today’s society. On the other hand, the changing nature of the conflict between labour and capital with the increasing subsumption of society into the realm of capital has also fueled the need for such measures. As capital swallows the institution of the university, the need to impose its traditional strategies of labour control becomes urgent – regimes of rationalization, casualization, and performativity are the result. The JIF is an integral part of these mechanisms of control.

7. References

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