

**SHOULD WE PUT THEM IN JAIL? COPYRIGHT
INFRINGEMENT, PENALTIES AND CONSUMER BEHAVIOUR:
INSIGHTS FROM EXPERIMENTAL DATA**

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ABSTRACT. The purpose of this paper is to deepen the knowledge of consumer behaviour in information goods markets, taking as a reference the sound recording market. In particular, its aim is twofold: on the one hand it attempts to get new insights on consumers paying special attention to their willingness to pay and to purchasing behaviour; on the other hand it wants to find out whether the recently adopted increase in legal measures against consumers by industries can have positive effects on lowering copyright infringement and raising legal demand.

Using experimental methods, we elicited individual preferences in legal and burned CDs. We used hypothetical as well as real choices. Our experimental results suggest that lawsuits can effectively lower the rate of copying because they raise the probability of being caught by consumers and thus punished. However, they do not necessarily raise legal sales since the measured consumer willingness to pay is generally lower than the market price for legal products. Consequently, increased copyright enforcement may only lead to demand withholding.

1. INTRODUCTION

The purpose of this paper is to deepen our knowledge of consumer behaviour in information goods markets, taking as a reference the sound recording market. In particular, its aim is twofold: on the one hand it attempts to point out new insights on consumers paying special attention to their willingness to pay and to purchasing behaviour; and on the other hand it strives to find out whether the increase in legal measures against consumers that has recently been adopted can have positive effects on lowering copyright infringement and raising legal demand. The answer to the first question seems to be ‘yes’, and the answer to the second question seems to be ‘no’.

The method used is that of experimental economics applied to a sample of university students who are, according to the Napster case and recent economic articles (Chiang and Assane, 2002) significant consumers of both legal and illegal products.

The paper is organised as follows: section 2 begins by presenting the new strategy adopted by firms of filing lawsuits against consumers who are caught infringing copyright. Section 3 presents the literature paying attention to consumers’ specificity. Section 4 introduces the aim of the experiments and describes the experimental design. Section 5 presents and discusses results, focusing on policy insights, while section 6 contains our conclusions.

2. THE NEW FIRM STRATEGY: SUING CONSUMERS

Almost every week the media reports news on file-sharing systems, piracy and related issues, feeding new fuel to the flamed debate facing copyright protection and free access to information. The music market plays a pivotal role in this burning dispute, at least since the Napster case, which brought to public opinion the concern regarding information sharing or copying and consumer liability.¹ In fact, for the first time the finger was clearly pointed at consumers and households, though they were not, at that particular time, directly charged. As is known, the Napster company was then sued for vicarious and contributory copyright infringement. Nevertheless, the die was cast and very soon consumers became the focal point of legal actions brought about by recording companies.

Over the last year the Recording Industry Association of America (RIAA) – the association that represents the major recording companies in the US – sued more than 3,400 people for copyright infringement, mainly consumers using file-sharing systems (FindLaw, 2004). This strategy is now spreading out all over the US boundaries and similar lawsuits have been filed in Canada and in European countries by the domestic recording industry associations or the International Federation of Phonographic Industry (IFPI) (Hines, 2004). The explanation for this tremendous increase in legal actions against consumers – sometimes highly debated as in the case of the lawsuit against a 12-year-old New Yorker living in a public housing – is supported by the industry associations for the effect it has had in reducing file sharing (Hines, 2004). This assertion is implicitly connected to the idea that such an outcome (reduced file sharing) will have positive effects on record sales and consequently on industry profits. In other words, the argument guiding this strategy is that the increase in the probability of being legally sued lowers copyright infringement and consequently raises the demand for original products, CDs or on-line phonograms (IFPI, 2004).

No evidence however supports this thesis, while social costs of legal actions are pretty evident as file-sharing does not mainly pertain to marginal fringes of society such as criminal milieus, but also to rather highly educated individuals, like college and university students, as was widely brought to evidence by the Napster case. Of course, the trivial interpretation of this state of affairs, as often carried by certain parts of the industry, is that consumers as a whole are pirates. But this conclusion seems to be quite simplistic and problematic unless we consider entire and vital parts of our society as roughly criminal.

It is worth noting that a similar rigid attitude has recently been equally taken against Internet retailers, thus strengthening the idea that the way of courts has been identified as the sole general solution against decreases in sales. This is the case of lawsuits filed against Amazon.com, Play.com and CD-Wow, guilty according to the plaintiffs of illegal imports, but in reality just of selling legal CDs at significant lower prices compared to the traditional commercial channels (Masera, 2004). Now, if on one hand a few observers have noted that, in the recording industry – as in the chemical, pharmaceutical, publishing and software industries – firms have repeatedly leveraged their exclusive intellectual property rights in order to raise trade barriers, with an ambiguous flavour in terms of anti-competitive behaviours and social welfare (OECD, 1995; Fels, 1994), on the other hand the increase of

¹*A&M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896 (N.D. Cal. 2000); *A&M Records, Inc. v. Napster, Inc.*, US Court of Appeals (9th Circ., 2001).

legal CD sales over the Internet seems at least to uncover a generalised uneasiness by consumers with traditional retailing and pricing of music recordings. The latter does not seem to be taken into account seriously by firms.

All in all, the situation as a whole suggests that the music market is facing a major change, from both a technological and a consumption point of view. By contrast, a consistent lack of understanding of consumer behaviour emerges, probably connected to the high costs required to collect micro-data, together with the delicate matter of getting information through channels that can be legally sued.

3. CONSUMERS, COPYRIGHT AND COPYING

The modern economic theory on copyright, since the seminal contribution by Arnold Plant (1934), has followed a path of slow but incessant development, finally gaining a major interest as information goods protected by copyright started to play a significant role in developed economies. However, the scientific literature has tended to focus on welfare matters by considering on the one hand consumption efficiency, as copyright restricts demand and thus decreases consumer surplus, and on the other hand production efficiency, as in the absence of revenues, creators would be expected to produce a sub-optimal level of new information goods. The latter is the so-called utilitarian theory of the ‘incentive to create’.²

In general, scholars have tried to solve the above trade-off starting from different assumptions and often reaching divergent conclusions. The main focus has concerned the effect of copying and information sharing in markets, which has been increasingly enhanced by technological innovation that can threaten the markets themselves. Nevertheless, despite the different conclusions, all this literature presents the common feature of assimilating information goods, their production and their exchange to standard economic activities, mostly neglecting the social origins of information and the pivotal role of individuals, consumers or creators, and communication processes in the market dynamics. In particular, there is a consistent lack of understanding of consumer behaviour, which is only roughly sketched out. For instance, Novos and Waldman (1984) merely skip the matter of problematic consumer behaviour by assuming that they always buy a CD, either legal or copied.

Now, the above stylisation does not take into account another option that consumers have i.e., ‘not to consume’, which similarly represents a noteworthy choice for individuals and for firms. Accordingly, the lack of understanding and the resulting excessive simplification might lead the observer to incorrect conclusions and policy implications.

Luckily, this has not always been the case. A small number of papers do pay attention to consumer specificities. Besen and Kirby (1989) make a reasonable hypothesis on willingness-to-pay, assuming that in general consumers value original products more than copies. A few different scholars have tried to deepen the matter: Conner and Rumelt (1991), Takeyama (1994) and Shy and Thisse (1999) show for instance that sometimes the usefulness of each consumer is that of increasing the total number of users, something that is usually termed ‘network effects’. In such a case, under certain conditions, copying can have a positive effect both on consumers and producers. Nonetheless, this powerful intuition is mainly referred to

²The ‘incentive to create reasoning’ sends us back to Bentham’s work. For a general survey see Ramello, (2005). Specifically on copyright see Watt (2000).

the software domain, which for its specificity of dematerialised technology can be represented as a network.³ There is no clear extension to other information goods.

Liebowitz (1985; 2003) refers to the ‘exposure effect’ to describe the familiarity with which certain information goods by means of copying can eventually determine their subsequent purchase. The central idea here is that, in a sense, copies can play the role of informative advertising, thus helping consumers to choose the utility maximising legal products.

Similarly, but with a significant difference, Silva and Ramello (2000) argue that in the music market a sort of ‘addiction effect’ exists and, subsequently, in an inter-temporal perspective, low-valuation consumers can become high-valuation ones thanks to previous consumption. In other words, under certain conditions, the current consumption of copies can determine future purchases.⁴

However, all of the above features are in a sense just a small extension of the general representation of consumers, essentially still sketched as passive price takers with limited additional characteristics.

The general assumption is that copying behaviour is just a side effect of the legal market due to the possibilities of copying brought about by technology, the willingness to save money by consumers and weak legal enforcement. Hence, here we can find the roots for the idea outlined above that courts can save the market and increase legal demand.

In reality, as we shall see, the picture seems to be more complex and consumption attitudes are really the focus of the problem. We shall observe them from a dynamic perspective.

4. THE EXPERIMENTS

In the following sub-sections the aim and the method of the experiments that were carried out will be described. It is worth noting that even if experimental economics can have some limits due to the fact that small samples inevitably have to be analysed, in the present case we can see the interesting feature of obtaining micro-data on specific behaviour that otherwise would not be feasible, that is to say information on subjective behaviour, even if illegal. In addition, the fact that we can compare the results obtained from two different experimental situations enables us to underline the robustness of some of our findings.

The following section describes in greater depth the purpose of the experiments, while section 4.2 illustrates the experimental design.

4.1. Purpose of the experiments. The aim of our experiments is essentially to answer the following three questions:

1. Whether a potential demand for legal CDs exists which could be satisfied at the current market price or at a lower price than the actual market price.
2. Whether a positive price exists that is significantly different from zero for burned CDs.
3. Whether the judicial strategy of suing consumers can have positive effects on lowering copyright infringement and/or on raising the demand for legal products.

³It is more a matter of compatibility: the more individuals that use a specific software the easier it is to exchange files, to discuss them, find help, etc.

⁴In both cases, the phenomena can be welfare enhancing if they prevail on the substitution effects, i.e. the shift of legal demand to copied products.

The three questions, as can easily be seen, are linked. Buying legal CDs is connected to the first instance regarding the willingness to pay (*wtp*) and to the substitutability with other products. Generally, the choice between legal and infringing music files depends on the substitutability between legal or infringing products, which is, connected to the price/cost of buying/burning an infringing CD. However, these cases have extensively been studied by the literature mentioned above and thus do not represent the focus of this paper.

The intuition assumed here is that if the price of copied CDs is maintained at zero, it is not possible to find an unsatisfied demand for legal CDs. In other words, according to this reasoning, any rational consumer will consume only unauthorised CDs since their price is zero. If the price is significantly greater than zero and somewhat close to the market price, then there is some space for the legal market. Accordingly, measuring the cost of burning a CD is crucial in order to verify what kind of market is possible.

If the price of a legal CD exceeds the consumers' *wtp*, we do not expect any legal demand; that is consumers either won't buy or will buy an infringing product. One of the variables explaining the choice for infringing the law is the probability of being caught perceived by individuals, which is a proxy for the intensity of lawsuits filed by recording companies. If consumers perceive a positive probability of being punished when infringing copyright law, reasonably they will consume less downloaded or copied CDs, even if the marginal cost of reproducing them is zero. However, it is worth noting that this does not imply that they will switch to legal CDs, since such a choice depends not only on punishments but also on the *wtp*. And *wtp* can be low enough to make legal CDs unaffordable.

To answer our original three questions and their possible interconnections we decided to investigate consumers' *wtp* for both legal and illegal products. In addition, to this we thought that it was of paramount importance to inquire about the more general attitudes that influence the behaviour of consumers. In fact if the existence of a technology that makes it very easy and costless to copy and prices were the only important factors that determine the choice between *to copy or not to copy*, then the correct question to be answered would be why does a market still exist.

For these reasons, on the one hand, we decided to concentrate on the demand side of the market and, on the other hand, we tried to investigate directly, exactly which consumer attitudes or beliefs are behind the mere matter of fact of the existence of piracy.

In order to do this, besides running the experiments designed to investigate consumers' potential demand, we also asked the participants in the experiments to fill in a questionnaire that contained all sorts of questions in order to understand general personal attitudes or behaviour that, according to us, could have an impact on the choice of copying or not copying.⁵

In the next sub-section, we explain the experimental design in greater detail.

4.2. Experimental design. We ran three experiments, two measuring the hypothetical *wtp* and one measuring the real willingness to pay through an auction market.

⁵Of course we are aware that beliefs are subjective as well as cultural matters. For this reason we plan to extend this experiment to other situations.

In the first two sets of experiments, we directly asked the participants about their *wtp* for an authorised CD and an unauthorised one (*wtp* can be used as proxy of consumer demand).

Before describing in detail how the experiment was organised and conducted, it is important to notice that when we speak about prices and individual *wtp* for a CD we refer to a specific category of products, the one concerning the so called *full-price* CDs, that is to say the higher-priced CDs in the market.⁶ The copies are, of course, of those same CDs.

Subjects answered the hypothetical questions in the form that is reported below.⁷ The same question was asked for an original CD and for the copy of the same CD. Hence, subjects had to answer two questions. In order to avoid an order effect, the questions were presented to participants in random order. The question in the case of the original CD was as follows: *Suppose that you are given the opportunity of buying an original CD with your money. It is important to know that the CD is not sold to you for real but it is of utmost importance that you state your maximum willingness to pay for this CD as if this CD were to be sold for real here and now and you would have to pay for it with your own money.*

In case of the copy, we did not use the word ‘copied’ or ‘unauthorised’ or ‘illegal’ or ‘downloaded’, but the more general form of ‘burned’, which includes different ways of obtaining an infringing CD but does not associate any specific judgement or moral assessment.

This question was followed by a list of prices which went from zero to 0 to more than 24 with increments of 0.5.

Subjects had to write ‘no’ near all the numbers that they *were sure they were not willing to pay for* and ‘yes’ near all the ones that they *were sure they were willing to pay for*.⁸

In both the hypothetical experiments, a number of participants had to state their maximum willingness to pay for an ‘original’ CD,⁹ while, others had to state their maximum willingness to pay for the new CD of one most popular domestic rock singers that was released during the period in which the experiment was run.¹⁰

In both experiments, they had to state their willingness to pay for the original and the copy of the same CD.

⁶Full-price CDs are in general new releases sold at the higher price. In Italy the price of these CDs usually falls in an 18-20 euro interval depending on the type of shops as well as particular launching or discounts practised. It is worth noting the downloading and copying normally plagues this category of products (Silva and Ramello, 2000).

⁷Asking hypothetical willingness to pay is common practice especially in psychology experiments or in contingent evaluation studies. We are aware of the limits that this method can have but we also are aware that these limits have very often been overstated see Camerer and Hogarth (1999).

⁸Using a price-list is, according to experimental literature, a way of making a pricing task more similar to a choice task. See Tversky et al.(1990) and Camerer (1995). Subjects seem to respond better to a choice task than a pricing task in the sense that a choice task is cognitively easier than a pricing task. In any case, however, it is important to notice that the goods in question are well-known goods for youngsters.

⁹In fact, we used the terminology “an original CD of your favourite singer”.

¹⁰We decided to compare the willingness to pay for an original ‘general’ CD with the willingness to pay for a particular CD, since we were worried that subjective preferences would interfere too much with the evaluation of a specified CD.

There was no incentive mechanism in monetary terms, but students were given a partial exemption from their examination paper in exchange for their participation.¹¹

At the end of the experiment, the participants had to fill in a questionnaire. In addition to some personal data, the questionnaire contained questions concerning their subjective perception and opinion about the legal market and infringing activities that were to be examined later on.

In total, seventy-four students participated to the first experiment, and fifty-four in the second experiment.

The validity of hypothetical evaluations of willingness to pay has sometimes been questioned in literature because of the general lack of knowledge of the goods sold (Johannesson et al., 1998). However in these experiments, this problem is not crucial – and thus the validity of the method holds – mainly for two reasons: first, the goods concerned are goods that are normally sold in the market and consumers know the market prices for these goods (we are not talking about states of health or pollution reduction as in the so-called contingent valuation); secondly, students are among the most frequent users of authorised as well as unauthorised music. Accordingly they have the best knowledge on these goods and their *wtp* for them.

However, we decided to run a third experiment using an incentive compatible mechanism as a means of comparing the results from the two different experimental methods. In our third experiment, we ran an auction market in which a burned and an original CD were sold by the experimenter to the subjects.

We ran four auctions with fifteen participants each (thus sixty students took part to the auction). To sell the two goods, we used a sealed-bid-third-price auction, so that two students could win the auction.¹² The winners of the auction had to buy the CDs on the spot at a price equal to the maximum *wtp* of the third-last bidder. Before starting the auction, each student had to write on a piece of paper three favourite CDs of their choice. These would give the experimenter a choice in case one of the CDs was not available. The problem of availability was worse in the case of copies. It is important to note that we, in fact, did not copy the CDs but we bought music files on the Internet in order to avoid infringing copyright law. However, this information was not available to subjects. We had to choose between hiding some information and breaking the law.

The experimenter was given a day to get the CDs and give them to the winner of the auctions in exchange for the agreed price. At the end of the experiment, the students had to fill in the same questionnaire given to the students in the first two experiments.

To summarise: we ran three experiments, two hypothetical ones and a real one (the auction). In total, we had 188 participants. They were all students from a northern Italian university with similar background.

As far as the questions themselves are concerned, copied versus original CD was a within subjects design while specified versus preferred CD was a between subjects

¹¹For a discussion of the importance or note of monetary incentives we are reminded of Gneezy and Rustichini (2000) and Camerer and Hogarth (1999). Moreover we would like to point out that for most of the Italian students one or two points waived on the final exam will count more than the usual flat payment of three or four euros.

¹²We adopted an auction with two winners in order to strengthen the incentive mechanism. This is a method commonly used by experimentalists. For a general discussion see Kagel (1995), and for a particular application see Sarin and Weber (1993).

design. Moreover, it is important to notice that when speaking with the students in all the experiments we made it clear that we were always focusing on a CD in the highest category of prices, that is to say a full price CD. Nevertheless, we never mentioned a precise monetary value.

Then, in all of the three experiments, in addition to *wtp* subjects also answered a questionnaire which was designed to investigate some more general attitudes of the subjects that could help us to explain the widespread existence of piracy. In particular, we asked the following questions: Do you consider coping a CD illegal? Criminal?¹³ Unethical?

In addition, in one hypothetical experiment and in the auctions, subjects had to state whether they considered the fact of being caught while downloading or coping an illegal CD *not at all likely, somewhat likely, likely or very likely*.

As can be seen the first set of questions were related to a sort of ‘moral’ attitude of our subjects; the answers to these questions can help us understand the underlining social customs of the group, while the question on the probability of being caught is more related to their belief about the enforcement of the law.

Results of the experiment are given and interpreted in the next session.

5. RESULTS AND DISCUSSION

The experimental results, as can be easily observed and will be further discussed, are somewhat surprising and give new insights to the understanding and the interpretation of consumer behaviour, at least from a qualitative point of view.

Table 1 presents statistics on the willingness of individuals to pay for a legal CD. *H1* and *H2* symbolise the potential *wtp* measured in the first two experiments for a generic full-price CD, that is to say a full-price CD subjectively chosen by the respondent and thus exactly matching his/her preferences. *HS1* and *HS2* correspond to the values for the specific new released full-price CDs. The four *AUn* columns present the same results – actually measured – obtained from the four sessions of the auction.¹⁴

	<i>H1</i>	<i>H2</i>	<i>HS1</i>	<i>HS2</i>	<i>AU1</i>	<i>AU2</i>	<i>AU3</i>	<i>AU4</i>
Mean	14.986	8.980	13.671	12.230	10.318	11.766	10.236	8.970
Std. Dev.	3.803	4.210	4.511	3.731	4.363	4.128	5.124	4.656
Median	15	10	13.5	12	12	12	10	9.5

As can be easily observed, all the experiments are characterised by a positive and significantly high *wtp* of the subjects. Comparing the two different methodologies adopted, the figures obtained seem to be quite compatible. In fact, in the hypothetical experiments the range of *wtp* numbers, from 8.980 to 14.986, is sufficiently close to the range found in the auction market, that is 8.970 to 11.766. In particular, the minimum *wtp* is almost the same – with no appreciable dissimilarity in the specific versus subjectively chosen CDs in the hypothetical experiments –, reinforcing the idea that the two methodologies are sufficiently descriptive and well

¹³We expressly used the word crime because this is the word that it is used in advertisements in Italy; “Piracy is a crime”, even if the word crime in common language tends to mean the breaking of the law that leads to personal imprisonment rather than to the payment of a fine.

¹⁴The figures returned from the two hypothetical experiments, as well as those from the auctions, have not been grouped together because non-parametric statistics tests seem to indicate that they are belong to different distributions.

matched. However, the difference in the upper bound can be explained easily by the fact that in the hypothetical experiments, the CD was not really bought and thus the *wtp* was possibly not as constrained by the budget as in the real experiments where subjects truly bought the CD.

Nevertheless, differences do not seem to be so wide and the figures measured show that at least there is an intersection of prices, – greater than zero and roughly between 9-11 euros – for which consumers are effectively willing to buy a legal CD. By the same token, we can see that the numbers found are all lower than the market price for a full price CD, as all the *wtp* are always lower than 18-20 euros. This leads the observer to the implication that, except for a small number of participants offering a price ranging around the market value (as the reported *wtp* are means), most of the subjects would not have bought a CD sold at full market price. Thus pricing a product at a full-price level will reasonably cause demand withholding. The assertion is reasonably compatible with the decrease in volume of CDs sold which has been observed in recent years in Italy (and elsewhere).

Of course, an obvious question involves the reason why major recording labels are still pricing most of their CD production at a full-price level. The answer is easy to find by recalling the usual firm strategy: majors decide ex-ante when a release will be full price and because the demand is somewhat unpredictable, they assume for every product sold in this price category – most of their catalogue – the same expected demand; accordingly, they fix the same price (Silva and Ramello, 2000).¹⁵ Nevertheless, this pricing approach is dangerous as it represents an extreme way of applying the *ceteris paribus* condition: it is in fact pretty evident that new releases are not necessarily perceived by consumers in the same way as best selling products, and even if this were the case preferences can change as income, expectations, and technology change.

Consequently, the previous pricing that may once have worked probably no longer fits today's market and, perhaps, as several scholars are claiming (Romer, 2002), new business models are necessary. Moreover, it is worth noting that by downloading and copying music files and also, as noted earlier, by buying less expensive CDs through the Internet retailers, consumers are repeatedly indicating that their *wtp* for music recordings has changed.

Table 2 follows the same organisation and shows the results for copied CDs, referred also to phonograms sold in the full-price category.

	<i>H1</i>	<i>H2</i>	<i>HS1</i>	<i>HS2</i>	<i>AU1</i>	<i>AU2</i>	<i>AU3</i>	<i>AU4</i>
Mean	7.513	9.173	7.042	4.673	4.302	4.366	3.600	4.15
Std. Dev.	3.471	5.877	2.731	1.897	2.309	2.955	2.020	3.7
Median	7	10	6	5	4	4	4	4

¹⁵It is worth noting that, in general, selling products in the full price category follows an endogenous product differentiation strategy: high sunk costs serve to launch a release in the full price segment, but, because of uncertainty and a risk minimisation strategy, they are considered by firms as a whole to be divided amongst all the full-price releases. Consequently, the expected demand for each full-price product is the same. In other words, from the firms' point of view, sunk costs, once paid, grant a record an average desirability level and consequently an expected demand which is the same for all products belonging to the full-price segment (see Silva and Ramello, 2000). This claim corresponds to what was once found in the UK, see Monopolies and Mergers Commission (1994, p. 26).

Surprisingly, also in this case consumers are willing to pay a price significantly higher than zero, since in the hypothetical experiment the *wtp* figures range from 4.673 to 9.173, while in the auction results the range is from 3.600 to 4.366. Although here figures diverge slightly, underlining more sharply the presence in the hypothetical experiments of overrating in comparison to the real choice, thus requiring a certain caution in interpretation, still a few comments are possible.

Firstly, given our results, the standard hypothesis assuming that consumers in general value original products more than copies (Besen and Kirby, 1989) does not appear fully verified here. In this setting, for a number of consumers the *wtp* for a copied CD is close to the *wtp* for an original (and in fact the mean *wtp* for a copy is actually marginally higher than that of an original in hypothetical experiment 2). This could lead to the counterintuitive observation that, assuming the marginal cost and the average cost are significantly low – they are frequently assumed to be constant and zero or the price of a blank CD, less than 1 euro – there is a price significantly higher than the marginal-average cost for which consumers would shift from copied to legal CDs, thus crowding-out copying and piracy. However, this intuition is preliminary and requires further research.

Nevertheless, it is at least possible to indirectly maintain that the standard assumption that consumers prefer downloaded/burned CDs because they are free, that is to say offered at a zero price, is not true. Rather, this is contradicted by the empirical outcomes which show instead that a positive and significantly higher than zero *wtp* exists even for these CDs.

Furthermore, Table 3 supports the previous figures, illustrating that even in the case of downloading and/or private copying, subjects perceive these activities as costly. Therefore, it represents a sort of validity test of the numbers shown in Table 2 as it tries to catch, at least from a qualitative perspective, the opportunity cost of producing a copied CD and thus it further qualifies that downloading/copying music files is not perceived as a zero cost activity. For the sake of simplicity, Table 3 aggregates numbers per experiment, without distinguishing between specified/unspecified CDs in the hypothetical experiments and per session in auctions.

	<i>Hypothetical 1</i>		<i>Hypothetical 2</i>		<i>Auction</i>	
	Time (min)	Cost (euros)	Time (min)	Cost (euros)	Time (min)	Cost (euros)
Mean	21.43	3.8	11.5	4.2	11.16	4.32
Std. Dev.	37.01	8.05	9.17	12.89	7.45	4.47

Here the numbers are somewhat more puzzling: even if the means of the perceived cost converge to around 4 euros, the standard deviations are significantly different, as are the perceived times. In the first hypothetical experiment, the mean of time employed is 21 minutes and 43 seconds (though with a standard deviation of 37.01), while in hypothetical experiment 2 and in the auction the numbers are more similar, respectively 11 minutes and 50 seconds and 11 minutes and 16 seconds with an appreciably lower standard deviation. We have no trouble-free and evident justification for the above discrepancies. However, a preliminary justification can be drawn from differences in the participants of the three experiments. In fact, respondents to the first hypothetical experiment were first year/first semester students, possibly less experienced with Internet broadband connections, peer-to-peer

systems and/or exchange relationships with colleagues (the high standard deviation seems to confirm that skills and exchange possibilities follow a more skewed distribution for this group of subjects). The importance for copyright infringement of technological skills and knowledge on how to locate the desired product has been stressed elsewhere (Chiang and Assane, 2002).

Accordingly, if drawing general remarks in this case is a more complex matter, it is again possible to at least claim that downloading and copying are not perceived as a zero cost activity. With some prudence, it is additionally reasonable to state that these costs are somewhat close to the *wtp* for a copied full-price CD. In the end, even in this case the perceived cost is significantly higher than the marginal cost.

Table 4 presents the answers of respondents – only for the second hypothetical experiment and the auction – to the question concerning the probability of being caught in case of copyright infringing activities.

<i>Experiment</i>	<i>perceived probability</i>		
	zero	low	high
hypothetical 2	22.2	63	14.8
auctions	36.7	58.3	5

It is quite evident that most individuals – 95 % of auction subjects and more than 85 % in hypothetical experiment 2 – do not consider it likely that they would be caught infringing copyright. At first sight, this observation seems to corroborate the judicial strategy adopted by majors, as raising the probability of being caught and the cost associated with the event of being caught would reasonably lead individuals to lower illegal activities. This assertion is consistent with results from different sources in other domestic markets (Rainie et al., 2004; Nielsen, 2003).

Finally, Table 5 summarises our findings from the answers to the remaining questions concerning the moral attitudes of the subjects.

<i>Experiment</i>	<i>Illegal?</i>		<i>Criminal?</i>		<i>Unethical?</i>		<i>Price too high?</i>	
	Yes	No	Yes	No	Yes	No	Yes	No
Hypothetical 1	71.6	28.4	10.8	89.2	40.5	59.5	94.6	5.4
Hypothetical 2	59.3	40.7	3.7	96.3	31.5	68.5	98.1	1.9
Auction	66.4	33.3	7.8	92.2	34.7	66.3	98.3	1.7

The first column shows that a high percentage of respondents do perceive downloading/copying as an illegal activity (*H1*: 71.6 %; *H2*: 59.3%; *AU*: 66.4 %). These numbers are in line with what has been found in other recent surveys (IFPI, 2004). However, in most cases subjects do not think that these are criminal activities, despite the massive campaigns promoted by the domestic recording industry association (and other firms/associations in related fields like movies, software, etc.), which, as we have mentioned above, are mainly devoted to making consumers feel like criminals. By contrast, they do not even perceive these activities as unethical (almost 60% or more in all the three experiments). Interestingly then this feeling seems to be correlated to the quasi-universal perception that the market price – that is to say the full-price level – is too high.

Summing up, from these statistics we can grasp two different general results: first, consumers are willing to pay positive prices for legal – and even for copied – CDs. These prices are significantly higher than the marginal costs, roughly represented by the cost of a blank CD. Consequently, at prices that are lower than full-price, but that still permit positive profits, the legal market should increase whereas copying and piracy should decrease. In fact, several consumers, that at the current market price do not buy legal products and prefer to download and copy, will presumably become legal buyers at a lower market price. It is worth noting that this suggestion has already been followed by a Major – Universal Music Group – who recently decided to appreciably lower the wholesale prices for a number of products (Molinari, 2003).

Accordingly, the widespread perception that the probability of being caught when adopting infringing behaviour is very low supports the idea that an increase in lawsuits and penalties will probably have positive effects in reducing individual illegal activities.

However, this reaction could be opportunistic, as subjects do not perceive copyright infringement as an evil per se and do not feel guilty about it; on the contrary, although they have quite a clear idea of the legal framework, they find several justifications for downloading and copying. Among these justifications, once again, they express uneasiness in being able to afford high market prices.

All in all, this reasoning leads us to an unpredictable consequence: given the experimental *utp* and the current pricing policy, the lowering of copyright infringement due to lawsuits will not have the expected consequence in raising consumption and thus firm profits. It will simply lower total consumption of recorded music, with likely negative effects on total welfare as profits will not increase and consumer surplus will decrease.

By the same token, if we introduce specific demand features – such as exposure effects, addiction effects, network externalities and indirect appropriability as described in section 3 – the welfare reducing effect will probably be amplified. It is worth noting that since certain of these demand characteristics – such as the addiction effect and exposure effect – present a dynamic nature, the decrease in demand will presumably have a negative impact also on future consumption and firm profits, and last but not least on the pace of technological change, as observed by Romer (2002).

In other words, the judicial response that has been used can possibly bring some positive consequences in the short term, deterring temporarily some users from adopting infringing behaviour; nevertheless, as it systematically neglects demand signals and raises monitoring and litigation costs, it is unlikely to reach efficient results in the long term.

At the most, it could possibly raise social costs at a level that seriously questions the overall beneficial effects of copyright on social welfare. This is becoming an increasingly debated matter (Schwartz, 2004) and raises the question of whether we can justify the enforcement of private and individual rights that harm the community as a whole. It is only if we can justify such enforcement that copyright can be said to serve its statutory goals, that is to say increasing social welfare (and enriching public knowledge) by means of limited private incentives (Ramello, 2005). This consideration would suggest a shift in the actions of judges and legislators, as social welfare rather than private interests should be the focal point of their activities (Romer, 2002).

6. CONCLUSION

This article deals with copyright infringement and consumer behaviour, taking as a reference the music market, which plays a pivotal role in the hot-potato debate on copyright. In particular, this work focuses on the willingness of consumers to pay for original and burned CDs, and tries to compare the results with usual market pricing practices.

Additionally, it studies infringing behaviour with the aim of verifying whether or not an increase in lawsuits is effective in decreasing infringing activities and raising legal demand.

Specifically, we designed and ran two different experimental methods in order to elicit individual preferences on legal and burned CDs. We used hypothetical as well as real choices. The population observed was made up of university students who, in accordance with the Napster findings and other scientific works, represent an important part of the demand of both legal and illegal music recordings.

The provisional interpretation of our experimental data suggests that lawsuits can effectively lower the rate of copying because they raise the probability perceived by consumers of being caught and thus of being punished. However they do not necessarily raise legal sales since the measured consumer willingness to pay is generally lower than the market price for legal products. Consequently, increased copyright enforcement may only lead to demand withholding.

Rather, the experimental findings seem to recommend that firms adopt a different and more affordable pricing strategy that could have two effects; allowing positive profits, and crowding-out a part of illegal consumption (since consumers do not perceive downloaded/burned music files as cost-free and thus there is some space for substitutability).

Furthermore, these outcomes, together with the existing economic literature, advocate a more cautious treatment of copyright infringement in the name of social welfare, as given a specific legal demand, infringing activities serve to increase consumer surplus in the static framework and can, under certain conditions, increase the legal demand from a dynamic perspective.

In absence of clear effects in terms of welfare, taking into account the social costs of the enhanced judicial strategy, a more accommodating attitude should possibly be taken by judges and legislators.

Finally, a deeper understanding of consumer behaviour is necessary in order to provide proper economic interpretations and to design correct welfare enhancing policies.

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