

Dipartimento di Politiche Pubbliche e Scelte Collettive – POLIS
Department of Public Policy and Public Choice – POLIS

Working paper n. 76

September 2006

**Appropriating signs and meaning:
The elusive economics of trademark**

Giovanni B. Ramello and Francesco Silva

UNIVERSITA' DEL PIEMONTE ORIENTALE "Amedeo Avogadro" ALESSANDRIA

Periodico mensile on-line "POLIS Working Papers" - Iscrizione n.591 del 12/05/2006 - Tribunale di Alessandria

Appropriating Signs and Meaning: The Elusive Economics of Trademark

Giovanni B. Ramello^a and Francesco Silva^b

^a*Università del Piemonte Orientale 'Amedeo Avogadro'*

^b*Università di Milano - Bicocca*

ABSTRACT: This paper deals with economic analysis of trademark. Its presence in markets is originally connected with the problem of information asymmetries and the need to provide information for assisting exchanges, so as to avert the market failure brought about by adverse selection. However this information-conveying function is also accompanied by a differentiation effect, arising from the power of persuasion that signs can exert on individuals. The exploitation of differentiation has given rise to the practice of branding, which ties markets and consumption to the realms of meaning and experience. Branding is so all-pervasive in today's economy as to have somehow transfigured it, so that the role of persuasion is now pre-eminent.

Nonetheless, the mainstream economic theory tends to resist acknowledging this change, which would to a large extent call into question well-established hypotheses and theoretical tools. The general response has therefore been to assume that the informational role of trademark predominates, and to use this hypothesis to construct models, welfare evaluations and policy prescriptions that bear little or no relation to the actual markets.

The opposing approach - in the shadow of the Nelson's and Arrow's seminal papers on economics of information - is recognising the idiosyncratic character of information, and therefore drawing conclusions and devising solutions that, while still based upon the welfare criterion, also incorporate a wider awareness and a deeper representation of the scenario under study. The present work attempts to move in this direction, showing how different disciplines can provide some key epistemological tools for enabling economists to effectively evaluate the welfare outcomes of the introduction and progressive alteration of a particular intellectual property right within the realm of signs and meanings.

Keyword: trademark, brand, intellectual property, economics of information, signs, economic welfare,

1. Introduction

If the Industrial Revolution in the second half of the 19th century ushered in a new way of thinking about economic activities, essentially connected with mass production, the second half of the 20th century brought a new revolution that is still in progress: the advent of the Information Society, embedded in the realms of knowledge and communication.

The economic transformation effected through the diffusion of digital and communication technologies in the consumer market of the 1990s established the definitive ascendancy of the dematerialised economy¹. The ever increasing relative importance of its sectors in the various national economies has made these markets today central for assuring the prosperity and continued expansion of economic systems.

The result has been the emergence of an economics of information, in which information is treated simultaneously as an object of consumption, productive element, commercial signal and much more. This opens up a potentially bewildering new prospect to scholars, due in particular to the not inconsiderable differences which exist between the economics of ideas and the economics of things. A difficulty which the economic theory has often simply sidestepped by assimilating present and future to the past, for example coining the oxymoron 'intangible goods' in an attempt to reduce the fluid category of information into the concrete terms of goods and quantities.

In this respect, the possibility of translating information into bits, which can be measured and divided in the same way as physical quantities, has further fuelled the illusion that intangibles can somehow be analogous to tangibles (see Shapiro and Varian, 1999). However the fallacy is soon exposed on passing from the container to the contents, at which point information encoding reveals itself to be an incomplete process, because it references a system of meaning that is inextricably bound up with society and interpersonal relations².

Firms have nevertheless been quick to seize the new opportunities for profit in this sphere, initiating an ongoing process of appropriation of information and knowledge. Clearly, this process of 'propertization of just about everything' (Merges, 2006) has in its turn fostered a particular regulatory dynamic aimed at creating the necessary instruments for the extension of appropriability. The TRIPs agreements ratified as part of GATT, whose objective is to regulate not just international trade but also the national legal systems on matters of intellectual property, are in this respect one of the most obvious examples of the deterministic effects that economic interests can have on the statutory system (Ryan, 1998). This once again confirms the existence of a dialectical relationship between the pressures of the real economy and the regulatory process, which has provided the groundwork for information markets to emerge and develop.

The above dialectic is the backdrop for the economic theory whose task it is to evaluate the effect of the regulations on the markets and on welfare, formulating appropriate policy prescriptions. This is no small undertaking because, even though the commodification of information makes it seem more like the goods traditionally exchanged on markets, it still does not remove the peculiarity of its being tied to cognitive and communication processes, for which specific tools and modes of treatment are required.

¹ For example, during the 1990s the relative importance of copyright-protected information goods in the US economy gradually increased, to the point that these became the leading export item in 1996 (ref. the reports of the International Intellectual Property Alliance at <http://www.ippa.com/>). On the historical background see also Carlaw et al.(2006).

² We are referring here to the literature which represents knowledge as the sum of two complementary dimensions: codified and tacit knowledge (see Cowan, R., P. A. David and D. Foray, 2000).

The above objection can be traced to the seminal contribution of Nelson (1959) and Arrow (1962), who pointed out the idiosyncratic nature of information, and how the virtues and effects of the appropriation of information through intellectual property rights (IPRs) require a specific paradigm, distinct from that of the physical economy, and in fact produce fundamentally different results. One leit motif which clearly emerges is that the rent-seeking impulses stimulated by the new rights are only weakly compatible with the maximising of economic welfare, and therefore the consequences of the IPRs on the market must be carefully evaluated.

The present contribution takes the above observation as a starting point to follow the evolution of the simplest (in economic terms) and probably, alongside trade secret, the oldest intellectual property right: trademark³. Its formerly *de facto* - and then subsequently *de jure* - use within exchanges predates the Information Society by thousands of years. Trademark law is justified on the grounds of correcting information asymmetries, and would thus appear solely motivated by reasons of efficiency as the remedy to a market failure.

However today's market also exhibits a second dimension of trademark, connected with the impact on consumers of the meaning conveyed by the commercial sign. This has generated branding strategies that are just as important to the efficiency balance, and have seen maximum expansion under the current technological system. These practices are essentially rent-seeking in nature, even though they may also have incidentally beneficial effects on welfare, and have resulted in a gradual alteration of both the statutory system which regulates the appropriation of information, and the structure of the market itself.

Overall, therefore, the process of trademark's mutation into brand has caused a kind of market for signs and meanings to emerge, characterised by a multiplicity of attributes and economic effects that the economic theory has not yet fully understood. So that it might seem opportune to heed the policy prescription formulated by Nelson (1959) and Arrow (1962), that in the absence of univocal and universally valid effects, the extension of appropriation via IPR beyond a minimum level must be approached with caution. However the exact opposite has taken place in recent years.

The present work is organised as follows: section 2 introduces, frames and discusses the relationship between the law and the economics of IPRs, pointing out the ambiguities which arise. Section 3 traces the evolution of trademark's relationship with the market, from a signal originally introduced to remedy an information asymmetry, subsequently transformed into a tool for creating market power, and finally into a commodity. Section 4 discusses the problems connected with extrapolating the traditional efficiency criterion to a context shaped by an ever changing interplay of communication, regulations and behaviours, such that the economic welfare balance is essentially indeterminate. Finally, section 5 contains the concluding remarks.

2. Information, Law and Economics

The cornerstone of today's information economics is without a doubt the system of intellectual property rights (IPRs), which provides the institutional framework regulating these markets⁴. The catchall label IPR in reality denotes an assemblage of legal doctrines--namely patent, copyright, trademark and trade secret—that differ in their structures and fields

³ In the text, the term trademark is used to denote both the commercial instrument and the law which protects it.

⁴This does not, of course, rule out other crucial and complementary components such as technology, generally a necessary prerequisite for the emergence of information markets. For example the recording industry was made possible by a combination of the property right and the existence of sound recording and playback technology (Silva and Ramello, 2000).

of application, but all share the common trait of granting the owner rights over the economic exploitation of an idea or its 'reification' (i.e. its expression in any tangible medium, as in the case of copyright-author's right). Such rights are generally exclusive, meaning that the owner is given a legal monopoly over the protected information, albeit with various limitations on its duration and scope.

From this perspective, therefore, and despite their various specific attributes and differences⁵, all the IPRs share a common origin rooted in the advent of the information and knowledge economy and the possibility of privately appropriating certain types of information. However because of its fluid character, inextricably bound up with the communication paradigm and the sphere of meaning, information is necessarily of collective origin and so naturally incompatible with the category of property, which was instead devised for scarce resources⁶. A sufficiently convincing ad hoc justification was therefore required for an institution which permits the extensive appropriation of information and its entry into the price system⁷. The argument put forward was the utilitarian one of creating an incentive for producing or disclosing new information, used since the days of the royal licenses and privileges granted by monarchs, and more recently explicitly formalised by Bentham⁸.

It is worth noting that whereas appropriation and property rights are an inevitable consequence of the exploitation of scarce resources, and hence commonly occur in most human societies, to the point of being a sort of 'universal institution' (Demsetz, 1998; Bailey, 1998), intellectual property is instead referred to resources that are not scarce within a particular social context—i.e. western society—and so has required the design of a special legal category. This confirms the idiosyncratic nature of the institution and the need to artificially devise some convincing justification, which is instead inherent for the conventional ownership of physical resources⁹.

Despite their common justificatory argument, each of the IPRs has a distinct mechanism geared to the economic role of the information which it protects. *Copyright* and *patent* are designed to provide an economic incentive to creators/inventors for stimulating the production/disclosure of new information in the artistic and technological fields. *Trade secret* likewise seeks to stimulate the creativity of individuals, but does so by assuring appropriability of economic benefits through a peculiar form of property: the attribution of secrecy rights to those who produce certain types of information, generally pertaining to production processes (e.g. the formula for a particular soft drink, a customer list, etc.). Finally, *trademark* too has the function of promoting the creation of new information, but which in this case is not itself (at least not originally) the object of the exchange, but rather an accessory to the good being exchanged. What in economics language would be termed a 'signal'. In other words, the information created through trademark has the function of facilitating consumer choice and averting opportunistic behaviour on the part of producers.

⁵ Which can at times partially overlap, as in the case of software in the US legal system, to which copyright and patent are simultaneously applied.

⁶ As the anthropologist Clifford Geertz pointed out (1973, p.11), speaking of culture in its broader anthropological sense that also includes information and knowledge, "[it] is public because meaning is". See Ramello (2005b).

⁷ It is important here to avoid all ambiguity. For example secrecy has since the dawn of time enabled the appropriation of knowledge. However an informal reliance on secrecy, without the backup of a robust and well-defined institutional framework, only allows for limited and poorly enforceable appropriability.

⁸ "*which one man has invented, all the world can imitate. Without the assistance of the laws [...]*" (in Ramello 2005a, p. 71).

⁹ Further confirming the idiosyncratic character of the regulations protecting intellectual property is the crucial importance of social recognition on the part of consumers and competitors. Repeated episodes of infringement in various sectors in fact reflect a persistent reluctance to acknowledge the value of the institution, even where it has existed for a long time. For a discussion referred to copyright infringement, file-sharing systems and consumer evaluations, see Maffioletti and Ramello (2004).

According to the above interpretation, IPRs constitute a remedy that is introduced into 'the market' to produce efficiency: this is the neoclassical thesis by definition.

However the IPRs also have another characteristic that is relevant to the economic theory, but has not (with some exceptions) been fully addressed by the literature: namely that, by the very fact of being property rights, IPRs contribute to shape the market structure, regulating the competitive scenario and determining the rational behaviour of economic agents.

In other words, these rights are much more than just a remedy to a market failure: by changing the rules of the game, in agreement with the findings of neo-institutional theory they cause new strategies to emerge which in turn feed back into the institutional framework and so progressively alter the market structure.

The general outcome of the above described scenario is the emergence of fairly concentrated industrial sectors characterised by rather low competition levels and substantial market power, tending in balance toward a monopoly situation¹⁰. The efficiency balance is therefore not at all obvious, with the attainment of welfare being to some extent dogmatically asserted rather than proven.

However such a stance goes against the recommendation of Arrow and Nelson, that also recurs elsewhere in the literature, according to which the economic analysis of information markets should address itself to “a myriad of special cases and few general principles” Stiglitz (1985, p. 21). In such circumstances we must beware of sweeping conclusions, because the outcomes may be very different from those anticipated.

The economic analysis of trademark offers an interesting case study. On the one hand, it illustrates how a particular intellectual property right, originally designed to provide information to facilitate exchanges, has evolved into a property right within the semantic/semiotic sphere that is in some measure comparable to patent and copyright—so that the sign ultimately becomes a product and an object of consumption in its own right. On the other hand, it points out a degree of inertia in the practices of economists, who often appear locked into static efficiency justifications that do not take the above changes into account.

3. The Evolving Relationship between Trademark and Economics

To better understand the previous assertion, we must go back to the starting point: “In the beginning was the sign...”

3.1 The Mainstream Economics of Sign and Trademark

Trademark is fundamentally a sign. According to a widely accepted definition, a 'sign' is anything that stands for something else. Modern semiology, the Greek word meaning the science of signs, represents this architecture as a composite system of relations between a signifier, a signified and a referent¹¹. The 'signifier' is the identifiable sign, the 'signified' is the semantic content of the sign, i.e. its meaning, and the 'referent' is that object to which both

¹⁰ Even in cases where the total number of products available is considerable –as in the market of CDs –the successful items generally have low interchangeability, enabling the owner of the IPR to behave like a local monopolist (Silva and Ramello, 2000; Ramello, 2005a). Persisting situations of this type have led to the concentration of markets in various industry sectors (OECD, 1998), ultimately resulting in monopolies, as in the pay-Tv sector of several European countries (Nicita and Ramello, 2005).

¹¹ Semiology is defined as the science which “explores the nature and function of signs as well as the systems and processes underlying signification, expression, representation and communication” (Beebe, 2004, p. 626). For an extensive description of trademark from a semiotic perspective, again see Beebe (2004).

sign and meaning are referred¹². In simplified terms, we can say that a sign is nothing more than a kind of label—technically it is termed a 'semiotic device'—which conveys a meaning that denotes some particular object. Human interactions are permeated with such labels that are necessary tools for communication and collective human activities.

Words and writing, for example, fall within the broad category of signs. Their existence is necessary to permit communication, and hence interactions between individuals. We can thus assert that the presence of signs is a necessary precondition for the existence of human groupings, and in fact there is no human society from which signs are absent.

Economics, in the sense of the 'efficient use of resources', can be said to lie at the very roots of the origins of signs. A sign in fact serves as an economical distillation of some broader concept. For example the word 'fish', or a stylised drawing of a fish, makes it possible to concisely convey an idea that would otherwise—in the absence of appropriate signs—require a cumbersome description such as 'the animal that lives in the sea, with a streamlined body and fins, etc. and/or the display of an actual specimen. In this respect, communication theory speaks of the 'maximum effectiveness' of information (Shannon and Weaver, 1962).

From this perspective, it is clear that signs have the function of lowering the costs of social expression/communication, and that they can produce informational economies of scale to the extent that they are socially shared. Now, even though the above-described economic origin of signs stands apart from the market, being instead a response to the broader needs of human groups, the attendant advantages can nevertheless also be exploited by the market, which in fact soon appropriates them. With the advent of organised trade, the economics virtues of signs became more widely apparent as informational effect of the sign—now become at least implicitly a trademark—resolved the problem of how to identify the provenance of a good (i.e. its maker) as the distance between the points of production and consumption increased (Blakett, 1998). In the absence of a recognisable geographical origin, trademark provides a virtual identity that reconstructs useful meaning for guiding consumer choice. Producers or guilds are thus able to identify themselves through their trademarked products, and signal their quality of workmanship. Bearing this out, trademark occurs across the board in human cultures and is generally positively correlated with expanding lines of trade, even where an intellectual property system does not subsequently develop. Signed or trademarked products have appeared in many different societies and in nearly all historical periods¹³.

The Industrial Revolution, which strengthened the process of division of labour, further magnified the above effect because economies of scale commonly require decentralisation of production, while mass consumption increases the purchaser's need for effective information. Thus began the era of the trademark, which continued to gain strength during the century that followed with the expansion in consumption and the new potential for exploitation opened up by modern technologies.

The economic theory, on its part, found ready justifications in support of trademark's welfare enhancing role. From a demand-side perspective, trademark is a 'signal', that can take a variety of forms¹⁴, and which offers a solution for safeguarding consumers and producing

¹² In the context of trademark the signifier is represented by the tangible form of the trademark, the signified is the semantic content of the trademark and the referent is the product or the producer to which the mark is attached.

¹³ For example in the Etruscan, Greek, Roman and Chinese civilisations for the production of pottery, but also for silk and even for bricks in Asia Minor and in ancient Egypt (see Wilkins, 1992, Blakett, 1998). Trademarks have been found throughout the Roman Empire for a wide variety of products such as wines (e.g., 'M. Fabi Eupori Cnidum' [Cnidum made by Marcus Fabius Euporus]) or the *garum* sauce, a Roman delicatessen made by mixing entrails and other fish parts (Rokicki, 1987).

¹⁴ Legal practice shows that a trademark can consist of a single semiotic device—a logo, a name, a word, a number, a trade dress, etc.—or of several semiotic devices combined in various ways (see Blackett, 1998; Economides 1998; Landes and Posner 1987 and 2003).

efficiency. The underlying economic problem is the presence of information asymmetries and adverse selection: in the absence of adequate information, consumers are unable to determine the quality of what they are purchasing and therefore make choices which, taken together, are sub-optimal for the market¹⁵.

The creation of a credible signal—such as that provided by trademark—is able to avert the market failure. Akerlof explicitly asserts “[...An] example of an institution which counteracts the effects of quality uncertainty is the brand-name good” (Akerlof, 1970, p.499).

So trademark is clearly not a good in its own right, but rather a signal, and it follows that trademark is not property in the conventional sense—it cannot be exchanged—but rather an economic device accessory to the exchange.

What is more, the ability of trademark to promote informational efficiency can extend beyond its direct information-conveying function. In fact, according to the literature that studies the economic effects of liability systems on efficiency, trademark can function as a sort of complement to the regulations, stepping in where the conventional ‘command and control’ type instruments—i.e. those which define rules and seek to enforce them—fail to fully deter harmful behaviour (Kolstad, Ulen and Johnson, 1990). Looked at in this way, trademark therefore contributes to producing a public good, namely deterrence (Ramello, 2006).

The deterrent effect was first described by Akerlof (1970, pp. 499-500) who noted how “[trademarks] not only indicate quality but also give the consumer a means of retaliation if the quality does not meet expectations”. In other words, in case of wrong-doing, the recognisability of the producer enables the market to impose ex-post penalties on the tortfeasor that greatly exceed the economic value of the damages, thereby providing an incentive for virtuous behaviour, and ultimately producing deterrence. The above has been observed in certain empirical studies aimed at measuring the losses incurred by firms in the event of product recalls, deceptive advertising, fraud and the like¹⁶. In many cases, the implicated trademarks effectively suffered a loss in value, resulting from consumer alienation and/or decline in share price, that far exceeded the actual magnitude of the damages caused. Viewed in this way “[t]he loss of trademark capital has the same effect as a penalty clause in deterring a promisor from breaching [a contract]. Unlike a penalty clause, however, the wealth loss borne by the promisor does not accrue to the promisee; thus it does not provide an incentive to induce breach” (De Alessi and Staaf, 1994, p. 480).

The efficiency argument is further strengthened if we consider the supply-side perspective. According to firm theory à la Williamson and the subsequent refinements brought to it by the ‘firm capabilities’ (Teece, 1988) and ‘new property rights’ (Hart, 1995) approaches, the sign becomes instrumental for defining the boundaries of the firm. In other words, the existence of trademark makes it possible for firms to adopt the hierarchy best suited to achieving production efficiency.

In certain cases trademark has facilitated the emergence of vertically integrated firms, and here again the root cause is the adverse selection problem. Because of the information asymmetry that arises when maker and buyer are geographically distant, producers must remain near to the consumers, so that a fragmented distribution of the latter precludes the emergence of large-scale production organisations. Trademark, as a signal, resolves this problem and so opens the door to economies of scale and scope in production (and sometimes also in information), which make it easier to access capital markets, attract and train specialist personnel and attain optimal levels of R&D expenditure, ultimately resulting in the birth of the modern corporation (Wilkins, 1992; Economides, 1998)

¹⁵ The final outcome of such a situation is a reduction in both the average quality of products and the size of the market; in the extreme case of Akerlof’s ‘Market of Lemons’ (1970) all of trade is eliminated, to the detriment of economic welfare.

¹⁶ See for references De Alessi and Staaf (1994).

In other situations, trademark—as also the other intellectual property rights¹⁷—can instead lead to the emergence of smaller, specialised production units organised as standalone firms. In this case, the residual rights attributed to the owner by trademark law essentially have the function of lowering transaction costs, discouraging opportunistic behaviour and so eliminating the hold-up problem (Hart, 1995). One such example is franchising, which through use of trademark allows an upstream firm (the franchisor) to specialise in the production of certain goods and services, also including reputation-building, while the downstream firm (the franchisee) is able to specialise in distribution and cut some of the risks connected with operating on the market, obviously subject to certain contractual terms designed to maintain the value of the reputation acquired by the franchisor (Ramello, 2006). Here too, albeit in a more complex manner, trademark works by creating information, which in this case is the reputation of the franchisor.

Finally, it should be noted that the information-conveying role of trademark is explicitly acknowledged by the different national laws, and variously reasserted therein: for example, in order to obtain protection a trademark must be 'inherently distinctive', that is to say able to directly perform its function of conveying information. If this is not univocally accomplished, so that the signal may be ineffective—as in the case of a trade name that corresponds to a commonly used surname—the trademark must be shown to have a 'secondary meaning' i.e. an acquired ability to distinguish (also termed 'acquired distinctiveness') that unequivocally denotes a particular economic activity. A similar line of reasoning is applied in the opposite case of trademarks which become 'generic', entering into the common language to designate a general category of products—as in the case of *frigidaire*, *elevator*, *aspirin*, etc. When this occurs, trademark laws provide for cancellation of the exclusive right over the sign because its specific information-conveying function has lapsed (Economides, 1998; Landes and Posner, 1987 and 2003).

3.2 Distinctiveness, Differentiation and Commodification of Signs: the Changing Economic Life of Trademark

The signal created by trademark facilitates the emergence of a complementary economic phenomenon, differentiation, which must also be included in the welfare evaluation. In point of fact the relative importance of differentiation, as we shall see below, has grown over time to become pre-eminent in the modern use of trademark. And the national trademark laws have accordingly evolved, under the pressure of these new economic interests, to assist in the exploitation of differentiation.

The above concept can be further clarified by going back to the original semiotics, and noting that the distinguishing effect of trademark can be broken down into two components operating on two distinct, though interconnected, planes. One of these is 'source distinctiveness', i.e. the previously described function of referring to a source, which is used to identify the provenance of the good. The second is the 'differential distinctiveness', which instead signals how a particular trademark differs from the others (Beebe, 2005). When this latter component comes into play, it makes a sign more visible than the competing ones.

In legal practice this is generally referred to as the 'strength' of trademark, which is ultimately the trademark's ability to take on a character of uniqueness in the eyes of consumers. In marketing language we speak instead of 'salience' or of 'brand awareness' (Ehrenberg and Barnard, 1997; Aaker, 1991).

¹⁷ Ref. Arora and Merges (2004) for the case of patent.

These two levels of ‘distinctiveness’, often dealt with as one in the practice of trademark law, have very different consequences in economic terms. In fact, whereas the ‘source distinctiveness’ serves to identify the maker of a good, ‘differential distinctiveness’ is used to alter how the consumer perceives a particular trademark compared to others, and thus produces differentiation in the economic sense.

Naturally, the distinction is not perfectly clear cut because markets always include some degree of inevitable differentiation¹⁸. Absolute homogeneity of goods is rarely achieved because, even in a competitive market, a multitude of minor elements can diminish, even if slightly, the perfect interchangeability between producers (for example the likableness of the salesperson or other psychological factors which, in a barely perceptible manner, lessen the effect of price competition).

The above described mechanism marks the metamorphosis of the sign from ‘trademark’, which has a traditional semiotic function aimed at remedying a lack of information in the market, into ‘brand’ in which the balance between signifier and signified has shifted in favour of the latter, so that it starts to become ‘confused’ with the referent. In other words, the semantic value of the trademark-turned-brand becomes the object of the strategies enacted by firms to strengthen consumer bonding and thereby acquire market power.

This brings us to the practice of ‘branding’, in which the sign is used as a tool to create meaning that goes beyond the sphere of information to enhance that of ‘differential distinctiveness’, so that competition is transferred onto non-price elements. This is further facilitated by modern communication methods and certain commercial practices that have been fostered or even directly engendered by the technological scenario.

‘Branding’ has the outright aim of creating market power, i.e. diminishing the interchangeability of products and, as widely noted in the marketing literature, increasing the consumer’s willingness-to-pay for a particular good (Aaker, 1996). In this respect, therefore, the function of the trademark-become-brand is to create a positive externality on the good which it accompanies (the referent, in semiotic language). It must be said, however, that in many cases this differentiation arises from the semantic component of the brand—i.e. the signified—so that the differentiation is created in the semiotic sphere and not through any objective attributes of the good being exchanged. In the extreme case, two goods may be objectively identical yet semiotically differentiated.

The culmination of this process is the possibility of creating so-called ‘strong’ or ‘famous’ trademarks, in which the differential distinctiveness component is maximised (Blakett, 1998, Beebe, 2004).

All in all, the arguments presented thus far point to the existence of a special relationship between distinctive signs and consumers, which goes beyond the purely informational sphere to touch the emotive and psychological realms: individuals look to signs for much more than their purely informational value, and consume their meaning.

As generally happens within markets, firms have been quick to note this peculiarity and develop strategies for capitalising on affection for signs. This is for example the origin of ‘brand loyalty’, in which repeated purchases are secured through endogenously generated purchase inertia, by creating psychological switching costs in buyers, with a final welfare balance that is at the very least problematic (Aaker, 1991; Klemperer, 1995).

This inertia in choice can be further leveraged through practices which transfer the acquired market power from one market to another. We speak in this case of ‘brand extension’ if the

¹⁸ Semiology seems to agree because it observes (see Barthes, 1964, *Elements of Semiology* in Beebe, 2004, p. 662) an inevitable process of ‘semantization’ by which any object becomes “pervaded with meaning. [...] [A]s soon as there is a society, every usage is converted into a sign itself”.

trademark is transferred between similar products, or of 'brand stretching' if the transfer takes place between very different products¹⁹.

Now, although these practices can create informational economies of scale, remedying a multitude of information asymmetries in different markets all at once, through the creation of a single signal (Choi, 1998), they also show how trademark can be used to transfer an increase in willingness-to-pay and hence in utility (which is market power from the firm's perspective) onto other, distant markets (Pepall and Richards, 2002).

This opens up the dimension of 'brand equity', defined as the 'incremental utility' to the consumer or the 'value added' to a product by its trademark (Aaker, 1991 and 1996). The sign becomes itself endowed with a specific value that can be independently transferred from one product to the other.

This is the first step toward its progressive 'individualisation' and separation from physical goods: the semiotic device/information acquires a specific economic value that is independent of its associated product. If anything, its sale alongside other, physical goods is merely a vehicle for selling the sign and its associated meaning, whereas "[i]n many cases, the trademark referent is now little more than a legal fiction" (Beebe, 2004, p. 625).

Some scholars speak of a 'divorce' of trademarks from the goods they are supposed to represent, and which in fact heralds their 'commodification' (Lemley, 1999). Trademarks, as Judge Alex Kozinsky observes (in Beebe, 2004, p. 657) have "begun to leap out of their role as source-identifiers and, in certain instances, have effectively become goods in their own right". To the point of swapping roles so that the physical goods become the vehicles for selling the signs, albeit with some particular attributes. Firstly, consumption of a sign can be renewed and quantitatively strengthened through the repeated purchase of different goods containing it. Secondly, whereas consumption of a physical good generally produces satiation, the capacity for consumption of a sign appears to be limited only by the consumer's pocketbook and attention span.

However this metamorphosis of trademark has one immediate and significant effect, i.e. that an informational tool originally intended as an adjunct to the market for safeguarding consumers has been converted into a property right over a sign (McClure, 1996). The nature of trademark is thus fundamentally altered, so that the incentive it provides is no longer for creating information that will remedy an information asymmetry, but rather for creating an almost purely informational product--a sign—which the creator then appropriates in much the same way as might happen under copyright and patent.

While information economics has yet to find an effective approach for dealing with this newly acquired independence of the sign, the corresponding transformation of the property right has instead been assimilated with surprising promptitude into the laws and their interpretation, in both the US and Europe.

The above development, described in numerous legal contributions, has reached its culmination with the 'anti-dilution' clauses introduced into the various national legal systems²⁰. Some scholars expressively speak of 'doctrinal puzzlement', noting that the enactment of these anti-dilution measures, after being pushed back several times, was ultimately achieved through protracted lobbying efforts (McCarthy, 2004).

¹⁹ An example of brand extension is the production of iPod on the part of Apple. An example of brand stretching is the production of soft drinks by Virgin, an airline operator (and before that, a recording label).

²⁰ In Europe, anti-dilution regulations have been enacted by member states in implementation of Directive 89/104/CE, known as the Trademark Directive articles 4(4)(a) and 5(2), even though the word 'dilution' does not appear in the text of the directive. In the US the Federal Trademark Act of 1946, universally known as the Lanham Act, has been amended to include a specific anti-dilution measure from the Federal Trademark Dilution Act in 1995. See, for example, in the extensive legal literature Beebe (2004 and 2005); McCarthy (2004).

In a few words, a claim of dilution may be raised whenever a trademark, though not causing confusion to consumers, produces ‘detriment to the distinctive character’ of another famous trademark as the European legal system puts it²¹, or results in a ‘lessening of the capacity of a famous mark to identify goods and services’ in the words of the US law²². The central idea is that, even where there is no infringement or confusion, use of a trademark similar to a famous one in a non-competing market may be prohibited because it compromises the distinguishing effect of the famous trademark in the broader sense: ‘by tarnishment’ if the production of lower quality goods alters—albeit indirectly—consumer perceptions of the famous trademark, or ‘by blurring’ in cases where a sort of semiotic free-riding occurs (the consumer is not confused, but the distinguishing effect of the famous trademark is exploited and, according to this regulation, depleted by the other trademark).

Now, it is clear that violations of 'source distinctiveness' fall within the remit of normal trademark infringement procedures, because they cause confusion in consumers who are no longer able to clearly associate a signifier to a referent. However in the case of dilution this confusion does not exist, and the protection is given directly to the signified that produces differential distinctiveness. In other words, protection against dilution establishes a property right that reaches beyond the signifier to enter the sphere of the signified²³. The anti-dilution measures therefore protect the investments sustained in creating the semiotic product—and thus also the revenues and their extension—sanctioning the new nature of trademark/brand as a property right which grants a legal monopoly over a wide signifier-signified relationship.

4. The Puzzling Issue of Economic Welfare

The above discussion reveals the many-sided character of trademark, which continues to mutate and change aspect in response to economic, technological and institutional change. However this is not a simple case of 'split personality' in the style of Stevenson's Dr. Jekyll and Mr. Hyde, but rather a more elaborate and gradual process of continual adaptation of trademark to the evolving context in which it is embedded. Not one, or two or multiple personalities, therefore, but an ongoing succession of incremental changes that must be carefully factored into the economic evaluation. These adaptations of trademark also have a feedback effect upon the institutional and market structure that alters the competitive scenario, so that regulatory measures designed for the old state of affairs no longer have the expected outcomes.

Law is generally better equipped to take on board this evolutionary dialectic, because of its natural orientation toward social interaction and the attendant process of ongoing change. Law in fact takes a pragmatic approach to the drafting and interpretation of its regulations, relying on a system of rigorous logical categories which can, however, be flexibly moulded to fit contingent needs and follow the evolution of the interests that it contributes to govern. Economics (or at least neoclassical economics), in contrast, generally uses static models assuming given institutions, issuing recommendations and evaluating outcomes primarily on the basis of the efficiency criterion, which though logically robust may also prove overly rigid and constrictive for dealing with social phenomena. Organisations and choices are evaluated in terms of welfare, that is to say the efficient use of resources, and from a normative

²¹ Adidas-Salomon AG v. Fitnessworld Trading Ltd., 2003, 1 C. M. L. R. 14

²² Lanham Act, Section 43c, 15 USC Section 112

²³ “In this sense, trademark dilution constitutes not a trespass on the plaintiff’s signified, but rather a kind of nontrespassory nuisance as to the plaintiff’s signifier. The action for trademark dilution is designed to prevent such nuisances and, in doing so, to preserve the differential distinctiveness of the plaintiff’s signifier, regardless of to what referent it is affixed” (Beebe, 2004, p. 676).

perspective, so that all those choices and organisational solutions which lead to increased welfare are considered to be desirable and justifiable²⁴.

The above is the approach that has characterised the law and economics literature of the Chicago school, which assumes that law is or should be oriented toward welfare. Looking explicitly at trademark law, for example, this approach maintains that, “like tort law in general [...] , can best be explained on the hypothesis that the law is trying to promote economic efficiency” and that therefore any suspicion concerning “the power of brand advertising to bamboozle the public and thereby promote monopoly” is to be discounted (Landes and Posner, 1987, p. 265 and pp. 274-275, reasserted in 2003).

This position disregards the critical observations and methodological guidelines proposed by Nelson (1959) and Arrow (1962), in our view quite correctly, for dealing with matters of information and its regulation. While keeping the welfare objective firmly in mind, the two authors also attempt to capture the idiosyncratic nature of information and the effects of the institutions created for governing the information market. In particular, the contribution of Arrow (1962) examines how efficiency may be pursued in the specific case of inventions for productive purposes, and observes that such a context does not permit the existence of a perfectly competitive market. The consequent policy prescription, which sounds nowadays heterodox, is that an optimal allocation of resources for inventive activities requires public or non-profit institution to finance research activities and the creative innovation process (Arrow, 1962).

The message is clear: the task of economic theory is to critically evaluate laws – in this case patent law - and on the basis of the only robust criterion at its disposal, i.e. welfare, to propose efficient solutions. It must not seek to justify those laws at all costs, but rather critically examine their contribution to the attainment of welfare.

The recurring invocation of welfare reflects the fact that this criterion is the cornerstone of neoclassical theory: no policy or regulatory proposal has any economic sense unless it can be justified in terms of producing increased welfare. However the neoclassical theory is also marred by certain sweeping and analytical simplifications. This is especially true for the case of information markets and, hence, of trademark. Here the conventional assumptions concerning the nature of goods, the rational behaviours of consumers, and competition are seriously challenged by the results brought by other disciplines and by evidence. It is therefore questionable to draw welfare implications from weak or unreasonable hypothesis.

So we are left with two alternative and antithetical ways out of the difficulty. The first is the mainstream approach, of which a good example for the case of trademark is the contribution by Landes and Posner (1987, 2003): accepting the *positive economics* assumption that realistic hypotheses are not necessary for building models (Friedman, 1953). The models obtained in this way are not validated against real-world facts, but instead used to draw regulatory conclusions as if the models themselves were the reality. To put it another way, the reality is deconstructed in order to rebuild a different one, substituting this Alice's wonderland for the world in which we live. Such an approach doesn't offer any serious description of facts, nor leads to relevant policy prescriptions because it is unconcerned with the actual working of economic and legal problems. Resultant economic recipes become useless or even counterproductive.

The alternative route is to squarely confront the practical and theoretical difficulties arising from the application of the theory, and attempt to adapt it through a careful examination of the hypotheses, proposing welfare-enhancing solutions. This is essentially the spirit of Nelson and Arrow's proposal. The discussion that follows will take this second approach of seeking to

²⁴ On the limits of this approach see Thaler (2000).

pinpoint which are the critical hypotheses, and identifying opportunities for reviewing the trademark protection regulations.

4.1. The nature of goods and the behaviour of consumers

The post-industrial economies, and particularly the Information Society, are currently witnessing a change in the nature of goods. The demand for ‘things’—tangible goods produced by agriculture and manufacturing or intangible activities performed for clients (i.e. services), purchased to satisfy biological or practical needs—is increasingly giving way to that for ‘experiences’, staged by companies which “engage customers, connecting with them in a personal, memorable way” (Pine and Gilmore, 1999, p.3).

The consumer no longer buys a branded product only in order to consume the good, but also for an emotive experience connected with the symbolic realm embodied in the brand. This new perspective, which has been termed the ‘experience economy’ (Pine and Gilmore, 1999), can be referred back to the concept of ‘vicarious consumption’, initially described over a century ago by Veblen (1899) but never adequately investigated by the economic theory. According to this view and consistent with sociology findings (Baudrillard, 1968), a good is not consumed because of any tangible need associated with that good, but rather for the semantic content which it conveys. In the experience economy, the goods and services consumed do satisfy some physical need-- for example a T-shirt, dinner at a particular restaurant, or a good glass of Brunello wine--yet what is really being consumed is in many cases the experience itself, with the actual good or service serving merely as a vehicle for obtaining it. In other words, the consumer's willingness to pay, as observed by the previously cited marketing contributions, is a function of the experience associated with the good (Aaker, 1996), and the experience becomes all the more compelling with increasing brand strength. Drinking a glass of Brunello is not the same thing as drinking some other less-known wine, even if it has similar or superior qualities. Because what is actually being consumed and paid for here is the signified, i.e. Brunello, and not the referent, i.e. fine wine. To put it another way, the signified also becomes the referent and the product.

This process is what some observers have termed the ‘decline of the referents’, and which in modern society extends well beyond the market (Beebe, 2004). In the new economy of signs, signifier and referent are fused to form a new entity, and the sign becomes an economic object in its own right. Branding is thus a means for producing these experiences/signifieds and selling them to the consumer embedded within goods and services. It should be noted, in this connection, that the trademark-become-brand is not pure information, i.e. obtainable through some straightforward procedure like looking up a telephone number. Rather, it is only decipherable within the context of a language, meaning a system of social belonging--it is a thread in the cultural tapestry. Each sign has a meaning that belongs to a system of meanings, and this implies the possibility of detecting and judging differences between brands, which is the source of the strength of brands (Baudrillard, 1968; Geertz, 1973).

Economists in general, and in particular neoclassical economists, essentially lack the proper analytical tools for investigating these issues, which are deeply rooted in the heart of the post-industrial economy.

It follows that unlike marketing, economics is geared toward dealing with tangible goods and services as the objects of production and exchange. Classical consumption theory assumes that consumers are able to evaluate the quality of any good or service on the basis of their tastes and information, and so determine what choices will maximise their utility function. In other words the consumer is always in a position to evaluate the qualities of goods and services. Moreover, consumer choices are treated simply as the decisions of autonomous maximising agents, each acting in isolation from the rest of society. Actually, consumer

choices are influenced by those made by others and, above all, by firms: through advertising, to which branding is strictly related²⁵. Economists use the term 'influenced' in two distinct ways: by informative advertising versus persuasive advertising. It is unclear if we have two types of advertising used for different products and whether they are used jointly or alone. This distinction has simply a theoretical value, and it is employed to signal that economists are only interested in advertising as an informative means. By contrast, persuasive advertising has been relegated to the realms of psychology and sociology, so that humans are once again reduced--for the convenience of economists--into 'talking animals' that individually maximise given preferences in markets, thereby reinstating the old familiar analytical categories (McCloskey and Klamer, 1995). Neglecting persuasion, of course, has serious consequences for the analysis: as scholars have observed, consumer persuasion and opinions have taken on a central, even pre-eminent role in economic activities and the determination of GDP (McCloskey and Klamer, 1995).

Nonetheless, the economics of advertising has been largely dominated, under the leadership of the Chicago school, by the idea that the informational-signalling role of advertising is the prevailing one. And because the amount of expenditure in advertising says something about the quality level of the advertised good, advertising has an informational value even irrespective of its content (Nelson, 1974).

Some orthodox contributions have sought to abandon the signalling theory outright. In an intriguing article, Becker and Murphy (1993) assert that "We do not believe that the intensive advertising for Mueller beer, Chevrolet cars, or Marlboro cigarettes, to take a few examples, is signalling exceptionally high product quality". They then attempt a sort of mediation with the hypothesis of the persuasive function of advertising, by including advertising among those goods concerning which consumers express preferences. In this way, according to the authors, advertising becomes a part of the consumer's utility function and can be either 'good', in which case its marginal utility is positive, or 'bad', in which case its marginal utility is negative, but in no case does it have positive effects on the marginal utility of the good which it promotes, that is to say it does not alter tastes. However advertising is not free to consumers, and the amount of it on offer is not determined by producers-- as this would in fact contradict the hypothesis that advertising does not alter tastes. It thus becomes one of the goods purchased by consumers, who determine its quantity and pay a price for it.

This approach moves from the more conventional hypothesis—that the quantity and price of advertising are determined on markets from which consumers are absent or only indirectly represented, and the demand originates from other buyers (e.g. magazines, television, etc.) -- to the hypothesis that quantity and price are determined on a market where consumers are directly present.

Nonetheless, the above solution does not seem to provide the economic analysis with any improved grasp of the existing markets where consumers obviously do not buy any specific quantity or piece of advertising concerning a single good: in order to support the consumer theory, advertising becomes a set of information whose single items are demanded by informed consumers. The main merit of this model appears to be that it reduces to economically tractable terms concepts that economics would otherwise be unable to address²⁶. As previously noted, in the case of trademark-become-brand the problem is treated in a similar way: the trademark is simply information useful for recognizing the product. Therefore, once again we are presented with a distorted view of reality. So generally

²⁵ A recent literature (Frank, 2005) maintains that the utility deriving from income or consumption depends critically on how the choices we make compare to those made by others..

²⁶ In effect Becker and Stigler (1993, p.949) clearly assert that the representation adopted by advertising derives from the observation that "[...] the taste-shifting approach has no theory of consumer choice, [...] and cannot explain how consumers choose among different ads that require time, money, or other scarce resources".

speaking, the neoclassical assumptions allow us to reach conclusions consistent with welfare economics, although they are sterile as they concern a never existing world.

Recently Johnson and Myatt (2006) portrayed a more elaborate representation of advertising that makes a clear-cut distinction between real information and hype advertising and gives the reader helpful insights in understanding the role of the trademark in demand economics. While the former is somewhat related to the Becker and Murphy model, thus affecting demand rotation and the horizontal position of the product, the latter, in the vein of branding, is devoted to shifting demand and increases the perceived vertical position of the product. This model refers to Lancaster's (1971) seminal contribution proposing useful suggestions for trying to overcome the limits of the neoclassical approach.

According to Lancaster, each good has a set of associated characteristics which determine its nature and objective and/or perceived quality. What the consumer selects and purchases are actually these characteristics, with the good serving only to contain them. Using this approach it is possible to better understand the concepts of vertical and horizontal differentiation and to interpret the distinction between informative and persuasive advertising, also in accordance with Johnson and Myatt's analysis (2006).

Advertising can play a double role. On the one hand, it can signal specific features of a product, and the consumer will then be able to distinguish among different products in terms of their objective, qualitative characteristics. This is the case for informative advertising, which mainly concerns products for which consumers want information on objective quality. On the other hand, it can be used to alter consumer perception, thus favouring specific characteristics or creating new characteristics linked to the semiotic and semantic dimension, which can 'dominate' the other qualitative characteristics. This is exactly the aim of branding. Ferrari's brand strategy is just marginally directed at signalling the technical features of the car, and largely devoted to making this car a vector of a status, of an idiosyncratic and unique experience, thus transforming it into a symbol. At the end of the day, the semiotic value can dominate the objective value to the point that the former becomes more important for consumer choice, and this has serious implications in terms of welfare.

For example in the presence of both objective differentiation between products and semiotic differentiation, the consumer may be led astray in his choices if he allows the semiotic component to prevail when the objective component would point to a different choice²⁷. This would have to be considered a negative eventuality from the standpoint of material needs, because it imposes investments in the semiotic component that do not change the objective nature of the good, but still use up resources that could otherwise be allocated elsewhere. But it would have to be positive if one takes the view that the semiotic component, no matter how ephemeral, somehow increases the utility to the consumer (Aaker, 1991 and 1996).

The same line of reasoning can then also be used to justify counterfeiting, provided that it does not displace the production of originals or deceive the consumer. This is precisely the case of what is termed non-deceptive foreign counterfeiting, in which consumers are able to distinguish the fakes from the originals, as discussed by Grossman and Shapiro (1988). The proposed interpretation is intriguing and consistent with the semiotic perspective: given that the sign is to a certain extent separate from the good, the consumption of referents, even if counterfeited, can produce utility equal to that of the originals, provided it does not compromise the signified. Therefore if the net balance between this effect and the externalities imposed upon the trademark owner (Grossman and Shapiro, 1988) and the original signifier is positive, the counterfeiting will be welfare-enhancing. The consequence is that it should be tolerated, which in policy terms ought to result in a weakening, rather than a strengthening, of ownership over signs.

²⁷ For example, given 2 differentiated goods A and B, it may be that in the absence of semiotic differentiation A is preferred to B, whereas with differentiation the roles are reversed and B becomes preferred over A.

This short list of ambiguities illustrates, on the one hand the need of more advanced models in the economics of demand, and on the other hand how the final welfare evaluation depends greatly on what theoretical approach adopted. In any case, relying on assumptions that are unsupported by fact, in order to continue using models developed for obsolete contexts of production and exchange, does not appear to be the most promising route. Rather, what is needed is an effort to understand what the buying and selling of signs truly implies, and the effect which signs have on the markets.

4.2 Competition

The above discussion raises further questions concerning the market structure, relating in particular to the mode of competition that characterises the economy of signs and experiences, and hence the role of trademark in that scenario.

One interesting example of a market where the signified plays a central role is that of entertainment goods and sports events regulated by copyright or similar exclusive rights (Frank and Cook, 1995; Silva and Ramello, 2000; Nicita and Ramello, 2005). Consumer choices in this arena are very much dictated by impulses of an emotive nature, and factors such as a desire for belonging or identification.

Markets such as these are governed by a "star system" in which the star is a great deal more than just a signal of the product's quality: it *is* the actual product. So the previously described triangular relation between signifier (the star), signified (the semantic content associated with the star) and referent (the particular item, e.g. a CD, or a specific event) no longer applies. Here, the star is signifier, signified and referent all in one-- it is the content of the consumption. The consumers on their part act on impulse, subject only to the economic criterion of the balance constraints on that type of consumption; they do not choose between different stars by optimising on the basis of relative price²⁸. Because of the characteristics of the goods sold and the criteria for their selection, winner-take-all competition tends to prevail in these markets (Frank and Cook, 1995). Each product is associated with a star, and so a dimension of the market is dependent on the success of the star, and hence on the selection of stars on the market and the investments made by the 'firms' which utilise that resource. Revenues consequently increase in proportion to the appeal of the stars, who appropriate a share of these revenues as a function of their contractual power. Such an economy is dominated by non-price competition and very strong differentiation of goods.

Although the wide variety of offerings is a welfare-enhancing factor for the consumer²⁹, it is also true that in these markets the rents are not contestable, at least not for a certain time period that varies from case to case, to the detriment of the consumer's welfare. Such a monopoly price discriminates against that portion of the market whose willingness to pay is lower, so it is not surprising that alternative 'competitive' offerings of an illegal nature often emerge, given that the market exists and is protected through the effect of copyright (Silva and Ramello, 2000).

The above described market mechanism has been observed in many spheres, including those of trademark. Brand thus becomes an analogue of the star, in the sense that it is purchased for the signified, with which the consumer identifies to some extent (Schmitt and Simonson,

²⁸ Experimental economics has peripherally observed that a consumer's willingness to pay for a CD is dependent on the title, and there is very low interchangeability between titles by different artists (Maffioletti and Ramello, 2004).

²⁹ Variety is in any case a relative concept, indicating the manner in which different offerings are distributed around the fashion trend. It is plausible that fashion trends in these sectors are the result of investrademarks made to create them, so that the various offerings share many common traits and tend to cluster around the fashion trend.

1997). Because the strength of a brand is determined by the quantity and quality of marketing and advertising investments, "arms-races" can result for enabling a particular brand to dominate its competitors. Here again a winner-take-all outcome is likely, only in this case the revenue positions are sustained not by expenditure on the market of stars, but rather through the promotion of winning stories representing the product. The chances of a particular brand becoming dominant increase in proportion to its communicative power relative to other brands—i.e. its differential distinctiveness. And once a successful brand has been created, it can be leveraged to transfer the acquired market power elsewhere, thereby distorting competition. This transfer can take place between different markets through brand extension and stretching (Pepall and Richards, 2002), as well as to new economies in which local brands are very weak (Baroncelli et al., 2005).

There is therefore a significant discrepancy, in the information theory of trademark, between the observed reality and its stylised mainstream representation. The perfect competition at all costs expounded in the elegant model of Landes and Posner (1987; 2003) is not actually observed in most real-world situations, and so has only the merit of intellectual appeal. Or in the words of Scherer (1977, pp. 998-999), whose observation has gone largely unheeded, "First, no amount of semantic waffling [...] can paper over the fact that possession of a well-received brand image is a form of monopoly power. [...] Second, it seems to me that, at least in the consumer goods industries, image advantages confer a qualitatively important form of monopoly power – perhaps the most important [...]". A continual validation against the facts remains the only acceptable frame of reference.

The model that appears to most successfully stylise this type of image-led market, in terms of the verisimilitude of its representation and predictions confirmed by empirical observations in numerous case studies (Sutton, 1991), is vertical differentiation through endogenous sunk costs consisting of marketing expenditure. The prediction is that "[...] the larger the size of the market [...] the greater might be the sunk costs thereby incurred at equilibrium [...] and] [u]nder very general conditions a lower bound exists to the equilibrium level of concentration in the industry, no matter how large the market becomes [...] increases in the market size cannot lead to a fragmented market structure as the size of the market increases" (Sutton, 1991, p. 11). It is worth remembering that the cause of concentration is the ability of advertising to differentiate products. This leads jointly to both the huge advertising investments and a concentrated industrial structure.

The resultant welfare balance is far from univocal. It cannot be robustly determined whether advertising investments are excessive, or whether the variety produced is optimal, although the tendency for certain brands to prevail seems to indicate a clustering of the variety about the fashion trends. Finally, with respect to price, a market characterised by vertical differentiation--achieved through heavy advertising investments aimed at creating brand value by leveraging willingness to pay—produces revenue positions clearly not favourable to the consumer³⁰. So generally speaking the market structure that emerges has little in common with the competition that produces welfare.

Trademark thus plays a twofold role within the markets under discussion. In the first place, it produces the signifier required for the branding strategies. In the second place, by effect of its exclusive attribution to the owner--further extended through the recent anti-dilution clauses—trademark protects the semantic capital of the brand, reinforcing its low interchangeability and market power.

³⁰ There are many examples of such revenue positions. One of these is the case of water. In Italy, the quality of tap water is good, in fact often better than that of bottled mineral water. And yet the consumption of mineral water, whose price is enormously higher than that of tap water, prevails, with the market dominated by a few brands with a strong presence on the advertising markets (ref. Altroconsumo press release 25-5-2006 at <http://www.altroconsumo.it/map/show/12240/src/107612.htradelmark>)

Although it is true that the absence of trademark—or of its legal protection—would enable competitors to 'steal' benefits from those who invest in the quality and identification of a good (for which reason trademark law originated as a part of tort law), it is equally true that its conversion into brand allows a huge potential of persuasive power and the attendant market power to unfold. Some scholars have shown, for example, that the brand associated with a pharmaceutical product can be used to *de facto* extend the monopoly of an expired patent, even when there are generic drugs available that are perfect substitutes in terms of chemical composition. The owners of the strong trademark then accentuate this effect through the introduction of additional generic products, to create a sort of 'background noise' that allows the branded drug to stand out better (Morton, 1999; Kong and Seldon, 2004).

We must therefore be careful to consider both the positive and negative aspects of trademark, remembering that the latter are magnified by the extension of the right. In particular, when the trademark becomes the actual object of consumption, with low interchangeability due to the uniqueness of its semantic content, then the strengthening and extension of appropriability through the property right coincides with a strengthening of monopoly power³¹. This necessarily produces inefficiency.

In this light it can also be argued that the geographical expansion of trademark, as facilitated by the TRIPs agreements, will extend the revenue areas, with welfare-reducing consequences that may be further aggravated by negative effects on local or emerging industries, and on other producers with weaker signs.

In the final analysis, given that the welfare effects are unclear and the overall balance is uncertain, it would be advisable to follow Arrow's (1962) recommendation of favouring policies that preserve the competitive nature of the market and adopt a critical--or even radical--stance toward those institutions whose ability to create welfare is in doubt.

5. Concluding remarks

Trademark is a commercial device that has been used since antiquity, with its presence in markets long predating the establishment of intellectual property as a specific legal category. Its advent is connected with the problem of information asymmetries and the need to provide information for assisting exchanges, so as to avert the market failure brought about by adverse selection. In these terms trademark was therefore established as a tool for reinstating the competitive process and promoting efficiency.

However this information-conveying function is also accompanied by a differentiation effect, arising from the power of persuasion that signs can exert on individuals. The pragmatic exploitation of differentiation has given rise to the practice of branding, which ties markets and consumption to the realms of meaning and experience. Branding is so all-pervasive in today's economy as to have somehow transfigured it, so that the role of persuasion is now pre-eminent.

The prevailing economic theory tends to resist acknowledging this change, which would to a large extent call into question well-established hypotheses and theoretical tools. The general response has therefore been to assume that the informational role of trademark predominates, and to use this hypothesis to construct models, welfare evaluations and policy prescriptions that bear little or no relation to the actual markets.

The opposing approach is that of Nelson and Arrow, who instead recognise the idiosyncratic character of information and therefore recommend drawing conclusions and devising

³¹ In this light, the current legal trends for extending trademark protection through anti-dilution clauses appear particularly questionable.

solutions that, while still based upon the welfare criterion, also incorporate a wider awareness and a deeper representation of the scenario under study. The present work has attempted to move in this direction, showing how law, marketing and semiology can provide some key epistemological tools for enabling economists to effectively evaluate the welfare outcomes of the introduction and progressive alteration of a particular intellectual property right within the realm of signs and meanings.

This approach also affords a critical perspective on some recent developments in the regulation and interpretation of trademark which have extended the legal protection, particularly that given to famous trademarks. A specific example are the anti-dilution clauses introduced into many national regulations, which serve to strengthen the revenue positions acquired by famous trademarks and facilitate their territorial expansion. It is not easy to interpret this development as welfare enhancing.

Acknowledgments

We are grateful to a number of colleagues, to the research group on Information, Intellectual Property and Economic Welfare, the PRIN-MIUR discussion forum, the participants to the 19th Erfurt Workshop in Law and Economics and the Society for Economic Research on Copyright Issues Conference in Singapore, and in particular to Steve Margolis, Juergen Backhaus and an anonymous referee for helpful comments and suggestions. The usual disclaimer applies. This research is part of the PRIN2005 and Fondazione Einaudi/Compagnia di San Paolo research project.

Address for Correspondence

Giovanni B. Ramello, Department of Public Policy and Public Choice, Università del Piemonte Orientale 'Amedeo Avogadro', via Cavour, 84 – I-15100 Alessandria Italy, gramello@unipmn.it

References

- Aaker, D.A. (1996), Measuring Brand Equity Across Products and Markets. *California Management Review*, 38, 102-120.
- Aaker, D.A. (1991). *Managing Brand Equity*. New York: Free Press.
- Akerlof, G.A. (1970). The Market for Lemons: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics* 84, 488-500.
- Arora, A. and Merges, R.P. (2004), 'Specialized Supply Firms, Property Rights and Firm Boundaries,' *Industrial and Corporate Change*, 13, 451-473.
- Arrow K.J. (1962), 'Economic Welfare and the Allocation of Resources for Invention, in Nelson R.R.(ed.), *The Rate and Direction of Inventive Activity*, Princeton University Press, Princeton.
- Bailey, M.J. (1998), 'Property Rights in Aboriginal Societies,' in Newman P. (ed.), *The New Palgrave Dictionary of Economics and the Law*. Macmillan: London.
- Baroncelli, E., Fink, C. and Javorcik, B.S. (2005), 'The Global Distribution of Trademarks: Some Stylised Facts,' *World Economy* 28, 765-781.
- Baudrillard J. (1968), *Le système des objets*, Paris : Gallimard.

- Blackett, T. (1998). *Trademarks*. London: MacMillan.
- Becker G.S. and Murphy K M. (1993), 'A Simple Theory of Advertising as a Good or Bad,' *Quarterly Journal of Economics*, 108, 94-964.
- Beebe, B. (2004). The Semiotics of Trademark Law. *UCLA Law Review*, 51, 621-704.
- Beebe, B. (2005). Search and Persuasion in Trademark Law. *Michigan Law Review*, 103, 2020-2072.
- Carlaw, K., Oxley, L., Walker, P., Thorns, D. and Nuth., M. (2006), 'Beyond the Hype: Intellectual Property and the Knowledge Society/Knowledge Economy', *Journal of Economic Surveys*, 20, 633-690.
- Choi, J.P. (1998). Brand Extension and Informational Leverage. *Review of Economic Studies*, 65, 655-669.
- Cowan, R., P.A. David and D. Foray (2000), 'The Explicit Economics of Knowledge Codification and Tacitness,' *Industrial and Corporate Change*, 9, 211-253.
- De Alessi, L. and Staaf, R.J. (1994). What Does Reputation Really Assure? The Relationship of Trademarks to Expectations and Legal Remedies. *Economic Inquiry*, 32, 477-485.
- Demsetz, H. (1998), 'Property Rights' in Newman P. (ed.), *The New Palgrave Dictionary of Economics and the Law*. Macmillan: London.
- Economides N. (1998), 'Trademarks,' in P. Newman (ed), *The New Palgrave Dictionary of Economics and the Law*. London: Macmillan.
- Ehrenberg, A. and Barnard, N. (1997), 'Differentiation or Salience,' *Journal of Advertising Research*, 37, 7 – 14.
- Frank, R.H. and Cook, P.J. (1995), *The winner-take-all society*, New York: Free Press,.
- Frank R. H. (2005), 'Does Absolute Income Matters ?,' in L.Bruni and P. L. Porta (eds), *Economics and Happiness*. Oxford: Oxford University Press.
- Friedman M. (1953), *Essays in Positive Economics*, Chicago: University of Chicago Press.
- Geertz, Clifford (1973), *The Interpretation of Cultures*, New York: Basic Books.
- Grossman, G. M. and Shapiro, C. (1988), 'Foreign Counterfeiting of Status Goods,' *Quarterly Journal of Economics*, 103, 79-100.
- Hart, O. (1995). *Firms, Contracts, and Financial Structure*. Oxford: Oxford University Press.
- Johnson J.P. and Myatt D.P. (2006), 'On Simple Economics of Advertising, Marketing, and Product Design,' *American Economic Review*, 96, 756-784.
- Klemperer, P. (1995). Competition When Consumers Have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics and International Trade, *Review of Economics Studies*, 62, 515-539.
- Kolstad C.D., Ulen T.S., Johnson G.V. (1990), 'Ex-post Liability for Harm vs. Ex-ante Safety Regulation: Substitutes or Complements,' *American Economic Review*, 80, 888-901.
- Kong Y. and Seldon J.R. (2004), 'Pseudo-Generic Products and Barriers to Entry in Pharmaceutical Markets,' *Review of Industrial Organization*, 25, 71-86.
- Lancaster K. (1971), *Consumer Demand: A New Approach*, Blackwell
- Landes, W.M. and Posner, R.A. (1987). Trademark Law: An Economic Perspective. *Journal of Law and Economics*, 30:, 265-309.
- Landes, W.M. and Posner, R.A. (2003), *The Economic Structure of Intellectual Property Law*, Cambridge MA: Harvard University Press.
- Lemley, M.A. (1999). The Modern Lanham Act and the Death of Common Sense. *Yale Law Journal*, 108, 1687-1715.
- Maffioletti, A., Ramello, G.B. (2004), 'Should We Put Them in Jail? Copyright Infringement, Penalties and Consumer Behaviour: Insights from Experimental Data,' *Review of Economic Research on Copyright Issues*, 1, 81-95.
- McCarthy J.T. (2004), 'Dilution of a Trademark: European and United States Law Compared,' *Trademark Reporter*, 94, 1163-1181.
- McCloskey D. and Klamer A. (1995), 'One Quarter of GDP Is Persuasion,' *American Economic Review*, 85, 191-195
- McClure D.M. (1996), 'Trademarks and Competition: The Recent History,' *Law and Contemporary Problems*, 59, 13-43.
- Merges R.P. (2006), 'The Uninvited Guest: Patents on Wall Street' in Porrini D. and Ramello G.B., *Property Rights Dynamics. A Law and Economics Perspective*, Routledge: London and New York.

- Morton F.M. (1999), 'Barriers to Entry, Brand Advertising and Generic Entry in the US Pharmaceutical Industry,' *International Journal of Industrial Organization*, 18, 1085-1104.
- Nelson R.R. (1959), 'The Simple Economics of Basic Scientific Research,' *Journal of Political Economy*, 67, 297-306.
- Nicita A. and Ramello, G.B. (2005), 'Exclusivity and Antitrust in Media Markets. The Case of Pay-TV in Europe,' *International Journal of Economics of Business*, 12, 371-387
- Nelson P. (1974), 'Advertising as Information,' *Journal of Political Economy*, 82, 729-54.
- OECD (1998), *Competition Policy and Intellectual Property Rights*, OECD, DAF/CLP(98)18.
- Pepall, L. M. and Richards, D. J. (2002). The Simple Economics of Brand Stretching. *Journal of Business*, 75, 535-552.
- Pine B.J. and Gilmore J.H. (1999), *The Experience Economy. Work is Theatre and Every Business a Stage*, Boston: Harvard Business School Press.
- Ramello G.B. (2005a), 'Intellectual property and the markets of ideas,' *Review of Network Economics*, 4, 68-87.
- Ramello G.B. (2005b), 'Private appropriability and Knowledge Sharing: Contradiction or Convergence ? The Opposite Tragedy of Creative Commons' in Takeyama L., W. Gordon and R. Towse (eds), *Developments in the Economics of Copyright*. Cheltenham (UK) – Northampton (MA, US): Edward Elgar.
- Ramello G.B. (2006), 'What's in a Sign ? Trademark Law and Economic Theory,' *Journal of Economic Surveys*, 20, 547-565.
- Rokicki J. (1987), 'Advertising in the Roman Empire,' *Whole Earth Review*, at http://www.findarticles.com/p/articles/mi_m1510/is_1987_Spring/ai_4806053/print
- Ryan M.P.(1998), *Knowledge Diplomacy: Global Competition and the Politics of Intellectual Property*, Washington D.C.: Brookings Institutions Press.
- Scherer F.M. (1977), 'The Posnerian Harvest: Separating Wheat from Chaff,' *Yale Law Journal*, 86, 974-1002.
- Schmitt, B. and Simonson, A. (1997), *Marketing Aesthetics. The Strategic Management of Brands, Identity and Image*, New York: Free Press
- Shannon C.E. and Weaver W. (1962), *The Mathematical Theory of Communication*, Urbana: University of Illinois Press.
- Silva F. and Ramello G. (2000), 'Sound Recording Market: the Ambiguous Case of Copyright and Piracy,' *Industrial and Corporate Change*, 9, 415-442.
- Stigler G.J. (1961), 'The Economics of Information,' *Journal of Political Economy*, 69, 213-225.
- Sutton J.(1991), *Sunk Costs and Market Structure*, Cambridge, MA: MIT Press.
- Thaler R.H. (2000) From Homo Economicus to Homo Sapiens, *Journal of Economic Perspective*, 14, 133-141.
- Teece D.J. (1988), 'Technological Change and the Nature of the Firm,' in G. Dosi, C. Freeman, R. Nelson, G. Silverberg and L. Soete (eds), *Technological Change and Economic Theory*, Pinter: London.
- Shapiro C. and Varian H.R. (1999), *Information Rules: A Strategic Guide to the Network Economy*, Harvard University Press: Boston.
- Veblen, T. (1899). *The Theory of Leisure Class. An Economic Study Of Institutions*. London: McMillan.
- Wilkins, M. (1992) 'The Neglected Intangible Asset: the Influence of the Trade Mark on the Rise of the Modern Corporation,' *Business History*, 34, 66-95.

Working Papers

The full text of the working papers is downloadable at <http://polis.unipmn.it/>

*Economics Series	**Political Theory Series	⁶ ALEx Series
2006 n.76*		Giovanni B. Ramello and Francesco Silva: <i>Appropriating signs and meaning: the elusive economics of trademark</i>
2006 n.75*		Nadia Fiorino and Roberto Ricciuti: <i>Legislature size and government spending in Italian regions: forecasting the effects of a reform</i>
2006 n.74**		Joerg Luther and Corrado Malandrino: <i>Lecture provinciali della costituzione europea</i>
2006 n.73*		Giovanni B. Ramello: <i>What's in a sign? Trademark law and economic theory</i>
2006 n.72*		Nadia Fiorino and Roberto Ricciuti: <i>Determinants of direct democracy across Europe</i>
2006 n.71*		Angela Frascini and Franco Oscultati: <i>La teoria economica dell'associazionismo tra enti locali</i>
2006 n.70*		Mandana Hajj and Ugo Panizza: <i>Religion and gender gap, are Muslims different?</i>
2006 n.69*		Ana Maria Loboguerrero and Ugo Panizza: <i>Inflation and labor market flexibility: the squeaky wheel gets the grease</i>
2006 n.68*		Alejandro Micco, Ugo Panizza and Monica Yañez: <i>Bank ownership and performance: does politics matter?</i>
2006 n.67*		Alejandro Micco and Ugo Panizza: <i>Bank ownership and lending behavior</i>
2006 n.66*		Angela Frascini: <i>Fiscal federalism in big developing countries: China and India</i>
2006 n.65*		Corrado Malandrino: <i>La discussione tra Einaudi e Michels sull'economia pura e sul metodo della storia delle dottrine economiche</i>
2006 n.64 ⁶		Stefania Ottone: <i>Fairness: a survey</i>
2006 n.63*		Andrea Sisto: <i>Propensity Score matching: un'applicazione per la creazione di un database integrato ISTAT-Banca d'Italia</i>
2005 n.62*		P. Pellegrino: <i>La politica sanitaria in Italia: dalla riforma legislativa alla riforma costituzionale</i>

- 2005 n.61* Viola Compagnoni: *Analisi dei criteri per la definizione di standard sanitari nazionali*
- 2005 n.60^e Guido Ortona, Stefania Ottone and Ferruccio Ponzano: *A simulative assessment of the Italian electoral system*
- 2005 n.59^e Guido Ortona and Francesco Scacciati: *Offerta di lavoro in presenza di tassazione: l'approccio sperimentale*
- 2005 n.58* Stefania Ottone and Ferruccio Ponzano, *An extension of the model of Inequity Aversion by Fehr and Schmidt*
- 2005 n.57^e Stefania Ottone, *Transfers and altruistic punishment in Solomon's Game experiments*
- 2005 n. 56^e Carla Marchese and Marcello Montefiori, *Mean voting rule and strategical behavior: an experiment*
- 2005 n.55** Francesco Ingravalle, *La sussidiarietà nei trattati e nelle istituzioni politiche dell'UE.*
- 2005 n. 54* Rosella Levaggi and Marcello Montefiori, *It takes three to tango: soft budget constraint and cream skimming in the hospital care market*
- 2005 n.53* Ferruccio Ponzano, *Competition among different levels of government: the re-election problem.*
- 2005 n.52* Andrea Sisto and Roberto Zanola, *Rationally addicted to cinema and TV? An empirical investigation of Italian consumers*
- 2005 n.51* Luigi Bernardi and Angela Fraschini, *Tax system and tax reforms in India*
- 2005 n.50* Ferruccio Ponzano, *Optimal provision of public goods under imperfect intergovernmental competition.*
- 2005 n.49* Franco Amisano e Alberto Cassone, *Proprieta' intellettuale e mercati: il ruolo della tecnologia e conseguenze microeconomiche*
- 2005 n.48* Tapan Mitra e Fabio Privileggi, *Cantor Type Attractors in Stochastic Growth Models*
- 2005 n.47^e Guido Ortona, *Voting on the Electoral System: an Experiment*
- 2004 n.46^e Stefania Ottone, *Transfers and altruistic Punishments in Third Party Punishment Game Experiments.*
- 2004 n.45* Daniele Bondonio, *Do business incentives increase employment in declining areas? Mean impacts versus impacts by degrees of economic distress.*
- 2004 n.44** Joerg Luther, *La valorizzazione del Museo provinciale della battaglia di Marengo: un parere di diritto pubblico*

- 2004 n.43* Ferruccio Ponzano, *The allocation of the income tax among different levels of government: a theoretical solution*
- 2004 n.42* Albert Breton e Angela Frascini, *Intergovernmental equalization grants: some fundamental principles*
- 2004 n.41* Andrea Sisto, Roberto Zanola, *Rational Addiction to Cinema? A Dynamic Panel Analysis of European Countries*
- 2004 n.40** Francesco Ingravalle, *Stato, große Politik ed Europa nel pensiero politico di F. W. Nietzsche*
- 2003 n.39^ε Marie Edith Bissey, Claudia Canegallo, Guido Ortona and Francesco Scacciati, *Competition vs. cooperation. An experimental inquiry*
- 2003 n.38^ε Marie-Edith Bissey, Mauro Carini, Guido Ortona, *ALEX3: a simulation program to compare electoral systems*
- 2003 n.37* Cinzia Di Novi, *Regolazione dei prezzi o razionamento: l'efficacia dei due sistemi di allocazione nella fornitura di risorse scarse a coloro che ne hanno maggiore necessita'*
- 2003 n. 36* Marilena Locatelli, Roberto Zanola, *The Market for Picasso Prints: An Hybrid Model Approach*
- 2003 n. 35* Marcello Montefiori, *Hotelling competition on quality in the health care market.*
- 2003 n. 34* Michela Gobbi, *A Viable Alternative: the Scandinavian Model of "Social Democracy"*
- 2002 n. 33* Mario Ferrero, *Radicalization as a reaction to failure: an economic model of islamic extremism*
- 2002 n. 32^ε Guido Ortona, *Choosing the electoral system – why not simply the best one?*
- 2002 n. 31** Silvano Belligni, Francesco Ingravalle, Guido Ortona, Pasquale Pasquino, Michel Senellart, *Trasformazioni della politica. Contributi al seminario di Teoria politica*
- 2002 n. 30* Franco Amisano, *La corruzione amministrativa in una burocrazia di tipo concorrenziale: modelli di analisi economica.*
- 2002 n. 29* Marcello Montefiori, *Libertà di scelta e contratti prospettici: l'asimmetria informativa nel mercato delle cure sanitarie ospedaliere*
- 2002 n. 28* Daniele Bondonio, *Evaluating the Employment Impact of Business Incentive Programs in EU Disadvantaged Areas. A case from Northern Italy*
- 2002 n. 27** Corrado Malandrino, *Oltre il compromesso del Lussemburgo verso l'Europa federale. Walter Hallstein e la crisi della "sedia vuota"(1965-66)*
- 2002 n. 26** Guido Franzinetti, *Le Elezioni Galiziane al Reichsrat di Vienna, 1907-1911*

- 2002 n. 25^ε Marie-Edith Bissey and Guido Ortona, *A simulative frame to study the integration of defectors in a cooperative setting*
- 2001 n. 24* Ferruccio Ponzano, *Efficiency wages and endogenous supervision technology*
- 2001 n. 23* Alberto Cassone and Carla Marchese, *Should the death tax die? And should it leave an inheritance?*
- 2001 n. 22* Carla Marchese and Fabio Privileggi, *Who participates in tax amnesties? Self-selection of risk-averse taxpayers*
- 2001 n. 21* Claudia Canegallo, *Una valutazione delle carriere dei giovani lavoratori atipici: la fedeltà aziendale premia?*
- 2001 n. 20* Stefania Ottone, *L'altruismo: atteggiamento irrazionale, strategia vincente o amore per il prossimo?*
- 2001 n. 19* Stefania Ravazzi, *La lettura contemporanea del cosiddetto dibattito fra Hobbes e Hume*
- 2001 n. 18* Alberto Cassone e Carla Marchese, *Einaudi e i servizi pubblici, ovvero come contrastare i monopolisti predoni e la burocrazia corrotta*
- 2001 n. 17* Daniele Bondonio, *Evaluating Decentralized Policies: How to Compare the Performance of Economic Development Programs across Different Regions or States.*
- 2000 n. 16* Guido Ortona, *On the Xenophobia of non-discriminated Ethnic Minorities*
- 2000 n. 15* Marilena Locatelli-Biey and Roberto Zanola, *The Market for Sculptures: An Adjacent Year Regression Index*
- 2000 n. 14* Daniele Bondonio, *Metodi per la valutazione degli aiuti alle imprese con specifico target territoriale*
- 2000 n. 13* Roberto Zanola, *Public goods versus publicly provided private goods in a two-class economy*
- 2000 n. 12** Gabriella Silvestrini, *Il concetto di «governo della legge» nella tradizione repubblicana.*
- 2000 n. 11** Silvano Belligni, *Magistrati e politici nella crisi italiana. Democrazia dei guardiani e neopopulismo*
- 2000 n. 10* Rosella Levaggi and Roberto Zanola, *The Flypaper Effect: Evidence from the Italian National Health System*
- 1999 n. 9* Mario Ferrero, *A model of the political enterprise*
- 1999 n. 8* Claudia Canegallo, *Funzionamento del mercato del lavoro in presenza di informazione asimmetrica*

1999 n. 7** Silvano Belligni, *Corruzione, malcostume amministrativo e strategie etiche. Il ruolo dei codici.*

- 1999 n. 6* Carla Marchese and Fabio Privileggi, *Taxpayers Attitudes Toward Risk and Amnesty Participation: Economic Analysis and Evidence for the Italian Case.*
- 1999 n. 5* Luigi Montrucchio and Fabio Privileggi, *On Fragility of Bubbles in Equilibrium Asset Pricing Models of Lucas-Type*
- 1999 n. 4** Guido Ortona, *A weighted-voting electoral system that performs quite well.*
- 1999 n. 3* Mario Poma, *Benefici economici e ambientali dei diritti di inquinamento: il caso della riduzione dell'acido cromico dai reflui industriali.*
- 1999 n. 2* Guido Ortona, *Una politica di emergenza contro la disoccupazione semplice, efficace equasi efficiente.*
- 1998 n. 1* Fabio Privileggi, Carla Marchese and Alberto Cassone, *Risk Attitudes and the Shift of Liability from the Principal to the Agent*

Department of Public Policy and Public Choice “*Polis*”

The Department develops and encourages research in fields such as:

- theory of individual and collective choice;
- economic approaches to political systems;
- theory of public policy;
- public policy analysis (with reference to environment, health care, work, family, culture, etc.);
- experiments in economics and the social sciences;
- quantitative methods applied to economics and the social sciences;
- game theory;
- studies on social attitudes and preferences;
- political philosophy and political theory;
- history of political thought.

The Department has regular members and off-site collaborators from other private or public organizations.

Instructions to Authors

Please ensure that the final version of your manuscript conforms to the requirements listed below:

The manuscript should be typewritten single-faced and double-spaced with wide margins.

Include an abstract of no more than 100 words.

Classify your article according to the *Journal of Economic Literature* classification system.

Keep footnotes to a minimum and number them consecutively throughout the manuscript with superscript Arabic numerals. Acknowledgements and information on grants received can be given in a first footnote (indicated by an asterisk, not included in the consecutive numbering).

Ensure that references to publications appearing in the text are given as follows:
COASE (1992a; 1992b, ch. 4) has also criticized this bias....
and
“...the market has an even more shadowy role than the firm” (COASE 1988, 7).

List the complete references alphabetically as follows:

Periodicals:

KLEIN, B. (1980), “Transaction Cost Determinants of ‘Unfair’ Contractual Arrangements,” *American Economic Review*, 70(2), 356-362.

KLEIN, B., R. G. CRAWFORD and A. A. ALCHIAN (1978), “Vertical Integration, Appropriable Rents, and the Competitive Contracting Process,” *Journal of Law and Economics*, 21(2), 297-326.

Monographs:

NELSON, R. R. and S. G. WINTER (1982), *An Evolutionary Theory of Economic Change*, 2nd ed., Harvard University Press: Cambridge, MA.

Contributions to collective works:

STIGLITZ, J. E. (1989), “Imperfect Information in the Product Market,” pp. 769-847, in R. SCHMALENSEE and R. D. WILLIG (eds.), *Handbook of Industrial Organization*, Vol. I, North Holland: Amsterdam-London-New York-Tokyo.

Working papers:

WILLIAMSON, O. E. (1993), “Redistribution and Efficiency: The Remediableness Standard,” Working paper, Center for the Study of Law and Society, University of California, Berkeley.