THE ECONOMICS OF ECONOMICS: A MODEL OF RESEARCH DISCOURSE

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Economists have developed a formidable body of theoretical and empirical knowledge of market processes, and more recently have extended their range of interest to include political processes and other social phenomena amenable to investigation using the paradigm of rational maximisation. One such area comprises the economic analysis of economic discourse, or the economics of economics, which seeks to investigate"... the conversation economists have among themselves, for the purpose of persuading each other..." (McCloskey, 1986, p. xvii). It is somewhat surprising that the economic analysis of the research activity of economists had not attracted scholarly interest earlier, a fact which has not gone unnoticed by commentators. Collander (1990, p.4), for instance, has noted that:

"Economists have often turned the laser edge of their analysis on the legal profession, the medical profession and the world in general but, to my knowledge, no economist has turned economic analysis upon itself and considered the economics of the economics profession. Somehow economists have been all too willing to accept that other people are greedy, self interested maximizers, but none of them have had the audacity to look at themselves as the same breed - no better, no worse than the rest of the world" .

The present paper seeks to build on an existing embryonic literature dealing with the communicative or rhetorical aspects of economic discourse (Klamer, 1983; Klamer, McCloskey and Solow, 1988; McCloskey, 1983; 1986) by formulating a microeconomic model of the salient behavioural and institutional characteristics of economic "conversation"[1]. The paper itself is sub-divided into four main parts. Section I provides some background to the formal model, which is set out in section II. Section III uses the model to explain the existence of bias in economic discourse. The paper ends with some brief concluding comments in section IV.

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[1] This article follows McCloskey (1986) and Klamer (1983) in using the term "rhetoric" to refer to those skills (mathematical, statistical and literary) which are required for an economist's arguments to be "taken seriously" by an audience of colleagues. Rhetoric is the "art of persuasion" and does not have to be "unscientific".

I THE NATURE OF ECONOMIC DISCOURSE

Economic discourse is generally conducted within professional networks often global in scope and diverse in terms of their field of application. Moreover, a characteristic feature of economic discourse is its dominance by a mainstream network which has usually led to a greater degree of uniformity than that evident in other social sciences. Nevertheless, the mainstream network does embrace a number of rival research programs. For example, in macroeconomics, Monetarist, Neo - Keynesian, New Classical and New Keynesian economists are actively engaged in an ongoing debate with one another within the mainstream network.[2] However, this debate does tend to be selective. Klamer (1983) has observed that while exponents of these rival research programs are "willing to argue about each other's models" they nonetheless fail to "take seriously" the arguments of alternative schools whose concepts are "difficult to incorporate" into "conventional" models. Modern macroeconomics is illustrative of this process, since it comprises a mainstream network of "insider" rival research programs in continuous dialogue, and a number of "outsider" research programs (typified by the Post-Keynesian, Institutionalist, Austrian, and Marxist Schools) which encounter barriers to debate with the mainstream network.

The mainstream network itself appears to be bound together less by a common set of research questions than by a common set of research techniques. These techniques are both analytical and quantitative, and generally include constrained optimisation, comparative statics, dynamics and econometrics. Emphasis on formal modelling techniques is often justified by an appeal to the methodology of logical positivism (Friedman, 1953). Together with its Popperian and Lakatosian refinements, logical positivism holds *inter alia* that science is advanced by the empirical testing of well specified propositions, and consequently economic discourse can be made to appear more scientific if it demonstrates a mastery of techniques required to specify and test propositions precisely.

Colander (1990) has argued that logical positivism provides "external criteria" for the evaluation of economic discourse. However, he has postulated that the process by

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[2] One of the first uses of the label "New Keynesian" occurs in an article by Ball, Mankiw and Romer (1988). The word "New" rather than "Neo" to describe the recent work in the classical tradition distinguishes it from the early postwar synthesis of old-Keynesian macroeconomics and classical microeconomics. In turn, the term "New" rather than "Neo" is used for the recent work in the Keynesian tradition, so that it can be properly juxtaposed with the New Classical approach.

which a research program such as New Classical macroeconomics becomes incorporated into the mainstream network cannot be fully explained in terms of its compliance with these criteria. He suggests that additional "internal criteria" derived from "researchers needs and incentives" which are shaped by the nature of labour market competition within academic economics" can also determine which theory researchers use" (Colander, 1990, p.93).

The basic driving force underlying academic economics resides in the publication of articles in peer reviewed economics journals. This incentive system has been eloquently captured by Colander (1990, p.84):

> "The incentives in the economic profession are for articles, not
> ideas. To remain an academic economist one must get tenure.
> Getting tenure means getting published. Economists who follow
> the academic route must publish their ideas in the form of articles
> preferably in the best journals. Books, for some reason, count
> for little in the academic economics profession; books that are
> readable by the lay public count for less than nothing and can be
> the case of an otherwise qualified person's not getting tenure".

The relative importance of external and internal criteria in the determination of rhetorical standards in economic discourse, and consequently on the process of the publication of articles in journals, depend in part on at least two institutional factors. The first of these is the nature of professionalisation which occurs in graduate economics programs. Professional practice in graduate study provides an opportunity for students to acquire human capital which is expected to generate a lifetime return in terms of future journal articles. Colander (1990) identifies three important types of knowledge which are acquired through graduate education; a broad understanding of economic literature, a general knowledge of the economy combined with a detailed perspective on some specific area of economic activity, and a knowledge of the analytical and quantitative techniques associated with formal modelling and econometric testing. Colander (1990) argues that graduate programs are under competitive pressure to maximise the future returns of their students in terms of published articles by focussing on this third type of knowledge, and cites a detailed survey of students in six top-ranking graduate economics programs in the United States in support of this contention (Colander and Klamer, 1989).

The second important institutional factor involves the screening process according to which articles are accepted for publication by the journals of an economic network. The present paper seeks to complement the work of Colander (1990) by focussing on how

the screening process applied by academic networks reinforces the effects of the professionalisation process on the nature and development of economic discourse. Recognition of leadership in an academic network will be conferred *inter alia* through appointment to the editorial boards of professional journals and chairmanship of conference sessions. Leadership will therefore be associated with the power to screen formal contributions to economic discourse within the network. An understanding of this process may be gained by modelling the factors determining the decision to accept or reject an article for publication.

II THE FORMAL MODEL

The screening process can be modelled as the outcome of a single simple encounter between a "gatekeeper" a, who must accept or reject a particular article for publication in a given network journal, and a representative economic researcher b, who has submitted the article to that journal for publication. Two simplifying assumptions are necessary. Firstly, conventional practice in most journals usually means the appointment of an editor or associate editor responsible for a particular subject area of economics who accepts or rejects articles on the basis of opinions expressed in two or more independent referee reports. The editor and referees consequently act as joint gatekeepers by virtue of being recognised as leaders in an academic network. The present model simplifies this process to a single decision by a single gatekeeper to avoid the problems engendered by committee decision making (Black, 1948). Secondly, the journal under consideration is assumed to be entirely representative of a particular academic network.

The question now arises as to the objective functions of both the gatekeeper and the researcher involved in this encounter. Since the gatekeeper is assumed to be a leader of the network represented by the journal his own reputation will depend at least in part on the reputation of the journal and its associated network.[3] The utility in period t of the gatekeeper $Ua(t)$ is thus contingent upon the reputation of the journal $R(t)$. The objective function of a will therefore be the maximisation of the expression:

(1) $$Ua(t) = f_1[R(t)] f_1 > 0$$

If the reputation of the journal is assumed to be a stock variable, then the gatekeeper cannot change the prior value of R as determined at the end of the previous time period $R(t-1)$, and accordingly he will attempt to maximise the incremental reputation of the

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[3] For the sake of convenience, masculine pronouns are used subsequently and are to be understood as referring to persons within the category irrespective of gender.

journal in the current period. This will depend on the current level of research investment undertaken by researchers:

(2) $\qquad$ $R(t) - R(t-1) = f2 \, [Ca(t).Ps(t)] \quad f_2{}^1 > 0$

Equation (2) indicates that the research investment specific to a given journal is the product of the standard research cost per article Ca(t), which will be signalled by the journal to prospective researchers, and the number of articles submitted to the journal in the current time period Ps(t). Ca(t) represents the instrumental variable employed by gatekeepers to screen articles submitted for publication, and consequently signals the "rhetorical standards" of a given journal to prospective contributors. If a representative researcher wishes to publish an article, then he must demonstrate some minimum level of knowledge of the relevant economic literature, economic institutions, and analytical and quantitative techniques. The acquisition of this minimum knowledge will involve an opportunity cost in terms of time and effort reflected in Ca(t), and thus represents the "supply price" of publication. A more complete specification of the objective function of the gatekeeper can now be obtained by substituting (2) into (1):

(3) $\qquad$ $Ua(t) = f3\{[Ca(t).Ps(t)], R(t-1)\}$

$\qquad$ with $\quad \delta \, Ua(t)/\delta Ca(t) > 0$

$\qquad\qquad\quad \delta \, Ua(t)/\delta Ps(t) > 0$

It is evident from equation (3) that the utility derived by a gatekeeper depends on the standard research investment required of contributors to a journal in a particular period. The specification of the gatekeepers objective function provided by (3) can be defended on at least three grounds. Firstly, the rhetorical standards of a journal presumably involve some appeal to authority by means of the citation of leading figures in the academic network it represents. And since a gatekeeper is likely to be amongst these leading network figures, he will increase his probability of being cited the greater the level of research investment.[Ca(t).Ps(t)] undertaken by contributors. Secondly, the rhetorical standards of a journal apparently require contributors to extend existing theoretical and empirical work performed by leaders of the network, or advance new ideas capable of incorporation into extant network models. The opportunities for further publication by the gatekeeper as a network leader are therefore likely to be directly related to the standard research investment. Finally, consumers of economic expertise may offer consultation work to different networks in proportion to their academic reputations. Consequently, an increase in the level of research investment associated with some specific network could boost its reputation and so afford its leaders more consultation opportunities. In sum, if a gatekeeper desires personal citations, publication and consultation opportunities, then he may accept articles to the extent that they increase the level of research investment.

The objective function of the researcher is somewhat different from that of the gatekeeper. The representative economic researcher is assumed to derive utility from the gain in personal reputation obtained by publishing an article in a journal. The researcher's subjective assessment of this gain in reputation depends on the probability of an article being accepted in the present time period $\beta(t)$, and the reputation held by the journal at the end of the previous time period $R(t-1)$. Simultaneously, the representative researcher will also consider the incremental research cost of preparing and submitting an article to the journal. This can be conceptualised as the difference between the standard research cost per article $Ca(t)$ (or the rhetorical standard signalled by the journal), and the research cost specific to the journal which the researcher had incurred up to the end of the previous period $Cb(t-1)$. The professionalisation process outlined earlier aims *inter alia* to reduce the gap between $Ca(t)$ and $Cb(t-1)$. There is thus a link between the professionalisation process and the screening process. The representative economic researcher will therefore attempt to maximise the following expression:

$$(4) \qquad Ub(t) = f_4[(Ca(t) - Cb(t-1), (\beta(t).R(t-1)]$$

$$\text{with} \quad \delta Ub(t)/\delta Ca(t) < 0$$

$$\delta Ub(t)/\delta Cb(t-1) > 0$$

$$\delta Ub(t)/\delta \beta(t) > 0$$

$$\delta Ub(t)/\delta R(t-1) > 0.$$

The determinants of $\beta(t)$ are twofold. Firstly, it is argued that the acceptance probability is positively related to the number of article outlets offered by a journal in a given time period $Po(t)$, which is assumed to be fixed in period t. Secondly, the acceptance probability will also depend on the difference between the opportunities for further publication arising from articles already published by the journal $O(t)$, and the number of articles submitted for publication in the previous period $Ps(t-1)$. We suggest that a given journal will gradually adjust to an equilibrium position, where $O(t) = Ps(t)$. However, a positive gap between $O(t)$ and $Ps(t)$ will signal to prospective contributors that there exists a "niche" in the journal waiting to be filled. The acceptance probability can therefore be specified as the following function:

$$(5) \qquad \beta(t) = f_5[Po(t), O(t) - Ps(t-1)]$$

$$\text{with} \quad \delta\beta(t)/\delta Po(t) > 0$$

$$\delta\beta(t)/\delta O(t) > 0$$

$$\delta\beta(t)/\delta Ps(t-1) < 0.$$

It is now possible to specify the "demand function" confronting a gatekeeper.

Figure 1 shows a demand curve representing the negative relationship between the rhetorical standard $Ca(t)$ and the number of articles submitted for publication $Ps(t)$ *ceteris paribus*. By signalling an adjustment to this rhetorical standard the gatekeeper can

influence the number of articles submitted for publication. Figure 1 illustrates that by setting a particular standard in the previous period Ca(t), the journal will attract Ps(t) contributions in the current period, with a current research investment of [Ca(t-1). Ps(t)]. The gatekeeper knows that acceptance of a particular article in the current period indicates to prospective contributors the research investment associated with the journal in the next time period (t+1).

The acceptance of a particular article sends out two signals to prospective contributors. Firstly, it provides information on the rhetorical standard applicable to the next period Ca(t). A change in rhetorical standard will lead to a movement along the demand function D(t), which will change research investment according to the particular point elasticity of demand on the function. Figure 1 illustrates a situation where it is in the interests of the gatekeeper to increase the rhetorical standard of the journal from Ca(t-1) to Ca(t) since this will raise research investment from [Ca(t-1).Ps(t)] to [Ca(t).Ps(t+1)], even if O(t) is unchanged. The gatekeeper will consequently only accept an article which raises the rhetorical standard toward the research investment maximising level Ca(max), associated with demand curve D(t). Secondly, the acceptance of an article provides information to prospective contributors on the opportunities for publication in a given journal in the next period O(t+1). Opportunities for publication are likely to rise if a journal accepts articles which invite responses from other contributors. If O(t+1) rises above O(t), the demand curve will shift to the right, thus increasing the research investment generated by a given rhetorical standard. Accordingly, it is argued that as a necessary condition for an article to be accepted, the article must provide a signal of the rhetorical standards and publication opportunities of the journal which increases the research investment it is expected to generate in the next period:

(6) $$[Ca(t).Ps(t+1)] \geq [Ca(t-1).Ps(t)]$$

However, it is at least conceivable that both prospective contributors and editorial board members may face tradeoffs between rhetorical standards and opportunities in decisions regarding the submission and acceptance of articles. For instance, a contributor may submit an article which falls short of the rhetorical standards of a journal in the expectation that it will signal future opportunities for acceptance by the journal.[4]

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[4] It is interesting to note that some journals provide space for "Speculations" and "Miscellany" within which articles can be published which do not necessarily have to conform to the rhetorical standards of the main body of the journal. The object of this practice would seem to be to provide an outlet for articles which generate substantial opportunities for further research and publication.

III. BIASES IN ECONOMIC DISCOURSE

The model presented above can shed light on the manner in which competitive pressures in academic labour markets to publish articles may lead to various biases in mainstream economic discourse. The bias towards a knowledge of technique which Colander (1990) linked to the professionalisation process in economics may be reinforced by the rhetorical standard supplied by gatekeepers of mainstream economic journals. These rhetorical standards are signalled by the knowledge of economic literature, institutions and technique demonstrated by every paper accepted for publication in a journal. In determining the rhetorical standards for article acceptance, gatekeepers have an incentive to focus primarily upon the mastery of technique exhibited by contributors. At least two explanations exist for this phenomenon. Firstly, the opportunity cost of screening potential journal articles for their mastery of technique is relatively low. This has been recognised by Garner (1979, p.577):

> "The probability of acceptance rises if an article demonstrates
> expertise with major analytical tools or sophisticated research
> methods. From a signalling perspective, this makes sense -
> mastery of a technique can be judged at less cost and with greater
> certainty than the worth of a novel behavioural hypothesis".

Secondly, the opportunity cost of a contributor satisfying the rhetorical standards of a technique orientated journal is lower if the contributor has already acquired these techniques through professionalisation. Consequently, by accepting papers which demonstrate a mastery of technique, a journal may become an especially attractive outlet for contributors. Moreover, the reputation of the journal will grow as it induces a greater level of research investment. In contrast, a journal which requires its contributors to demonstrate a proportionately greater knowledge of institutions or literature may become a less attractive outlet, since the time and effort required for technique - orientated graduates to satisfy its rhetorical standards may be relatively high.

The acceptance of a paper by a journal not only signals its rhetorical standards, but also provides opportunities for prospective contributors to submit further articles in response. This provides additional incentives for journals to publish technical papers since even if such articles represent only a small advance on the existing stock of techniques, they can nevertheless generate significant publication opportunities if they can be applied in a number of areas. Colander (1990, p.59) has suggested that this particular source of bias is a response to professional perceptions that "knowing a technique that can be applied to various areas can lead to five or ten articles; knowing a specific area may lead to one or two articles."

Competitive pressures which induce mainstream economists to focus on formal modelling techniques may also lead to an anti-historic bias against acquiring a knowledge of economic literature. Ault and Eklund (1987, p.658) have argued that an evident anti-historic bias in mainstream economics may have caused the intrusion of "unnecessary originality" into its discourse:

> "While scholars may enrich their research by careful literature search, ... they also have a private incentive to shortchange the search in order to promote the originality of their own ideas."

This source of bias is of course strengthened when the gatekeepers of mainstream journals lower the incremental costs of research for professional economists by reducing the relative importance of a knowledge of economic literature in the determination of rhetorical standards.

The model developed here may also explain a conservative or incremental bias evident in modern research. Once an individual has gained entry into an academic network he is likely to experience a gradual reduction over time in the incremental research costs of publication in this specific network. Consequently, the opportunity cost of "conversion" will rise over time. Klamer (1983, p. 253) has illustrated the impact of this process with the interesting story of Leonard Rapping:

> "Rapping was a committed neo-classical economist during the 60's and a conservative at that. He was a prominent scholar with a wide range of contacts. Then he came to believe, for various reasons, that something was fundamentally wrong with neo-classical economics. He subsequently went through what psychologists would call a Gestalt switch: he not only altered his ideas, but also his style of arguing. The process was personal *and* social. He stepped out of the neo-classical world, with drastic social consequences. His story attests to the time and energy the development of an alternative perspective requires. This may help explain why fundamental changes in position are rare for economists; the personal costs are too great".

This suggests that for an individual researcher the choice of an academic network is a lifelong decision with putty-clay properties.[5] It may be rational for a young economist

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[5] These "putty-clay" properties are implicit in equation (4) where $dU_b(t)/dC_b(t-1)>0$. The incremental cost to researchers of meeting rhetorical standards within a given network should decline over the course of their careers. The opportunity cost of "converting" to another network may therefore increase over time so that an academic's choice of a network may be analogous to Phelp's (1963) model of technical choice. Phelps(1963, p.265) argued as follows:

> "...[O]nly new capital is putty. Before their installation, machines can be designed to utilise any desired amount of labour. But once the putty takes shape, it turns to hard baked clay".

to target an outsider network if it represents a "niche" with a perceived gap between publication opportunities and current research activity. However, this decision should be made with the knowledge that unless this network becomes accepted within the mainstream it is unlikely to generate the scope of publication opportunities available to participants in mainstream debates.

IV CONCLUSION

The emergence of these biases suggests that there is considerable potential for "market failure" in an internationalised, competitive academic environment where reputation is achieved according to the "publish or perish" principle. It would seem that economic research investment can become highly concentrated within a mainstream network. The luminaries of this network can exercise through their appointment to the editorial boards of its most prodigious journals considerable discretionary power to influence the rhetorical standards and global research investment of the economics profession. In the model described there is nothing to ensure that the resulting outcomes are those which would maximise the net social benefit of research investment. Market failure may be particularly pronounced in small countries with under-developed national networks of economic conversation. In these countries economic research investment may be inappropriate, being determined by the international academic market rather than according to its contribution to the individual country's social welfare. In general then, the model presented in this paper indicates that there may be opportunities for economists to investigate an economic problem within their own profession.

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RESEARCH
COST PER
ARTICLE

D(t+1)

D(t)

Ca(t)

Ca(t -1)

PUBLICATIONS
SUBMITTED PER
PERIOD

RESEARCH
INVESTMENT

Ps
(t)

Ps
(t+1)

Ca(t).Ps(t+1
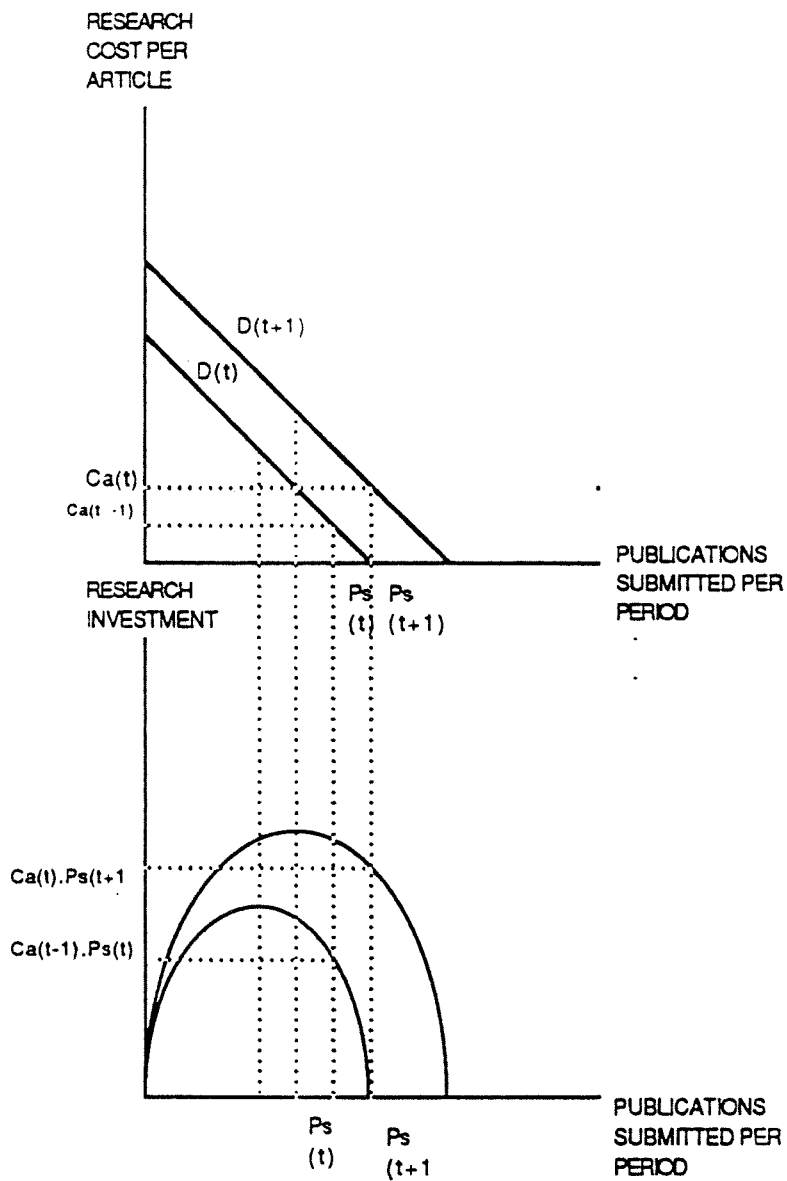
Ca(t-1).Ps(t)

Ps
(t)

Ps
(t+1

PUBLICATIONS
SUBMITTED PER
PERIOD

FIGURE 1
THE EXPECTED EFFECT OF
ACCEPTING AN ARTICLE