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**Transmit/Disrupt: Why does illegal broadcasting
continue to thrive in the age of liberalised
spectrum?**

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MSc in Communications, Regulation and Policy (Research Track)

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Transmit/Disrupt: Why does illegal broadcasting continue to thrive in the age of liberalised spectrum?

Justin Schlosberg

ABSTRACT

This research examines the systemic factors that perpetuate illegal broadcasting. It is primarily based on interviews conducted with UK policy makers, lobbyists and activists between May and August 2009, and analysis of documents sourced in part through applications under the Freedom of Information Act. The research finds that illegal broadcasting plays a key role in the value chain of production within the urban music industry and that current digital radio policy is unlikely to reduce its prevalence. Evidence suggests it is an increasingly marginalised issue in regulatory discourse and there is growing emphasis on enforcement at the expense of licensing alternatives. The research also uncovers elements of informal decisionism, raising question marks over the transparency and accountability of the broadcasting policy process.

1. INTRODUCTION

Popular media discourse tends to herald the late 1960s as the heyday of pirate radio. The very terminology is associated with outlaws of the sea. In the radio context, it conjures up images of heroic disc jockeys, exiled on offshore platforms, servicing demand for the new popular music disregarded by the paternalistic and state aligned BBC. The Marine Offences Act of 1968 ended off shore pirate radio and led to the development of land based illegal broadcasting. But the dominance of the off shore story in popular discourse, and the cultural nostalgia it invokes, has made contemporary illegal broadcasting appear marginal and irrelevant. This is mirrored in academic writings whose accounts, though inclusive of land-based pirates, by and large draw to an abrupt close at the end of the 1980s (Barnard, 1989; Chapman, 1992; Hind & Mosco, 1989). Academic silence on contemporary pirate radio reflects a broader neglect of radio within broadcasting studies as a whole. According to Lewis and Booth, radio's neglect stems from its inferior economic status relative to television which has rendered it not only a secondary but also 'invisible' medium in both policy and academic discourse (Lewis & Booth, 1989).

Yet illegal broadcasting today has a ubiquitous presence on the FM band in major UK urban centres. In 2007 there were estimated to be 150 stations broadcasting illegally in the UK with over half of these based in London (Ofcom, April 2007b). A scan of the dial conducted in July 2009 for this research, picked up 60 stations broadcasting with a clear signal of which 5 were BBC stations, 11 were licensed commercial stations, 3 were licensed community stations and 41 were pirates (see appendix A). The extent of illegal broadcasting's presence on the airwaves is matched by its audience reach with one in three 15-24 year olds in London claiming to listen to illegal broadcasting stations (Ofcom, April 2007c), a finding at odds with declining youth audiences for analogue radio as a whole (Albarran, *et al.*, 2007; Ofcom, August 2009).

But perhaps the most surprising aspect of the extent of illegal broadcasting today is simply the fact that it has survived, and arguably prospered from four decades of persistent policy measures aimed at its eradication, most notably in the context of spectrum liberalisation. In the UK, this has been marked by a radical expansion of licensing regimes since 1990 that has transformed the political economy landscape of radio from a system dominated by the BBC, to a mixed ecology encompassing public service, commercial and increasingly community-

based radio. This study starts from the premise that the very endurance of pirate radio is indicative of its cultural, political and economic significance.

Culturally speaking, the space occupied by illegal broadcasters today is dominated by the underground urban music scene – defined here as a community of broadcasters, producers, artists and audiences centred round new and emerging black music genres. This is by no means an exhaustive representation of illegal broadcasting in the UK, or indeed other countries. Even within London, a minority of pirate stations are speech-based, often with religious or community-oriented formats. But in focussing on urban music pirates in London, I aim to establish why the legal radio spectrum continues to exclude significant groups of minorities and young people, despite a raft of new licenses awarded since 1990. The findings have broader implications concerning political economy and broadcasting policy. With respect to the former, illegal broadcasting occupies a distinct position within the political economic map of radio, providing a service of value to the urban music industry – including legal broadcasters – but one that could not be replicated within existing licensing regimes. With respect to policy, illegal broadcasting is in part the product of an essentially conservative approach to frequency planning, licensing and enforcement. The failure to eradicate it has culminated in a policy stalemate in which enforcement is increasingly prioritised without consideration to radical licensing alternatives.

In discussing these issues, the analysis that follows intentionally avoids a normative dimension insofar as it does not assess the supposed benefits or harms of illegal broadcasting. Rather, the primary goal is to show how and why it exists – questions that have largely been overlooked even by the limited literature to date. Above all it is an analysis *of* rather than *for* policy (Hill, 1997), although policy alternatives are both suggested and implied in the conclusions drawn. The following section critically reviews the key literature and is followed by a relatively detailed discussion of methodological issues. Findings are then discussed with explicit reference to the identified research questions. The thesis concludes with a summary of the key findings, their theoretical implications and limitations, and an outline of possible further research.

2. CONCEPTUAL FRAMEWORK

The following is a review of the relevant background literature with particular reference to diversity, identity, policy and power. This culminates in an outline of the research goals and statement of key research questions.

Radio diversity

Much has been written about the incapacity of both commercial and public service broadcasting models to support diverse and niche programming, though the empirical evidence is limited. The real question is not so much whether choice exists, but what *type* and *extent* of choice is on offer. Even on the terrestrial platform, radio has long supported a far greater number of services than television. Yet the persistence of demand gaps filled by pirate radio suggests that a distinction between variety and diversity is instructive. According to Glasser (1984: 140):

Inevitably, when consumer welfare is defined economically instead of culturally, variety will be mistaken for diversity. The former emphasises the quantity of different radio services, the latter emphasises the extent of difference.

The 'illusion' of choice is underlined by the unique branding of individual stations. But Glasser allows for the fact that commercial radio markets *do* facilitate niche programming, to the extent that they cater for audiences considered profitable. This has resulted in the over-representation of niche genres such as adult contemporary and gold music formats – genres that appeal to the heartland of 25-40 year olds from middle and upper income groups (Hendy, 2000).

In contrast, underground urban music formats, with their inexorable tendency to innovate, are acutely unstable and attract audiences considered less attractive to advertisers. Yet they often provide the breeding ground for mainstream pop successes. This occurs through what has been termed a 'paradoxical convergence of operational logics' between the professionalised commercial music industry and the free cultural spaces that produce 'novelty' (Straw, 1997: 498). Illegal radio has long served as an access bridge between these worlds. The music industry's repeatedly slow reaction to the emergence of new genres - particularly in black and urban categories – has created the space for illegal broadcasting to flourish and has been a recurring theme throughout its history. Thus the cultural conservatism of the music industry during the off shore era continued through the 1980s

when, as Hind and Mosco (1989) point out, it took several years before UK record companies or legal radio stations took notice of the burgeoning hip hop culture, and only after illegal radio had demonstrated its mass appeal.

Ideology and identity

Public service broadcasting, with its commitment to diversity and guaranteed funding is in a better position than commercial radio to support alternative music formats. But alongside its commitment to diversity stands the public service principle of serving the whole audience of a given locality (Lewis & Booth, 1989). Though this does not preclude minority programming, it has tended to restrict it to the schedule margins. This limitation began to surface acutely during the late 1970s when land-based piracy was becoming an endemic feature of London's air waves:

The black and Asian communities in London, about to suffer more than any others from the harsh Thatcher climate, were to become increasingly critical of their marginalisation in the media. Radio London's Black Londoners, for all its increase in hours, simply illustrated its critics point about 'ghetto' slots (Lewis & Booth, 1989: 98).

The resurgence of pirate radio in the 1980s was thus largely the expression of marginal, or perhaps more accurately, *marginalised* voices. Musically it became home to urban and black music formats (Hind & Mosco, 1989; Barnard, 1989; Rudin, 2007) whilst politically it converged to some extent with the growing community radio movement. Following the 1972 Broadcasting Act which conspicuously excluded community radio, 'UK community initiatives that had emerged in the late 1960s and early 1970s were left with only one option and that was operating illegally in addition to campaigning for official recognition' (Cammaerts, 2009: 13). At the same time, migration of pirate radio from the sea to the tower blocks reduced the set up costs for pirates and made it financially feasible to serve smaller, localised communities (Hind & Mosco, 1989).

However, this association should not be over stated. Even at the zenith of community radio as an underground protest movement, pirates have always grappled with the unresolved tension between serving excluded communities and turning a profit (Lewis & Booth, 1989). During the 1980s this was manifest in a dichotomy between the veneer of anti-establishment protest, and support for deregulatory policies advanced by the Conservative government. It was after all the Labour government's ideological opposition to commercial radio, rather than Conservative support for law and order, that provided the impetus to quash the off shore

pirates (Chapman, 1992). But the tension between serving the community and making money is rarely reducible to a simple or clear cut choice. Illegal broadcasters face structural impediments to non-profit funding sources and commercialism is often an unavoidable means of survival rather than an end in itself.

A question of policy

Such contradictions are mirrored in government policy which has routinely employed a combination of intensifying enforcement and licensing liberalisation in response to illegal broadcasting. The surge of land-based pirates in the 1980s prompted new draconian legislation in the form of the 1984 Telecommunications Act enabling the IBA to pursue tougher enforcement measures and increasing the penalties for convicted pirates (Hind & Mosco, 1989; Lewis & Booth, 1989). In contrast, the raft of commercial licenses that followed the 1990 Broadcasting Act was to radically transform the radio map, with the number of commercial stations increasing three-fold within a decade. The Act was the fruit of a broader neo-liberal policy paradigm that directly linked the expansion of consumer choice with market liberalisation (Curran & Seaton, 2003).

Many of the new licenses granted by the Radio Authority in the 1990s were explicitly targeted towards ethnic minorities, and some were won by prominent former pirates. But most of these had gone bankrupt by the end of the decade and the ones that survived invariably did so by selling on their license and shifting their formats towards mainstream content (Wall, 2000). The problem, as Wall argues, was that policy prioritised reducing costs to local commercial broadcasters through deregulation, whilst little attention was paid to the issue of income. Geographic constraints severely limited the capacity of specialist stations to acquire commercially viable audiences. This exclusive association of specialist/minority stations with *local* radio has been a persistent limitation of UK broadcasting policy (Lewis & Booth, 1989). The paradox of radio regulation in the 1990s was that the very stations who could in principle reach out to disenfranchised audiences were the ones who found it hardest to survive. Consequently, the range of 'choice' began to contract almost as soon as it was introduced.

A question of power

The exclusive emphasis on commercialisation in the 1990 Act meant that the new licenses denoted not liberalisation of resources so much as a *transfer* of control from the state to private hands. More specifically, it marked a shift from a public service dominated model to a

mixed model that increasingly accommodated the interests of large commercial groups. At the same time, crucial elements of state control were preserved. The newly formed Radio Authority was charged with allocating licenses and though successive regulators have been apt to emphasise their role as 'creatures of statute', such conceptions underplay their room for manoeuvre in interpreting legislation. Moreover, the 'shortage of frequencies' has long been used to justify retention of frequency resources but in reality, such 'shortage' is a product of policy at least as much as technical constraints. The UK still has significantly fewer licensed stations operating in major urban areas compared with the USA (Wall, 2000) and the history of radio is littered with temporary departures from scarcity arguments, whenever there is sufficient political will to open up the spectrum (Lewis and Booth 1989).

The dominant view in media political economy is that structural inequalities persist in a 'behind closed doors' approach to broadcasting policy, restricting the forum of debate 'to elites and those with serious financial stakes in the outcome' (McChesney, 1989: 23). At the very least, the conception of policy as a technical disinterested process has been rightly dismissed (Freedman, 2008). This study is compelled to ask whether illegal broadcasting is the expression of *politically* as well as culturally excluded voices - whether contemporary broadcasting policy, for all its efforts to achieve transparency and accountability, remains a form of democratic elitism in which policy makers and major financial stakeholders dominate the 'networks and forums where co-ordinated strategies for public policy are hammered out' (Dunleavy & O'leary, 1997: 63).

This is not to suggest that regulators are entirely captured by private interests or that they intentionally seek to exclude or limit public participation. Even economic theories acknowledge that public consent and legitimation can factor into the utility preferences of regulators (Stigler, 1971; Peltzman, 1976). Nevertheless, there remains a deep divide between stakeholders within policy communities, and those outside of it. The problem was encapsulated in one response to a recent radio policy consultation:

Currently no pirate broadcasters or their listeners know this consultation is taking place. How can the future of radio be decided without sourcing opinions from the actual people who are likely to be involved in radio in the future? (Ofcom, April 2007d).

Research objectives & questions

From the preceding analysis, a set of 3 related starting assumptions can be drawn for this research:

- a) The Value of pirate radio today lies in its capacity to represent and serve marginal music communities under served by licensed broadcasters – in particular the underground urban music scene in London.
- b) Policy is shaped by competing interests – including those of policy makers – and the power relations that underpin the ownership, control and exploitation of broadcasting resources.
- c) Both commercial and community licensing regimes have failed to make significant inroads into the illegal broadcasting sector.

As already noted, the broader task of this research is to understand why the licensed radio spectrum continues to exclude significant minority audiences in spite of liberalisation. In order to tackle this, it is necessary in the first instance to establish the nature of the pirate radio 'problem' and the basis on which policy responses are devised. The first research question therefore asks:

What problems does illegal broadcasting present from a policy perspective?

Given that illegal broadcasting is often the subject of conflicting public and private discourse, and is likely to impact on different sectors in different ways, we can expect a range of possible interpretations of the pirate radio problem.

The research goes on to consider the link between identification of policy problems and the nature of policy outcomes. The second question therefore asks:

How is illegal broadcasting policy determined?

Unlike most targets of regulation and enforcement that fall within Ofcom's remit, pirate radio is a criminal activity. This in itself creates a dichotomy within the policy framework since

illegal broadcasters are at once both criminals and potential stakeholders (in view of the unique service they provide for listeners). This question aims to uncover the key drivers of policy direction; the extent to which it is 'captured' by the interests of legal broadcasters; and the degree of agency attributable to Ofcom with respect to legislative and scarcity constraints.

The third research question relates to a critical analysis of policy and asks:

How effective are policy responses to illegal broadcasting?

This question attempts to uncover the underlying reasons why both enforcement and licensing strategies routinely fail to diminish the presence of pirate radio in London. In doing so, it seeks to evaluate the potential for policy objectives to be met within the existing policy framework.

This leads to the final question of how and where illegal broadcasting fits in to the map of the radio industry. Again, this is unclear given pirate radio's illegal status and its neglect in radio histories that have tended to focus on one or any combination of commercial, public service and community models. This study therefore asks:

Does Illegal broadcasting occupy a distinct space within the political economic landscape of radio?

The focus here is on the hypothesis of a 'grey economy' in which particular legal broadcasters exploit value from pirates and vice versa. This question also addresses the issue of 'grey policy' and the role of the regulator in sustaining or undermining the status of pirates within the 'value chain' of the urban music industry.

In many ways this study is a response to Ofcom's own report on illegal broadcasting (Ofcom, April 2007b). That research was based on an audience study which was appropriate given the research objectives and the fact that pirate radio listeners are a constituency unlikely to be reached through public consultations. But what the research could not offer, and what is lacking from the literature at large, is an appraisal of illegal broadcasting from a political economy perspective and an assessment of the regulator's own role within that context.

Moreover, as will be shown, since publication of that report, illegal broadcasting policy appears to have been sidelined in regulatory discourse, thus mirroring its lack of attention in broadcasting studies. Consequently many of the questions that the report raised have gone unanswered. This study does not attempt to answer those questions so much as uncover *why* they have gone unanswered.

3. METHODOLOGY

The research employs a mixed qualitative method approach. The focus is on in-depth, semi-structured interviews with a broad range of stakeholders engaged in the struggle for radio resources. Textual analysis of interview data was then contextualised by analysis of documents sourced from a combination of online resources and applications under the Freedom of Information Act. What follows is a relatively detailed account of the justification for method selection in view of the nature of the research questions, a reflection on the sampling method and limitations, and an outline of specific research tools employed.

Research design overview

The selection of interviews as the primary method for this research was based on the assumption that discursive practice offers a window into the nature of media power: 'How else are we to trace how the legitimacy of media power is reproduced except by looking very closely for patterns in what people say and do' (Couldry, 2000: 198). Although Couldry was concerned with media power from the point of view of reception, the principle applies equally in relation to policy given the range of 'voices, arguments, actors, arenas and controversies' that shape its outcome (Freedman, 2008: 7).

The task of 'looking very closely' at discursive patterns demands a focus on qualitative rather than quantitative methods since the latter are more appropriate to establishing broad patterns of statistical significance rather than deep contextual meanings. The use of depth interviews was also appropriate given the relatively small populations involved and the fact that some of the subjects are public figures, or representative of public institutions. This requires the interview to reach beyond the content of public relations messages – a task not likely to be achieved by the rigid framework of survey interviews.

In spite of its focus on discursive patterns, the methodology pursued here is distinct from discourse analysis of texts, as it is oriented towards understanding the 'lifeworlds' of

respondents rather than just symbolic meanings (Bauer & Gaskell, 2000). But unlike ethnographic studies, this research is concerned with a range of different milieu – from the head office of Ofcom to the pirate radio broadcast studio - and as such, immersion in one particular social setting would not have yielded the perspectival range it demands.

In view of the public status of respondents, individual rather than focus group interviews were used. This choice was also appropriate given the sensitivities and controversies that surround the topic. Pirate radio's illegal status means that personal associations may be guarded whilst at the same time it is essentially a *political* issue arousing outspoken and passionate views on all sides of the debate. Four of the interview respondents requested various degrees of anonymity which was guaranteed in accordance with standard research ethics and in order to ensure full and frank disclosure (see appendix B). Certain extracts that follow are therefore unattributed although at least a general reference (such as 'commercial lobbyist') was agreed with all participants.

The aim of interviews was not simply to explore what respondents had to say about the topic, but rather to understand the conflicting discourses both between and within different groups. Such conflicts illuminate the complexities at the heart of illegal broadcasting policy and getting to grips with them required a process of active interviewing techniques and a reflexive awareness of the researcher's own role in 'activating' respondents' opinions. According to Holstein & Gubrium, the objective of active interviews 'is not to dictate interpretation, but to provide an environment conducive to the range and complexity of meanings that address relevant issues' (1997: 123). This also required sensitivity to the fact that different ways of phrasing the same or similar question might elicit significantly different responses. For instance, asking a lobbyist how much influence they think they have over policy might prompt a defensive or closed response on the basis that it is perceived as questioning the credibility of the policy process they are a part of. We might expect such a response to assert the existence of a level playing field between stakeholders. On the other hand, asking how *successful they are at getting their message across* might encourage a response that emphasises the relative effectiveness of their own role and seeks to justify a given expenditure of lobbying resources.

A common critique of the interview method stems from this plurality of possible interpretations both in the interview itself (a given question may be interpreted by the respondent in several different ways) and in analysis of texts (a given answer may be

interpreted by the researcher in several different ways). According to this view, it is always possible for a researcher to get the answers s/he is looking for by selecting certain questions over others, or phrasing them in particular 'leading' ways, and then selecting meanings to justify arguments at the analysis stage. However, such critiques imply that there is, behind every question and answer, a hidden 'truth' to be uncovered – a view that overlooks the essentially constructed nature of meanings (Kvale, 1996). Thus, the aim of active interviews extends beyond deciphering definitive viewpoints, to uncovering the full range of *possible* interpretations.

Another common critique of the interview method concerns its limitations in the context of generalisability. For instance, how do we know that opinions expressed by a pirate DJ are representative of the pirate radio community as a whole? How can we relate them to broader contexts if they are in essence merely the reflections of one individual at a given moment in a particular setting? But these questions stem from the application of quantitative validity criteria to a qualitative study. The very distinction between quantitative and qualitative methods implies a difference in the way in which evidence and argument are used to validate findings. Thus in qualitative studies, the emphasis is not on the generalisability of findings, so much as the extent to which they make the theory more convincing (Coudry, 2000). This necessitates the explicit application of research questions and hypotheses to interview texts (Kvale, 1996).

Though interviews formed the basis of the research design, findings were also contextualised by reference to secondary data and document analysis. This served three distinct functions. Firstly, it provided a bridge between interview texts and theory: additional data relevant to research questions but not yielded from interview texts were sourced through this method. Secondly, documents were used to corroborate key data that was yielded through interview texts and vice versa. For instance, links were established between the recounts of policy considerations offered by Ofcom respondents and relevant meeting minutes. Finally, this method was used to aide a survey of the FM dial through cross reference of identified stations (see appendix A).

Sampling and selection

Given the research focus on policy, two broad populations were identified: policy makers and lobbyists/activists. For the purposes here, policy makers were taken to denote regulators involved in illegal broadcasting policy, whilst lobbyists/activists refer to those who are active in the struggle for radio resources, be they industry professionals, pirates or community campaigners. In practice however, this distinction is a blurred and contentious one, not least because it implies a degree of distance between policy decision making and those who seek to influence it.

In terms of policy makers, respondents were sought from relevant departments within Ofcom whilst lobbyists/activists were sought from the commercial, public service, community and illegal sectors. Interviews were secured with three Ofcom personnel, two pirate radio DJs, two commercial lobbyists, one community radio activist and an executive producer at BBC's flagship urban music station 1Xtra. In addition, a brief interview was conducted with a radio electronics engineer in order to provide a technical overview of some of the key issues – particularly in respect of frequency planning and digitalisation (see appendix B for a full list of interviewees).

The selection of documents was made in the first place by conducting relevant searches of publicly available on line resources – principally on the websites of Ofcom and the Department for Culture, Media and Sport. These yielded a range of press releases, consultation documents, research reports and meeting minutes. They were supplemented by specific documents and data requested in two applications under the Freedom of Information Act made in April and June 2009.

Challenges and limitations

Given the time limitations of the study, it was not possible to select the full range of respondents relevant to the research topic. For instance, within the commercial sector, such a range would have included representatives from both local independent stations and conglomerates. For the purposes here, one respondent was selected from a commercial radio group whilst the other was head of external affairs at the Radio Centre, representing the commercial sector as a whole. Gaps in the sample were also supplemented by document analysis which provided an insight into the positions of local commercial stations through secondary sources.

Perhaps the most formidable challenge however, concerned adapting interview conduct in accordance with the radically different social worlds that respondents inhabit – particularly between policy makers and illegal broadcasters. This required in certain cases adapting not only specific questions to particular respondents, but also the language and medium through which the interview was conducted. Whilst most interviews were conducted in person or over the telephone, one pirate DJ requested to be interviewed on the internet via an instant message facility (IM). This medium offers distinct advantages and disadvantages from a research perspective. On the one hand, characteristic time delays between exchanges enable both questions and answers to be more considered than in face to face or telephone interviews. On the other hand, IM interviews do not capture rich data that might emerge from more spontaneous responses and invariably questions do not elicit responses that are as full and wide ranging as in face to face or telephone exchanges. Nevertheless, the task of understanding the 'lifeworld' of respondents necessitates communication in a medium that they feel comfortable with (Hine, 2000), and the real time nature of IM still allowed for a degree of flexibility and a conversational element essential for the conduct of active interviews.

Research tools

Topic guide versions were drafted according to 3 categories of respondents: policy makers, legal stakeholders and pirates. These were revised and refined on a continuous basis and tailored to specific respondents and settings. It was also considered important to avoid a rigid linear time frame in conducting the various stages of the research. For instance, one follow up interview was conducted after further questions emerged from analysis of the original transcript. However, it was equally important to ensure that interview questions remained relevant to the core research objectives (see Table 1).

Table 1. Research and Interview Questions

Research Q	Policy Makers Q	Legal Stakeholders Q	Pirates Q
<i>What problems does pirate radio present from a policy perspective?</i>	Who is affected the most by pirate radio?	Can you distinguish between 'good' and 'bad' pirate stations?	Is there a problem of diversity within the licensed radio spectrum?
<i>How is illegal broadcasting policy determined?</i>	What is the process of reviewing and deciding on a license application?	How regularly do you interact with Ofcom?	Is the licensing process fair and accessible?
<i>How effective are policy responses to illegal broadcasting?</i>	Is the community license scheme working for London?	How much of a threat/deterrent is enforcement?	If you were Ofcom, how would you play it?
<i>Does illegal broadcasting occupy a distinct space within the political economic landscape of radio?</i>	Who benefits from pirate radio?	Do pirates compete for audience/advertisers or do they operate in distinct sub markets?	Is there any money in pirate radio?

Analysis was conducted in three stages. First, all interviews were transcribed with extracts relevant to the theory highlighted. These were then organised thematically under sub-headings allocated to each of the research questions. Finally, secondary data and documents were referenced in order to further refine thematic headings and to identify the most important theory relevant extracts.

4. DISCUSSION AND FINDINGS

The results below are discussed in relation to the relevant research questions and sub-themes. Quotations were selected from highlighted extracts of the transcript according to the following relevance indicators: repeated emphasis by the respondent; corroboration with other respondents; corroboration with secondary data or documents; relevance to the theory (as embedded in the research questions and identified themes).

Regulatory problems

This question may be addressed in two distinct ways concerning problems that result *from* illegal broadcasting, and problems that result *in* illegal broadcasting. With regard to the former, Ofcom's over-riding concern with illegal broadcasters, expressed in both interviews and public statements, is the problem of interference. This may be expected given the self-ascribed label of an 'evidence-based regulator'. Interference caused by illegal broadcasters is relatively easy to detect and, according to respondents, forms the basis of complaints received from emergency services, licensed stations and members of the public.

Although interference with emergency services presents the most 'critical' problem from a regulatory perspective, it was pointed out that community stations are most vulnerable to pirates in view of their relatively short range and low output signals. It is perhaps not surprising then that pirate radio has mutated from ally to 'the enemy of community radio' (Donald McTernan, Community radio activist).

Commercial lobbyists echoed concerns over interference but also emphasised problems associated with spurious criminal activity and offensive content, and highlighted illegality as a 'problem' in itself:

In the end I think you've got to see that they are ultimately all illegal. It is an illegal activity which – however decent they're being on air, however much they're following rules, or if they're not involved in any other criminal activity – it's still using spectrum illegally. (Alice Dickerson, Radio Centre)

Whilst Ofcom representatives did not contradict this view, they did mark a distinction between 'good' and 'bad' pirates:

I think it's important to realise that the organisations which undertake illegal broadcasting actually operate across quite a broad spectrum. On the one hand

you've got people who are doing it because they enjoy what they are doing, who love music generally, they take a responsible attitude, they try to minimise interference that they cause, and they try to work with the community – the local community within which they operate as well as the audience for that particular station [...] then right across the other end of the spectrum you have some illegal broadcast stations that have attracted the interest of, and indeed are run by career criminals. (Jim McNally, Ofcom)

This distinction raises difficult questions concerning license regulation and enforcement. Should the regulator take on board the fact that at least some illegal broadcasters make a positive contribution to the cultural diversity of radio output? Should they discriminate between illegal broadcasters who are to be consulted as stakeholders and those who are to be targeted as criminals? If so, who determines this and how? And if not, how can Ofcom's role as spectrum 'enforcer' be reconciled with their mandate to consult widely with all relevant stakeholders? These questions are addressed further below.

The dichotomy derives from the fact that as well as addressing the consequences of illegal broadcasting, the regulator's remit demands attention to its underlying causes. In this context, not surprisingly, pirates tended to stress the incapacity of legal stations to support specialist new music formats. Content that is limited to weekly late night broadcasts on legal stations is aired '24/7' by pirates. This view conforms to the emphasis in both the literature and the findings of Ofcom's audience study: that pirate radio is concentrated within music genres for which there is unmet listener demand.

The most radical perspective however, was expressed by a BBC executive producer who questioned the very conception of illegal broadcasting as 'problematic':

I'd say that pirate radio is a really important part of black music culture, always has been. Most of our DJ's at some point have played on pirate radio [...] So I'd say that it feeds into what we do and runs alongside it. I don't see it as a problem at all. (Rebecca Frank, Radio 1Xtra)

This view is not necessarily representative of the BBC as a whole and the respondent pointed out that such a standpoint owes much to the 'luxury' of the BBC's guaranteed funding source. But even commercial lobbyists acknowledged the problem of spectrum diversity and in one response, the potential positives of illegal broadcasting were extolled:

Maybe [pirate radio] isn't a bad thing in terms of the contribution they make in music and providing an opportunity for young people who don't have access to student or hospital radio, of which there must be many.

This respondent also acknowledged that urban music DJs on legal commercial stations tended to have both a background in, and retained links with the pirate community. Crucially however, the above statement was preceded by the caveat 'this is me talking now, this isn't the view of [my company] or commercial radio'. Conflicting discourses regarding pirate radio should not therefore be viewed solely as a contest in the struggle for resource advantage between different sectors: they are also internal within particular organisations. In a commercial radio group for example, there may exist tensions between public and private positions, between individual and institutional perspectives, and between executive and creative personnel.

Policy determinants

In recent years, new licensing opportunities within the London area have all but ground to a halt as a result of relative spectrum scarcity. This issue was repeatedly referred to by Ofcom representatives in terms of its constraining influence on illegal broadcasting policy. Initially, the lack of available frequencies for London was cited as a purely technical issue, determined by planning engineers and adhered to by policy makers 'because that's the basis on which the whole system is given' (Lawrie Hallett, Ofcom).

However, in a follow up interview, this topic was pursued in more depth and responses revealed a more complex picture:

We say correctly on our terms that there are no frequencies – but it does depend on what engineering standards you work to. Our engineers work to internationally agreed planning standards – but by no means all countries work to that. And I think the standard we work to is quite conservative'. (Ofcom representative)

It would appear then, as the literature suggests, that spectrum scarcity is a political as well as technical issue. The preponderance of illegal stations broadcasting with strong signals in London indicates that there remains at least a degree of under-used spectrum on the FM dial.

In addition to spectrum scarcity, Ofcom respondents stressed the policy limitations imposed by relevant legislation:

It's not within the bounds of legislation for us to say 'there is a problem that the sector as a whole is not providing this type of output, we will therefore prioritise the provision of that output'. We have to look at applications for licenses and we have to say which of these license applications, within the limited spectrum of resources that we have available, [...] best meets the requirements of the legislation'. (Lawrie Hallett, Ofcom)

Other findings however, revealed two key areas in which Ofcom does exercise policy leverage with respect to the legislation. Firstly, as evident in the response below, the awarding of new licenses does not simply involve weighing up applications to the statutory criteria, but weighing up the criteria themselves:

With every license that was advertised we said in the points that we would give particular ratings to particular criteria. And I think that was true with more or less all of the licenses that we did. (Ofcom representative)

Secondly, it is within Ofcom's remit to determine the coverage area of a given license. To illustrate the policy leverage this entails, let us consider a fictional example. Suppose a new music genre has emerged in recent years called 'wave' and it is not currently aired on licensed stations. Radio X, a pirate station broadcasting with a 10 kilometre radius in London has tapped in to this new audience and is turning a profit with proceeds from advertising and live events. The migration of a commercial station to the digital radio band DAB has freed up sufficient spectrum in London for 1 new license with a 10 kilometre coverage radius, or 2 new licences each with a 5 kilometre radius. Under the existing commercial licensing rules, Radio X would score highly on all criteria if it was to apply for a 10 kilometre license. But it would fail to meet the economic viability criterion for a 5 kilometre license as its existing audience would be cut in half. However, two other prospective community stations might successfully meet the criteria for 5 kilometre community licenses and win public funding in accordance with the community legislative provisions. The point here is not to suggest that 'wave' music would offer greater public value than community radio services, but simply that the decision on how to allocate a given section of available frequency is intimately linked to how particular types of output are prioritised.

So far, I have assessed two key restraints on illegal broadcasting policy imposed by the statutory and planning criteria and suggested that in spite of these restraints, Ofcom operates with a greater degree of autonomy than the regulatory discourse suggests. With regard to enforcement – the 'stick' element of illegal broadcasting policy – Ofcom arguably enjoys even greater autonomy to the extent that it determines both the strategy and the level of allocated resources without recourse to public or political consultation. Notably, enforcement expenditure increased from 16% to 25% as a proportion of Ofcom's overall budget between 2007/8 and 2008/9.

Informal consultations with commercial lobbyists were also found to be an endemic feature of the policy process. According to one Ofcom representative, this is a function of the day to day contact 'necessitated' by the regulator-licensee relationship, a view that was repeatedly corroborated by commercial lobbyists:

People like myself deal with the guys at Ofcom on a day to day basis and I think when you have that day to day contact, you realise that this is an organisation driven by people the same as that we are. I don't want it to sound sinister or in any way backhanded when I talk about informal conversations [...] But there are channels for making commercial views known and there are formal channels for us to contribute to a consultation process and it works in the rounds so far as I can see - those two parallel relationships work together very well.

This statement suggests that the working relationships that develop out of 'day to day' contact result to some extent in the development of shared identities and perspectives. The same respondent also referred to pre-existing professional ties between regulators and commercial radio executives, many of whom have worked together 'for many years'. This link between informal channels of access and shared identities and experience raises question marks over the transparency and accountability of broadcasting policy.

Thus, the 'behind closed doors' approach to policy making may be considered in two contexts. Firstly, Ofcom is less constrained by technical and legislative issues in enforcement compared with licensing, enabling wider scope for 'informal' policy making not subject to public consultation. Secondly, day to day contact between the regulator and commercial lobbyists results in an informal channel of access that is beyond the reach of public scrutiny and 'supplements' formal channels provided by public consultations.

There is however, some evidence to suggest that more established illegal broadcasters also engage in 'informal conversations' with Ofcom. According to the manager of Rinse FM, a leading pirate within the urban music scene,

I'm talking and having correspondence with [Ofcom] on a fortnightly basis. What we're saying is that we aren't going anywhere and you can't get rid of us, so shouldn't we be working with you to make our broadcasts as safe as possible? (Quoted in Sauma, 2009).

This was corroborated by a pirate DJ during interviews for this research, suggesting there may be more to awarding licenses than the formal application procedure. Ofcom representatives argued strongly that such contact did not amount to policy negotiation or a compromise in the credibility of the license application process. In any case, the extent of contact is unlikely to rival that of commercial groups for whom discussions often take place during a 'station visit' or 'lunch' rather than a phone call or email.

Policy effects

The failure of the commercial licensing scheme to make in-roads into the illegal broadcasting sector was readily acknowledged by policy makers who stressed the commercial inviability of specialist music formats as the root cause of the problem. This was echoed by commercial lobbyists:

Transmission over a given area costs a certain amount and if there are only a small number of people in any given geographic area that have that niche interest in your music, you are never then going to make a enough money to make that station viable.

The key phrase here is 'any given geographic area'. Though 'underground' and minority audiences may be concentrated in major urban areas, they are in essence dispersed communities of interest rather than geographically bound groups. Consequently, the more local a specialist station is, the less commercially viable it becomes. Clearly, across a city the size of London, there are significant audiences for specialist tastes and genres. But the inability to attract commercial scale audiences within small transmission areas threatens to disenfranchise those audiences. In this sense, local radio licensing is akin to a 'first past the post' system of spectrum representation.

There are of course compelling reasons for policy to promote local radio, not least recent research that points to strong public support for local area programming

(Ofcom, November 2007b). The problem however, is that demand for more diverse services has been *equated* with demand for more local services, when in practice they are often distinct, demanding apportionment of frequency allocations accordingly.

Community licensing, in its even greater emphasis on small scale local radio, shares similar limitations to commercial licensing regarding its capacity to attract pirates into the legal spectrum. The significance of geographic limitations is evident in the following extract from a pirate radio DJ:

To be honest I don't think from experience that many [pirates] are that interested in a community license because then they're going to be within guidelines. You wouldn't be able to broadcast as far as you would normally. I mean some stations get out so far it's unreal. They go way past the legal stations, right outside the M25 even down to the coast – Southend you can pick them up.

But community licensing is arguably even more limited than commercial licensing in view of the additional criteria that ensure the non-profit status of stations. Most illegal broadcasters are in effect commercial entities partly because, in the absence of other funding sources, that is their only means of survival; partly because the unmet demand left over by the legal spectrum presents commercial opportunities for illegal stations; and partly because the service that most pirates provide is best characterised as entertainment rather than community oriented. As Donald McTernan observes:

I know a lot of [pirates] call themselves community stations but they're really commercial [...] The vast majority of pirate radio DJs and stations are there to play music and entertain people. The community radio license doesn't allow that and in some ways its bureaucracy prevents people from switching over.

The reference to 'bureaucracy' hints at a further limitation in licensing policy generally - namely that the administrative requirements of 'going legal' are often beyond the resources, skills and expertise of pirates who are unlikely to have had any formal industry training. They may also impact on the sense of freedom that is a key driver for illegal broadcasting from a producer perspective:

I don't think anyone would really feel the same as being on pirate. On pirate it's free – not as in free money – but you're free to do what you want within reason. You can play what you want within reason and you're not restricted. (Pirate DJ)

This raises the question of whether the 'value' of illegal broadcasting, as perceived by producers, could ever be recreated within a legal environment. All respondents expressed varying degrees of doubt over this prospect. But the fact that many illegal stations *do* want to go legal – including prominent pirates like Rinse FM – is beyond doubt. The effectiveness of the licensing system must therefore be judged by the extent to which it is able to include such stations. Although proportionately few community licenses have so far been awarded to the London area, the intense local focus and restrictive funding criteria of the license does not bode well for its potential to attract pirates.

So long as there are pirates who resist legality *per se*, enforcement remains an appropriate element of illegal broadcasting policy. That it is severely hampered by technical and budgetary constraints however, was a unique point of consensus amongst respondents. Technology has reduced the cost of transmission equipment and distribution over the internet has made it easier and quicker to acquire new aerials. This has served to minimise the impact of confiscation which is often the only option available to enforcement operators, given the capacity of pirates to broadcast remotely from their transmitters (Ofcom, May 2009). Ofcom press releases tend to highlight the number of transmitters seized, which although often an impressive sounding figure, obscures the minimal deterrent that confiscation poses (Ofcom, April 2005). As one pirate DJ observed, 'you could take us off on Monday night and the chances are we'd be back on easily Tuesday morning [...] Everyone has back up rigs'. Even when Ofcom succeeds in shutting down a particular station and securing convictions of pirate broadcasters, the frequency vacancy left behind is likely to be quickly filled, particularly if it is 'considered a good spot in the spectrum' (commercial lobbyist).

Such technical constraints are related to budgetary constraints insofar as they necessitate sustained and widespread enforcement operations in order to have any measureable impact. Each of these operations requires Ofcom to hire the services of the police in addition to its own personnel in resource-intensive campaigns. Recently, increasing attention has been given to targeting the illegal trade in transmission equipment (Ofcom, May 2009), although whether this will have a substantial effect remains to be seen.

Overall, enforcement is an increasing priority for Ofcom as reflected in a proposed 'twin pronged strategy' that involves 'both vigorously pursuing enforcement activities and also looking at new ways of making enforcement policies more effective' (Ofcom, September 2007b). But what is increasingly absent from the regulatory discourse is consideration of wider policy options related to licensing despite stated intentions following the illegal broadcasting report:

'The proposed discussion document circulated as Board Paper 188(07) included both enforcement strategies and possible policy options to help address the problems of illegal broadcasting' (Ofcom, September 2007a).

According to one Ofcom respondent, this included consideration of a 4th tier of license to be recommended to the government, with a view to overcoming the limitations of both commercial and community licenses in attracting pirates. However, such options did not materialise into a public consultation in contrast to public statements (Ofcom, April 2007a). One reason cited was the lack of a 'political will' for new legislation given the relative infancy of the community radio project and the current focus on digital radio policy.

Nevertheless, it was made clear in April 2007 that consideration would be given to 'a wide range of options beyond enforcement' and the work would be 'separate from' that which underpinned the Future of Radio consultation (Ofcom, April 2007b). In the event however, it was not only subsumed within this consultation, but took up less than 1 page of the 250 page final report (Ofcom, November 2007a). Within this, the only broader policy suggestions beyond enforcement concerned a proposed simplification of the community license criteria and 'increased flexibility regarding community radio coverage areas'. With regard to the former, recommendations were made to simplify criteria that arguably pose the least obstacles to illegal broadcasters since their very existence is to some degree evidence of their ability to meet them (catering for tastes and interests, broadening of choice, and evidence of demand). On the other hand, proposals concerning the crucial issue of coverage area merely involved a commitment to 'consider the requirements and aspirations of the community radio sector alongside those of other broadcasters' (Ofcom, November 2007a: 98). This hardly amounted to a radical, if any change in the basis on which frequency vacancies are allocated.

According to Donald McTernan, the marginalisation of the illegal broadcasting issue has left a policy 'void' as much as stalemate:

There's no monitoring of what's going on. There's no attempt to engage with what's going on. There's no meetings to discuss how to address it. There's no policy.

Political economy of illegal broadcasting

Aside from the structural restraints on legal broadcasters in meeting the demands of underground audiences, there are specific reasons why illegal stations, free of commercial and regulatory restrictions, can reach those listeners in abundance. For one thing, pirate stations are by their nature 'closer to the ground' of the urban music scene. Like the DJ's that play on them, stations are often founded and run by urban music enthusiasts who are active more widely within 'the scene'. Many are involved in live events which are promoted heavily on the stations. These links provide two distinct economic advantages. Firstly, they enable stations to respond quickly to, and influence demand for new music. As one pirate DJ observes, '*People want to listen to pirate because they want the underground sound. They want the newest stuff out*'.

As a consequence, demand patterns are constantly shifting and the intimate involvement of pirate stations in the scene provides crucial access to audiences beyond the reach of corporately owned stations. For the latter, demand for 'novelty' content is inherently both unstable and unpredictable. For pirates however, personal affinity to and immersion in the scene provides both the will and the means to take experimental and innovative risks on content.

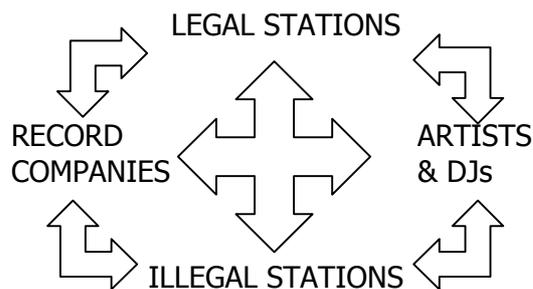
The second structural advantage afforded by the cultural links between producers and their audiences stems from live events - a crucial source of revenue for illegal broadcasters. Indeed, in many cases, stations are run as 'loss leaders'. This reduces the dependency of pirates on advertisers. Commercial stations can rarely afford to risk alienating their existing audience and hence advertiser base by airing 'untested' content. The economic advantage of pirates relative to legal stations is further enhanced by the avoidance of license fees, tax and other administrative costs that come with owning a license (although this is counter weighted to some extent by costs relating to evasion).

The above analysis suggests that the markets for underground and mainstream urban music are distinct. In reality however, there exists significant overlap. This derives principally from the role of underground music scenes as a source of new content for the mainstream music and broadcasting industry. Large-scale commercial stations seek to offset their detachment from the underground scene by recruiting DJ's and selecting content directly from the pirate network. The relative resource advantage that commercial stations possess enables them to 'hand pick' the most popular DJ's, artists and songs from the underground, thereby avoiding the risks associated with broadcasting untested content. It is the capacity to innovate that gives pirates their unique position in the production chain of the urban music industry. As one pirate DJ observed,

Some of the stuff I was playing going back to the early 2000s was in the charts years later. The pirates won't play it no more because it's old and gone. They're on to the next stuff.

The value that is generated by pirate radio for commercial stations is to some extent reciprocated by the fact that pirates are credited with 'breaking' new music, thereby increasing their appeal to artists, producers and audiences alike (see figure 1).

Figure 1: The Cycle of Value within the Urban Music Industry



New artists and DJs provide content for illegal stations who in turn offer a platform for wider recognition within the industry; illegal stations provide record companies and legal stations with 'tested' content, who in turn offer credibility and value incentives for pirate DJs and artists.

The overlap between public service and pirate audiences is arguably greater since the BBC is able to take more risks on specialist content than their commercial counterparts. The emergence of digital platforms has enabled dedicated specialist stations such as Radio 1Xtra and as a consequence, minority and specialist programming is no longer limited to 'ghetto slots'. But the BBC is still unable to specialise to the same extent as the pirate sector which can support not just 'urban music' stations, but stations dedicated to specific and evolving sub-genres. Nevertheless, the relative degree of audience overlap is such that pirates are perceived as both competitors and 'collaborators':

We're all serving the same audience and striving to do similar things in terms of our music policy and creating a platform for under-served audiences. (Rebecca Frank, Radio 1Xtra)

One of the consequences of pirate radio's entrenchment within the value chain of the urban music industry has been a professionalisation of established pirate stations. This has resulted in a degree of self-regulation, partly as a means of avoiding enforcement:

The rules on certain stations I've been on up to this day are unreal. The rules you have to keep to – even though it is illegal radio. You can't swear, even down to the music can't be very loud. Not only because it will make the station sound awful, but it's just another reason for the authorities to moan. (Pirate DJ)

Several respondents, including legal broadcasting representatives, corroborated the view that Ofcom effectively turns a 'blind eye' to more established and 'responsible' pirates. Certainly the endurance of established pirates such as Rinse FM, which celebrated its 15th year of broadcasting during this research, suggests that enforcement to date has been largely oriented towards containment rather than eradication. Such a strategy is appropriate given resource limitations and the need to prioritise 'reactive' operations. It does however effectively discriminate between larger, established stations and smaller newer pirates who tend to be the more common cause of complaints.

Officially however, Ofcom's current enforcement strategy is not solely aimed at those who cause interference or broadcast offensive content, but divided between 'reactive' and 'proactive' operations. The latter target 'particular stations or groups of stations and conduct sustained enforcement action which is aimed at putting them out of business'. Targets are determined according to indicators such as

revenue, reputation, coverage area and extent of frequency resources used (Ofcom, May 2009). The language suggests that it is the larger and more established pirates that are the focus of proactive operations. It is not clear however whether proactive operations will be increasingly prioritised as part of an invigorated enforcement policy. In response to a Freedom of Information request, Ofcom were unable to provide a breakdown of enforcement costs between proactive and reactive teams because it 'does not divide its expenditure' in that way.

If proactive operations are increasingly prioritised, this will risk further marginalising pirate stations and their audience from the policy process. On the other hand, focussing on reactive strategies risks reinforcing the power relations that sustain established pirates without giving attention to how they may be included within the legal spectrum.

5. CONCLUSION

Illegal broadcasting policy is in some respects a 'closed door' exercise. This is partly a function of the regulator's legislative responsibility for enforcement which is resistant to openness and transparency. It is also a product of ritual informal consultations with legal broadcasters that characterise the working relationships between regulators and licensees. Though it does not prove that policy has been hijacked by the interests of legal broadcasters, or that policy makers seek to exclude public participation in the policy process, it does suggest structural inequalities in access; that the 'process' is neither as formal nor accountable as the regulatory discourse suggests; and that in certain respects, policy may be considered devoid of process all together.

What seems certain is that policy, whether manifest as 'action' or 'inaction', by conscious agency or unintended consequence, plays a critical role in determining the scope of illegal broadcasting. Despite legislative and resource constraints, Ofcom has considerable leverage over policy and its inherited conservative approach to band planning and licensing has preserved the playing field in which pirates operate.

The prevalence of illegal broadcasting also owes much to political economic factors that have likely contributed to the current policy stalemate. Established pirates in particular routinely engage in relations of mutual benefit with certain elements of the legal broadcasting network. The concept of a 'cycle of value' was used as an analytical tool to illustrate the entrenched position occupied by these pirates within the production chain of the urban music industry.

A lack of both commercial and political will for new licensing models limits the potential to break the current policy deadlock. Instead, considerable faith has been placed in the digital promise of released spectrum on the FM band. However, given the seemingly relentless pirate demand for frequency resources and technical constraints that limit their potential to tap into digital platforms, it is unlikely that released FM spectrum on its own will have a significant impact. If anything, it risks increasing the number of illegal stations and threatening the sustainability of an 'ultra local' tier of legal radio – the current 'promise' of digital radio policy (DCMS 2009). In the absence of radical licensing alternatives, current policy therefore risks repeating the mistakes of history, by relying on the assumption that more services will necessarily broaden spectrum diversity and representation.

Limitations and possibilities for further research

This research touched on, but did not explore in depth the policy complexities that derive from attempting to pursue both enforcement and engagement with 'criminals' that run established pirate stations. Intention to pursue the latter was expressed in a meeting of the Ofcom Board of Content in 2007:

Suggestions were made for contacts who could be asked to speak directly to 'hard core' illegal broadcasters to gauge interest in the likely take-up of the proposed community radio licensing option and alternative approaches (Ofcom, September 2007b).

Time limitations and a focus on interviews were insufficient to gain a deep understanding of the scope of this engagement - an issue that was judged to be of particular sensitivity from the interviews conducted. Further research might employ ethnography either in the domain of policy making or within an established pirate station in order to further tackle this question. This study is also relevant to broader areas of research aimed at assessing policy in respect of grey economies in which legal and illegal industries are mutually dependent.

Another question left unanswered by this study concerns the reasons why pirate radio continues to be the preserve of urban music and ethnic minority audiences. Whilst this research employed an analytical distinction between underground, niche and mainstream music, it did not address the issue of pirate radio *culture* and the political and social networks that give rise to urban music's dominance of the pirate network.

The role of pirates in the digital radio world has also not been assessed and further research might aim to probe political and cultural associations between broadcasting piracy and illegal file sharing. The findings here certainly suggest that the digital future does not herald an end to the policy issues that illegal broadcasting presents. Internet radio may be license-free, but the race to control networks and the expansion of digital copyright regimes threatens to inhibit the cultural 'commons' in which pirates operate (Lessig 2002, 2004; Wall, 2004). In this sense pirates on air and online fulfil a comparable role – enabling the distribution of culture free from corporate or state control and providing a space for innovation and diversity beyond that which is facilitated within legal domains.

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APPENDIX A – London Stations

The following is a list of stations identified in a scan of the FM dial in Haringey, North London on 26th July 2009. An automatic tuner was used to detect stations broadcasting with a clear signal. Station names and formats were identified from the broadcast. Legal stations were cross referenced with Ofcom sources (<http://www.ofcom.org.uk/radio/ifi/rbl/formats/>)

Frequency	Station Name	Type	Format
87.5	Maakora	Pirate	Ethnic/religious
87.7	Heightz FM	Pirate	Dance/electronica
88	Entry FM	Pirate	Urban music
88.2	Rude FM	Pirate	Urban music
88.6	House FM	Pirate	Dance/electronica
88.8	Radio 2	BBC	Pop/Rock
89.4	unknown	Pirate	Dance/electronica
89.6	Obsession	Pirate	Urban music
89.8	Station FM	Pirate	Urban music
90.6	unknown	Pirate	Dance/electronica
90.8	Lightning FM	Pirate	Urban music
90.2	Point Blank	Pirate	Dance/electronica
91.3	Radio 3	BBC	Classical
92	NuSound	Community	Community
92.2	Metro Love Radio	Pirate	Urban music
92.7	Freeze FM	Pirate	Urban music
93.2	Radio 4	BBC	News/talk
93.8	Vibes FM	Pirate	Urban music
94	Touch FM	Pirate	Urban music
94.3	unknown	Pirate	Religious/ethnic
94.6	Kool FM	Pirate	Urban music
94.9	Radio London	BBC	News/talk
95.1	Origin FM	Pirate	Urban music
95.5	On FM	Community	Community
95.8	Capital FM	Commercial	Pop/Rock
96.5	Love FM	Pirate	Urban music
97.3	LBC	Commercial	News/talk
97.9	Passion FM	Pirate	Dance/electronica
98.1	Mystic FM	Pirate	Urban music

98.3	One FM	Pirate	Urban music
98.5	Radio 1	BBC	Pop/Rock
99.1	Hav It	Pirate	Urban music
99.6	unknown	Pirate	Religious/ethnic
99.8	Millennium	Pirate	Urban music
100	Kiss FM	Commercial	Urban music
100.2	True FM	Pirate	Urban music
100.4	Rinse FM	Pirate	Urban music
101.1	Naija	Pirate	Community
101.8	Bizim	Pirate	Community
102	Chillin FM	Pirate	Urban music
102.2	Smooth FM	Commercial	Jazz
102.4	Wax FM	Pirate	Urban music
103.6	Dost FM	Pirate	Community
104.2	unknown	Pirate	No broadcast
104.4	Resonance FM	Community	Community
104.7	Sub Jam	Pirate	Urban music
104.9	Xfm	Commercial	Pop/Rock
105.2	Flames FM	Pirate	Urban music
105.4	Magic FM	Commercial	Pop/Rock
105.6	unknown	Pirate	Urban music
103.3	LGR	Commercial	Community
106.2	Heart FM	Commercial	Pop/Rock
106.5	Force FM	Pirate	Urban music
106.7	Bless Me	Pirate	Urban music
106.9	Conscious FM	Pirate	Urban music
107.1	Choice FM	Commercial	Urban music
107.3	Attitude	Pirate	Urban music
107.8	Jackie	Commercial	Community
105.8	Absolute FM	Commercial	Pop/Rock
108	unknown	Pirate	Dance/electronica

Notes

There is considerable overlap in formats particularly between urban and dance music categories. For the purposes here, Urban Music includes the following identified genres: RnB, Garage, Hip Hop, Reggae. Dance/Electronica includes: House, Drum n Base, Jungle, Techno.

APPENDIX B – Interviewees

Name	Title/Role	Organisation
Lawrie Hallett	Executive, Radio Policy	Ofcom
Jim McNally	Spectrum Investigation Policy Manager	Ofcom
[Anonymous]	[Anonymous]	Ofcom
[Anonymous]	Head of Compliance & Regulatory Policy	[Commercial radio group]
Alice Dickerson	Head of External Affairs	Radio Centre
Rebecca Frank	Executive Producer	BBC Radio 1Xtra
Donald McTernan	Community Radio Activist	N/A
[Anonymous]	Pirate Radio DJ	[Anonymous]
[Anonymous]	Pirate Radio DJ	Rinse FM
Adrian Pickering	Radio Electronics Engineer	University of Southampton

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