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REPRESENTATIONS OF THE KNOWLEDGE ECONOMY: Irish Newspapers' Discourses on a Key Policy Idea

Brian Trench

Introduction

FROM TIME TO TIME, notions take hold in society in such a way that they become reference ideas across diverse social sectors, and terms associated with these reference ideas proliferate in public discourses and media of various kinds. This is notably true for the 'knowledge economy' and 'knowledge society'; these terms have largely displaced other terms to describe the particular character of advanced economies and societies in the early 21st century. Other terms have struggled to co-exist: 'information society' seems passé; 'services society', 'audit society' and 'risk society' are marginal or niche terms; 'innovation society' has had intermittent periods of prominence.

The main purpose of this paper is to examine how 'knowledge society' and related terms have been adopted and adapted in media discourses. Much media work involves the processing of vocabulary, phrases and concepts that originate in restricted intellectual and cultural domains, making this language accessible to wider audiences. In this way, journalism can be said to be often intertextual or interdiscursive (Fairclough, 1995): depending on the subject matter, it may bring together the language of everyday with, say, the language of technology or economics. In some cases, the seams between these languages or discourses may be very visible; in other cases, they may disappear over time. Strong examples of the latter can be found in media coverage of the environment where terms originating in environmental science have been assimilated into the vernacular – climate change, global warming, carbon footprint, and so on. Marks of their assimilation are the use of these terms without attached explanations, their use in what we might call the natural language of journalism, and their use in contexts other than the formal reporting of developments in environmental science.

Before engaging with the detail of how such discursive engagements have worked out in relation to 'knowledge society', it seems necessary first to sketch some of the history of this concept in academic and policy discourses. This brief examination will demonstrate that the concept emerged into wider usage with many qualifications and interrogations surrounding it. Against this background, it becomes interesting to see how media – in this case, Irish-published newspapers – take account of the uncertainties around the meaning of the phrase.

Shifting Terms of Policy Debates

It is little over a decade since the concept of 'the information society' and a policy focus on 'innovation' were holding all the attention now accorded to 'the knowledge

society'. In 1996, the Organisation for Economic Co-operation and Development (OECD, 1996) helped shift the attention of governments and inter-governmental institutions to the demands of the knowledge-based economy. In 2000, the EU adopted the Lisbon declaration committing itself to become 'the most dynamic knowledge-based economy in the world' by 2010. That phrase has been very frequently cited in policy statements of the EU and its member states throughout the present decade.

The concept of the knowledge society derived very largely from the discussion of knowledge management in enterprises. Peter Drucker, the influential management theorist, is widely credited with the major role in establishing the concepts of knowledge workers, knowledge management and knowledge company. Drucker and many who followed him drew attention to the increased contribution to businesses of information processing and technologies, in particular to their role in replacing certain categories of manual and routine labour. But the argument was also extended to national economies, and to the increasing weight within developed economies of industries and services based on processing information or knowledge, sometimes called the knowledge sector. In the late 1960s Drucker (1969) anticipated that the knowledge sector in the United States would account for one half of total national product, and declared, 'we have changed into a knowledge economy'. Thurow (1996) followed up by stressing the competitive potential and central role of knowledge: 'Today knowledge and skills now stand alone as the only source of comparative advantage. They have become the key ingredient in the late twentieth century's location of economic activity.'

The elision from enterprise to economy carries with it the implication that the diversity of activities, values and needs of often complex societies can be reduced to those of production and business management. This elision takes a particular form in Ireland, where policy-makers frequently refer to Ireland Inc. to encompass the whole society and to stress the perceived need to reorient social sectors to the demands of economic development. This has been seen in educational policy development: in the 1970s, new institutions, agencies and curricula were established in Ireland to ensure adequate supply of technical personnel to run and service processes in high-technology industries; in the 2000s, the focus shifted to 'fourth level' education of professionals capable of imagining and developing new products and processes in science-based industries.

As information and communication technologies were applied to transform old industries and services such as vehicle manufacture and logistics and create new ones such as applications software development and online transactional services, the British government applied the emerging theories of the knowledge economy in its white paper, *Our Competitive Future – Building the Knowledge Driven Economy* (Department of Trade and Industry, 1998). The New Zealand government's Information Technology Advisory Group (1998) asserted that more than half of GDP in the major OECD economies was based on the production and distribution of knowledge, and it cited the growth of the Internet and other related new technologies, commitment to education and life-long learning, and heavy investment in research and development as factors that positioned certain countries well to take advantage of new global markets. 'Australia, Finland, Ireland, Canada, Singapore, and the United States are countries which have embraced the knowledge economy (some still

with a strong commodity sector), and are experiencing strong GDP growth as a result.' Also in 1998, the World Bank stated baldly:

For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living. ... Today's most technologically advanced economies are truly knowledge-based (World Bank, 1998: 16)

These few examples already illustrate some aspects of the policy discourses of the knowledge economy that have been consistent over the intervening years – the emphases on competition, the merging of economy and enterprise, the link with communication technologies, the centrality of education and research. Talk of the knowledge economy has gathered momentum, barely restrained – at least until very recently – by the continuing instability in the meaning of the term, and the uncertainty of the empirical evidence supposedly supporting its use as description.

On this, Rohrbach (2001) noted, somewhat awkwardly, 'the frequency of the term, given its alleged scope of application – it should in fact be applicable to all modern societies – is disproportionate to the clarity of its measurement and the availability of longitudinal and cross-national evidence.' Among the inconsistencies of meaning, Rohrbach noted that 'knowledge society' is sometimes represented as present, sometimes as future. She opted for a conceptualisation of the knowledge society as one in which the knowledge sector represents the most significant part of the economy. Using data for 19 OECD countries (not including Ireland), she purported to demonstrate that the knowledge sector does not represent the most significant sector within any of the 19 economies today. Extrapolating the sectoral development based on the period after 1990, Rohrbach argued it would take at least another 30 years before today's high-tech industry and service economies become true knowledge societies.

Similarly, in their analysis of employment patterns in Ireland for 1997–2004, Turner and D'Art (2007) found that 'knowledge occupations are growing at a slightly faster rate in the Irish labour market than other occupations' but they cautioned that this did not necessarily reflect the emergence of a new economy; in the private sector, low-skill occupations were found to be growing faster than high-skills jobs. However, the transition from a resource-based economy in the mid-20th century to a post-industrial economy could be measured differently in terms of value of output and exports, where information-technology products and services and pharmaceutical and other healthcare products had come to be the largest contributory sectors by the end of the century.

The evidence to support a claim that Ireland and other countries made a decisive shift to a distinctly new economy is ambivalent. In this context, it sometimes appears that talk of a knowledge economy is the proposal of a programme or an aspiration, even a metaphor as much as it is a precise description. From the perspective of social theory, Delanty (2003) noted that the concept was 'highly contested'. He asked, not unreasonably, whether we can speak of 'a society in which knowledge is the primary social structure'; he links the talk of a knowledge society to the contemporary ideologies of postmodernism, neo-liberalism and 'third wayism' (ibid).

Also from the perspective of social theory, Fuller (2001) explored the knowledge society as a set of structures making knowledge a source of profit, noting that 'knowledge society prophets who speak the language of knowledge management are mainly interested in exploiting existing knowledge more efficiently so as to capture a larger share of the markets in which they compete'. It is also with that goal of efficient exploitation that they promote more knowledge production. Nowotny, Scott and Gibbons have noted (2006) that knowledge, in the knowledge society, is 'now regarded not as a public good but instead as "intellectual property" that is produced, accumulated, traded like other goods and services'. But they also accepted (2001) that 'knowledge society' denotes a discernible social reality – an ever-greater role for intellectual work in economic production and the increasing social contextualization of the production of knowledge itself. Preston observed that in policy-making for a knowledge-based Europe

emphasis falls upon the production and dissemination of one particular sub-category of knowledge: the scientific and technical ... What seems like a concept, strategy and debate concerning future society-wide development and change is reduced to a highly freighted technology-centred discourse and one-sided conception of knowledge creation. ... Technology and instrumental technical knowledge becomes not merely the means but ... the key measure and goal of societal development (Preston, 2003: 49).

From an educationalist perspective, Alison Wolf (2002) questioned the assumed relations between educational investment and economic growth that underlie knowledge-society strategies, as evidenced in some quotations above. She examines these myths, as she calls them, by reference to policy in the United Kingdom where 'politicians have been obsessed with education'. Citing the 'clichés' about the knowledge economy, Wolf argues with impressive evidence that it is not clear that 'the vast amounts of public spending on education have been the key determinants of how rich we are today. Nor is it obvious that they will decide how much richer, or poorer, we will be tomorrow.' Another educational researcher, Michael Peters (2001: 16), ended a review of the knowledge-society concept as applied to learning by exhorting university colleagues:

we must not become so locked into national policy constructions and their ideological narratives to such a degree that, as servants of the state, we spend all our time satisfying its policy requirements and have no time for informed critique or for perceiving the social consequences of the policies.

The selected examples indicate the presence of a critical current in academic discussion and reflection on the knowledge society. However, as we shall see, the cautionary questions about the import and the implications of the knowledge society reflected in the above examples have been hardly heard as references to the knowledge society became pervasive through many sectors of Irish public and policy discourse.

Ireland's Emerging Knowledge Economy

Even as the economic crisis developed from mid-2008, official commitment to the knowledge economy was restated. Presenting the emergency Budget of October 2008,

Minister for Finance Brian Lenihan underlined that ‘the very significant investment in promoting the knowledge economy’ was being maintained. There were small increases (up to 5 per cent) in some of the relevant allocations at a time when cuts of 10 and more percent applied elsewhere. In January 2009, the long-delayed fifth cycle of the PRTLTI programme, worth €300 million over four years, was announced, signalling yet again, in the words of the Minister for Education and Science, Batt O’Keeffe, ‘the government’s determination to prioritise investment in Ireland’s development as a knowledge-intensive economy’ (Department of Education and Science, 2009).

This thread of Irish public policy can be traced back to the case made in 1999 by the Irish Council for Science Technology and Innovation for a commitment of over €650 million in government funds over six years to research in biotechnology and information technology. The argument was made and won on the basis that Ireland was evolving, or could evolve, into a knowledge economy. Science Foundation Ireland was established in 2000 as a vehicle for these disbursements. Awarding the first Science Foundation Ireland research grants, Tánaiste Mary Harney declared that ‘the underpinning of economic development by a commitment to research has ... become even more important as we enter the Knowledge Age’ (Science Foundation Ireland, 2001). On a similar occasion three years later, the Tánaiste said that ‘these awards, in linking academic researchers with industry partners, play a significant role in building Ireland’s new knowledge-driven economy’ (NUI Galway, 2004).

The state industrial and technological policy agency, Forfás, in a publication on science and technology in Ireland, stated (2004) that ‘as part of its strategy to develop as a knowledge and innovation-based economy, Ireland has significantly increased its investment in science and technology over recent years’.

Some policy statements represented partial perspectives on, maybe even opportunistic uses of, the ‘knowledge economy’. The Information Society Commission (2002) argued for development of the country’s broadband capacity as ‘the enabling infrastructure through which information and knowledge will be accessed, used and shared’. That report was titled *Building the Knowledge Society*, though it had nothing directly to do with the *production* of knowledge.

The buttressing of policy positions by reference to knowledge economy or knowledge society became pervasive. Individual government departments and the government as a whole, state agencies, public-sector bodies, research funders, higher-education institutions and representative bodies of the higher-education sector, along with many other institutions and organisations, have found it meaningful or expedient to refer to knowledge economy or knowledge society as guiding considerations in their strategies and visions. The Higher Education Authority (2004) titled its submission to an OECD review of Ireland’s higher education system, *Creating Ireland’s Knowledge Society: Proposals for Higher Education Reform*. The text itself made no explicit reference to the knowledge society, though it did discuss the roles of higher-education institutions in knowledge production and transfer, and their ‘emerging role as potential and actual sources of enterprise and economic growth’.

There was muted questioning of the direction the knowledge-economy imperative was setting for higher education: for example, the president of the Royal Irish Academy noted ‘there was a demand from within the universities to broaden the discussions beyond the relatively narrow focus of skills for the new knowledge-based

economy to include issues surrounding the universities' traditional role of providing a broad-based education' (Ryan, 2003). But that 'demand' from universities has not been as strongly heard as has the commitment to driving the knowledge economy or knowledge society.

Announcing research project grants in 2006, the Irish Research Council for Humanities and Social Sciences invited applications 'further to the IRCHSS's commitment to supporting research of strategic benefit to Ireland's development as a knowledge society'. Individual universities have taken up the theme: University College Dublin declared that it was 'playing a central role in advancing Ireland's dynamic and highly successful knowledge economy' (University College Dublin, 2008). The government's aspirations for higher education have been framed in these terms too. Addressing university representatives in September 2008, Dr Jimmy Devins, minister of state with responsibility for science, technology and innovation, repeated the commitment of the 2006 Strategy for Science, Technology and Innovation that 'growing research capability is a core component of the European Union's drive to become the most competitive and dynamic, knowledge-driven economy. Ireland has fully embraced that challenge.' (Department of Enterprise Trade and Employment, 2008)

In Ireland over the past decade, discourses of the knowledge economy and knowledge society have been strongly associated with production of scientific knowledge, with technological innovation, research and development in business and higher education sectors, and with competitiveness at the levels of the individual enterprise and of the national economy. By contrast, they have been much more weakly associated with notions of quality of life, or with the intellectual contributions and knowledge derived from humanities and social sciences. It can be observed too also that 'knowledge economy' has sometimes referred to a sector of the larger economy where the highest levels of qualifications are concentrated, and it sometimes refers to the form a successful national economy takes, or should take, in the 21st century. Equally, 'knowledge economy' sometimes refers to the direction the economy is inevitably developing and sometimes to a target, or a possible future, that can be realised if the appropriate efforts and adjustments are made.

Thus, we can state that there is a semantic jumble around knowledge economy and knowledge society, that the terms carry considerable political and ideological baggage, and that the empirical basis of the terms is unclear. However, this does not mean that the terms are hopelessly confused or without denotative power: 'knowledge economy' denotes both the increasingly significant weight of knowledge as a factor in economic production and the changing social conditions of knowledge production – it refers, in this way, to a discernible social reality and to important aspects of social change.

How Media Make Sense of the Knowledge Economy

In this changing reality and in this conceptual uncertainty what is the role of the public-affairs media in amplifying or interrogating the idea of the knowledge economy? This is the question we seek to answer now, through analysis of media coverage of particular moments when knowledge-economy policy-making and communication were especially intense, and of media coverage over a period of nine months when economic and educational issues were prominent on the public agenda.

For the purposes of this analysis, ‘knowledge economy’ and ‘knowledge society’ have been treated as interchangeable. The distinction is, of course, important and it will be seen that occasionally that difference is being highlighted through the choice of one phrase rather than another. However, as this analysis concerns the level and the character of the attention mass media are paying to the development of policy in this area in general, the phrases have been conflated and, in order to save on repetition, sometimes abbreviated as KE/KS.

The launch of the government’s Strategy for Science Technology and Innovation (SSTI) in summer 2006 was one of those high-water marks for knowledge economy policy-making. This strategy document set out the bases for a major increase in spending on research and related activities over the life of the National Development Plan. Among the SSTI targets was the doubling of the numbers of PhDs by 2013. Taoiseach Bertie Ahern noted in the foreword: ‘It is essential that we continue the drive to build a truly knowledge based society’ (Government of Ireland, 2006). The first sentence of the first chapter of the strategy document itself declared: ‘The development of the knowledge economy including the factors that underpin it is one of the key challenges and opportunities facing Ireland’ (ibid). Knowledge economy and knowledge society (KE/KS) are the subject of over 20 discrete references in the document and there are many more related phrases about knowledge transfer, knowledge acquisition, and similar. The government press releases accompanying the document highlighted how the strategy was embedded in the ambition for Ireland to ‘secure its position as one of the world’s advanced knowledge economies and become renowned worldwide for the excellence of its research’ (Department of Enterprise Trade and Employment, 2006).

Only one newspaper, the *Irish Times*, reflected this heavy emphasis on knowledge production and exploitation. The *Irish Examiner* covered the document launch primarily in its business pages, and the *Irish Daily Star*’s page 8 report highlighted the government’s drive to ‘secure [Ireland’s] position as one of the world’s advanced economies, thus deleting ‘knowledge’ from the supplied phrasing of the press release. Similarly, the *Irish Independent* highlighted on page 1 that ‘the Government is to spend a massive €2.7bn over the next two and a half years in a crash investment drive to spur Ireland higher up the league of world economies’. The *Irish Independent* also reported comments by opposition parties that the strategy was ‘too late’ but also the view of the Irish Universities Association that the strategy was a ‘ringing endorsement of fourth level skills as the key driver for development for Ireland as a knowledge society’. It added a welcome for the strategy document from Professor Des Fitzgerald, vice-president for research at UCD, and a broadly supportive editorial that nonetheless underlined that research expenditure was at higher levels in Britain and Sweden.

The *Irish Times* offered ringing endorsement for the government strategy; its page 1 lead was headlined:

Scientific R&D to receive €3.8bn over next 7 years

Government launches strategy to develop knowledge-driven economy.

The report referred to ‘a staggering €2.7 billion’ for research, and ‘remarkable levels of research spending’. It stated that ‘the goal is to help Ireland become a world

player in research'. Further coverage inside stated that the SSTI launch 'provides ample evidence that [the government] is taking the creation of a knowledge-based economy very seriously'. The strategy document highlighted 'the clear-cut commitment by the Government to promoting scientific endeavour', said the *Irish Times* analysis. It provided confidence to those taking up studies and a career in science 'that the government was embarked on a long-term programme to build a knowledge economy'.

There was a supportive editorial the next day, a 'warm welcome' from UCC president Gerry Wrixon a week later, and a comment from columnist Karlin Lillington the next week that 'it is not even debatable [that] R&D and a strong support for science and technology is [sic] the backbone for economic development in a knowledge economy'. This combination of contributions appeared to cast the *Irish Times* in the role of cheerleader for the government's knowledge-society strategy. Partially restoring the newspaper's balance, and proving that such strategy is, in fact, debatable, NUI Maynooth economist Professor Finbarr Bradley contributed an opinion piece to the *Irish Times* two weeks later, stating bluntly that the massive spending on R&D 'will not lead to a knowledge or innovation society' and he explored the different approaches in different countries to evaluating and exploiting knowledge (Bradley, 2006).¹

To examine more deeply these patterns of indifference in some media sectors, detached observation in others, and enthusiastic endorsement and occasional questioning comment in yet others, a sample of newspaper references to 'knowledge economy', 'knowledge society', or 'knowledge-based' was compiled from a search of the Nexis database for the period 1 May 2008 to 31 January 2009. The newspapers sampled by this means were: *Evening Herald*, *Irish Examiner*, *Irish Independent*, *Irish Times*, *Sunday Business Post*, *Sunday Independent* and *Sunday Tribune*. The Nexis database appears to give access to comprehensive or near-comprehensive content of the main parts of these newspapers, though there is some variation between the titles in respect of the content of supplements. It must be acknowledged immediately that this sample gives a partial view of Irish newspapers as a whole. This is partly compensated by a more comprehensive search of newspapers for a shorter period in which there was an especially high level of government and other activity around knowledge economy-related issues; this will be reported later.

In the period May 2008 to January 2009, Brian Cowen was elected as Taoiseach and the government was reshuffled (May 2008), an early Budget was introduced in response to the deepening economic and public finances crisis (October 2008) and the government's 'smart economy' plan for economic renewal was published (December 2008). On his election as Taoiseach Brian Cowen declared the knowledge economy to be among his high-level themes, and he announced the assignment to Green Party minister Eamon Ryan of responsibility for producing an Action Plan for the Knowledge Society. This referred particularly to the development of the communication technologies infrastructure, thus continuing one of the strands of semantic uncertainty in discussion of the knowledge society referred to earlier. It is perhaps worth noting, as an indication of the media's attention to this area of policy-making,

¹ Bradley developed the argument further in an article (2007) and a book (2008) co-authored with James Kennelly in which he stressed the importance of cultural and social dimensions of economic development, particularly innovation.

that the Action Plan for the Knowledge Society was due to be produced by summer 2008. But it was again included among the proposals of *Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal*, released in December 2008, when it was stated that the Action Plan was due for release in 'mid-2009'. The body of newspaper content assembled for this study contained no reference either to the repetition of the plan's announcement or to the postponement by nearly a year of its completion.

Taoiseach Cowen's early restatement of the government commitment to the knowledge economy and knowledge society was echoed through the following months in the speeches and statements of his ministers, notably those of the Tánaiste and Minister for Enterprise Trade and Employment, Mary Coughlan, her junior, Jimmy Devins, minister of state for science technology and innovation, and Batt O'Keeffe, the Minister for Education and Science. Their promotion of the cause has been reflected in the press, very often in the reproduction of quotes from their scripts.

The body of material of newspaper archive material for the sample period comprised a total of 185 articles that matched the search criteria, and after duplicate items, irrelevant items and letters to the editor were removed. Distribution of these items across the newspapers was notably uneven: *Evening Herald* (2 items); *Irish Examiner* (13); *Sunday Tribune* (2); *Sunday Independent* (10); *Sunday Business Post* (25), *Irish Independent* (27); *Irish Times* (105). Thus, the *Irish Times* accounted for more 'knowledge economy' references than all of the other newspapers combined. Even allowing for the Sunday newspapers' less frequent publication, the position of the *Irish Times* is notable.

The retrieved articles were coded according to the following criteria: (a) whether the search terms were used directly by authors of the articles or were found in quotation; (b) the author or quoted source of the relevant mention; (c) the topic of the article, and thus the context of the mention; (d) the stance towards the knowledge economy indicated in the reference, within the context of the article.

Approximately equal numbers of items were found in which the searched-for phrases were contained in a direct or indirect quote attributed to a named source (93), or were used directly by the author of the item, whether a journalist or an invited contributor (92). In this second category, there was also an almost equal distribution of invited contributors (48) and journalists (44). Thus, less than one quarter of all KE/KS references occurred in the journalists' own words. When we also see the recurrence of a small number of specialist correspondents and columnists among the journalists found to be using these terms directly, and we also note the distancing devices, as in 'knowledge economy', in quote marks, or 'so-called knowledge economy', frequently used by journalists, we can observe that these terms have not been strongly assimilated into journalists' own language, or the media vernacular.

As noted, quoted sources and invited contributors accounted for over three times as many KE/KS references as journalists. The invited contributors and the quoted sources using the key phrases came from education (49), business (35), government (27), state bodies (12), trade unions and student unions (12); these categories accounted for all but six of the sources or contributors. The strong presence of the education sector reflects the several rounds of public debates about the performance of schools and school students, and about the funding of higher education and the possible reintroduction of tuition fees, in the sample period.

This distribution of contributors and sources is reflected also in the thematic contexts of the KE/KS references: education (78); economy (57); research and research investment (27); business (15); telecommunications (6); politics (5); other, including culture and arts (2). This distribution, and notably the relatively small number of occurrences in the 'other' category, indicates that knowledge-economy terms remain very largely anchored in their home domains of knowledge (education and research) and economy (and enterprise). The way in which the database search was performed would have retrieved articles in which passing reference was made to KE/KS. Such references would indicate naturalisation of the phrases into everyday discourse, such as appears to have happened, for example, to the notion of carbon footprint, mentioned earlier. Rare examples of such passing references in articles on a topic other than economic or educational were in an article on arts policy by Marian Fitzgibbon of Athlone Institute of Technology (*Irish Times*, 26 August 2008) and a column on cultural change by Fintan O'Toole (*Irish Times*, 8 November 2008).

Media Stances on the Knowledge Economy

The 185 articles with KE/KS references in this sample were also coded according to four discernible stances towards the knowledge economy. Some examples of each stance, as they were coded in the present study, will serve to illustrate how the distinctions were made.

Description, where the terms were used in matter-of-fact manner, without implied judgement, to refer to something taken to really exist, e.g.

The two-part report said more investment was needed in education and Ireland's knowledge economy as well as R&D industries (National Competitiveness Council, quoted in *Irish Examiner*, 9 January 2009).

The document [*Building Ireland's Smart Economy*] repeatedly makes reference to increases in Science Foundation Ireland and related funding, all predicated on moving towards a knowledge economy (Prof Brian Lucey, TCD, in *Irish Times*, 20 December 2008).

The long-lasting effects and benefits of this programme [Fás Science Challenge] will be measured undoubtedly in its contribution to securing a knowledge-based economy in Ireland (Prof Bert W O'Malley, Baylor College of Medicine, Houston, quoted in *Irish Independent*, 5 December 2008).

Endorsement, where the terms were used in a way, or in a context, that indicated the author's or source's wish to see the knowledge economy realised or indicated their approval for the current knowledge economy strategy, e.g.

We must complete the next stage of our progress – the transition to the 'knowledge' economy (*Irish Independent* editorial, 23 June 2008).

Ireland – like other developed states – is moving from being a post-industrial economy based on manufacturing goods to becoming a knowledge economy (*Irish Times* editorial, 2 July 2008).

Future economic prospects for Ireland depend on building a knowledge-based economy (columnist William Reville, in *Irish Times*, 10 July 2008).

Caution, where the terms were used in a way, or in a context, that indicated the author's or source's concern about the viability of the current knowledge economy strategy – this could be indicated in the use of qualifying adjectives, quote marks as distancing devices or the conditional form: if we want the knowledge economy, then this must happen, e.g.

Another set of Leaving Cert results ... Cue the warnings about the future of inward investment and the 'knowledge' economy (Cliff Taylor, *Sunday Business Post*, 17 August 2008).

Ireland needs to deliver the much-vaunted 'knowledge economy' (*Irish Independent* editorial, 31 July 2008).

... the Government's commitment to the development of the so-called 'knowledge economy' (Sean Flynn, *Irish Times*, 27 May 2008).

In jargon-speak this is referred to as the 'knowledge economy' (Graham Love, SFI, *Sunday Independent*, 17 August 2008).

Scepticism, where the use of the terms or the context of their use represented a challenge by the author or source to the feasibility or to the claimed benefits of the knowledge economy, e.g.

The refrain that policymakers have repeated over and over ... was the drive to create 'Ireland's knowledge economy' (Charles Larkin and Dr Jacco Thijssen, *Sunday Business Post*, 10 August 2008).

What chance has Ireland in the knowledge economy if its best and brightest all want to do law or medicine? (Brendan Keenan, *Irish Independent*, 24 August 2008).

What lies behind this is the delusional nature of our 'knowledge society' (Fintan O'Toole, *Irish Times*, 19 August 2008).

Ireland's evolution into a 'smart' or 'knowledge' economy seemed [this week] little more than an increasingly distant pipedream (Editorial, *Irish Times*, 10 January 2009).

On this basis, the sampled items were coded as follows: description (39); endorsement (62); caution (58); scepticism (27). A very small number of items contained quotations or references which represented two different perspectives on the knowledge economy; consequently, the total number in these categories is greater than the total number of items retrieved. It is notable that the distribution of items in these categories changes over time and, in particular, that scepticism strengthens and endorsement weakens through the sample period. This is represented in Figure 1.

Figure 1: Media Stances to the Knowledge Economy

	<i>May–July 2008</i>	<i>August–October 2008</i>	<i>November 2008– January 2009</i>	<i>Total</i>
Description	10	11	18	39
Endorsement	20	29	13	62
Caution	19	27	12	58
Scepticism	0	13	14	27
Total	49	80	57	186

The references coded as cautious do not necessarily indicate a view on the desirability or otherwise of pursuing the knowledge economy agenda. Rather, KE/KS references in the several rounds of public and political debate about the funding of higher education, about participation levels and performance in Leaving Certificate sciences and maths, and about the state of the national and international economy often bore the implication or the explicit qualification that the conditions were not in place for the KE/KS to be achieved.

The emerging evidence of difficulties in the economy from summer 2008 onwards, and the evident disparities between policy ambitions and student performance and attitudes, were two major factors giving licence for a more qualified approach to the knowledge economy. As long as the contestation or interrogation of the concepts was theoretical and largely confined to the academic arena, the media barely took account of the debate, even when expressions of scepticism appeared in their own pages. In the case of the *Irish Times*, any contestation from invited contributors was for some time drowned out by the paper's own strong endorsement. The rising volume of more qualified, even sceptical commentary from within the media's own resources may have been more a reflection of the current economic situation than a cyclical change in the attention specifically to the KE/KS issue.

Two further observations about this coverage may be worth making: (1) knowledge economy (141) and knowledge-based economy (29) references far outnumbered knowledge society (19) references. In a small number of cases, 'knowledge society' was used deliberately in order to distinguish from 'knowledge economy', and to make a point about the relative narrowness of official policy; (2) in reference to the semantic uncertainty surrounding KE/KS phrases mentioned earlier, quotes coded as representing the knowledge economy as present (86) or future (100) were in similar proportions, and those representing the knowledge economy as a sector of the economy (34) were significantly outnumbered by those representing it as the whole of the economy (152).

Coverage of Knowledge-Economy Events

In a further effort to validate the analysis of the nine-month sample of newspaper coverage, a broader sample of newspapers was analysed for a week in mid-December 2008 during which several announcements were made, reports were released and initiatives were taken that bore significantly on the government's knowledge economy

strategy. Recognising that media could cover knowledge economy-related topics without using any of three particular phrases, it was decided to review reporting of these events, using print copies of the newspapers as source. The announcements and publications mentioned were all constructed as news events with the issue of media releases and, in some cases, the hosting of a press conference or reception. The media were in receipt of substantial ‘information subsidies’, as Gandy (1982) called them, to help them in the reporting these events:

1. Monday, 15 December 2008: release by the Expert Group on Future Skills Needs of Statement on Raising National Mathematical Achievement (3-page press release + 16-page statement)
2. Monday, 15 December 2008: publication by Department of Enterprise Trade and Employment of *Review of the Implementation of the Strategy for Science Technology and Innovation* (8-page press release + 84-page report)
3. Wednesday, 17 December 2008: announcement by Department of Enterprise Trade and Employment of investment by Science Foundation Ireland (SFI) in three research centres (2-page press release)
4. Wednesday, 17 December 2008: publication by Advisory Council for Science Technology and Innovation of statement, *Ireland's International Engagement in Science, Technology and Innovation* (2-page release + 64-page statement)
5. Thursday, 18 December 2008: publication by Educational Research Centre, at St Patrick's College Drumcondra, of *A Teacher's Guide to PISA Science*, an analysis of Irish second-level students' performance in international science assessments (2-page press release + 68-page report).
6. Thursday, 18 December 2008: release by government of *Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal* (2-page press release + 100-page document)

In four of the six cases, the press releases and original documents explicitly highlighted the relevance of the announcement or publication to the declared strategy of building a knowledge economy. The Expert Group on Future Skills Needs statement on mathematical achievement noted that ‘mathematics ... is a fundamental requirement for the growth of the knowledge economy and the development of a world-class research and innovation system in Ireland’. The Tánaiste's introduction to the *Review of the Implementation of the Strategy for Science Technology and Innovation* underlined that the strategy was one of ‘transforming Ireland into a competitive knowledge economy’. On the occasion of the announcement of grants to three ‘world-class’ research centres for science, engineering and technology, the director-general of Science Foundation Ireland, Frank Gannon, said that these and other centres ‘have led our portfolio of initiatives that are steadily moving Ireland towards a truly knowledge-based economy’. The government's economic renewal plan proposed the development of a ‘smart economy’, an apparently conscious alternative to ‘knowledge economy’, but also a restatement of the commitment to ‘[invest] heavily in research and development’ and to build ‘an exemplary research, innovation and commercialisation ecosystem’.

The media coverage of these events is summarised in the following paragraphs.

Expert Group report: Several news reports on the Expert Group's report on maths competence (RTE Nine O'Clock News, 15 December 2008; *Irish Examiner*, *Irish Independent*, *Irish Times*, all 16 December 2008) highlighted the group's recommendation that students taking higher-level examinations at Leaving Certificate should be awarded bonus points. The *Irish Times* commented that this recommendation was unlikely to be adopted by the Minister for Education.

SSTI Review: The *Irish Times* and *Irish Independent* (both 16 December 2008) carried short reports on the review of the SSTI, with the *Irish Times* highlighting the four-fold increase in research spending over a decade, and the *Irish Independent* adding to its summary of recent R&D-related initiatives a commentary from Irish National Teachers' Organisation general secretary John Carr on the contrast between research spending and very much lower spending on science and technology facilities in primary schools. The imbalance between inputs to the media and media outputs was especially notable in this case.

Research Centre Grants: The *Irish Daily Mail*, *Irish Examiner*, *Irish Daily Star* and *Irish Times* (all 18 December 2008) carried reports on the allocation of grants to three university-based research centres, all carrying the total grant sum of €60 million in their headlines. The *Star* and *Times* drew attention to the government's and Science Foundation Ireland's aim, through such grants, to build 'a world-class research base' in Ireland.

Advisory Council Report: No coverage of this report was found.

School students' performance on science: Only the *Irish Examiner* (19 December 2008) covered the publication of the Education Research Centre report on Irish school students' performance in international assessments of competence in science during the sample period. (The *Irish Independent* referred to it a month later.)

Smart Economy Plan: All of the sampled media gave prominent coverage to the launch of the Smart Economy plan, though the *Irish Daily Star* and *Irish Daily Mail* (both 19 December 2008) gave more paragraphs to criticism of the plan from various quarters than to its content or to the government's presentation of it. The *Mail's* editorial referred to the stated aims to develop a 'smart economy' and 'innovation island' as 'really just another jumble of civil service jargon', while the *Star's* editorial declared the plan was 'thin on policies, bereft of detail'. RTE 1's Nine O'Clock News (18 December 2008) carried five reports in total focused on the plan, two of these highlighting in particular the proposals aimed at boosting research and innovation. One package reported positive reaction from business leaders in the technology sector. The *Irish Examiner* and *Irish Independent* (both 19 December 2008) gave space to Taoiseach Brian Cowen for a presentation of the plan's rationale.

In its coverage of the Smart Economy plan, the *Irish Times* (19 December 2008) gave detailed treatment to the establishment of a €500 million innovation fund with contributions from the state and from US venture capital funds in several articles on pages 1, 8 and 9. The commitment to supporting green technology was also

highlighted, but a critical commentary by Eunan King claimed the ‘elephant remained firmly in the room’ as the plan offered no clear view of how and why the economy had deteriorated. Feature writer Miriam Lord wrote that ‘many observers at yesterday’s launch were of the opinion that the Taoiseach’s Get Smart document is an airy-fairy confection of past pledges bundled together under new wrapping’. Political editor Stephen Collins referred to the document as ‘100 pages of bureaucratic verbiage’ and commented that it did not make clear how Ireland would get from where it was now to being ‘the world’s leading location for business innovation’. An *Irish Times* editorial described the plan as ‘a patchwork document’ with proposals that ‘make sense’ but neither clear nor vigorous enough on ‘unruly Government finances’. The previously supportive *Irish Times* was evidently influenced, like other media, by concerns as to whether the government’s policy was adequate for the challenges the economy faced.

Irish Daily Star columnist Richard Bruton, deputy leader of Fine Gael, repeated his view (20 December 2008) of the smart economy plan as ‘dumb’. In the *Sunday Business Post* (21 December 2008), political editor Pat Leahy noted the hostile response of media to the plan but contributor Joe Bollard supported the plan’s emphasis on supporting the commercialisation of research and columnist David McWilliams declared that the innovation-centred elements of plan were ‘ingenious’, ‘smart’, ‘important’ and ‘should be welcomed’. This was one of the very few endorsements. In contrast, *Sunday Independent* columnist Brendan O’Connor (21 December 2008) declared ‘the new “Smart Economy” was none other, it turns out, than a vague amalgam of the old “Knowledge Economy” bullshit that various quangos have been churning out for a decade’.

As can be seen, some coverage of the ‘smart economy’ initiative linked it explicitly or implicitly to the earlier KE/KS discourses, though generally as a means of critique or, as in the last case above, simple dismissal. Thus, looking back from late 2008, many media contributors applied a perspective to the ‘knowledge economy’ drive of the previous years that was markedly different from that which prevailed at the time.

In the weeks and months after the publication of the government’s smart-economy plan, some of the same patterns noted above could be observed. Government ministers in enterprise and education areas promoted the new phrase strongly, e.g. Tánaiste Mary Coughlan’s defence of research investment as a help to ‘create jobs and build a “smart economy” for Ireland’ (*Irish Times*, 26 February 2009). Interest groups adopted the new phrase expediently, e.g. the statement by Prof Jim Browne, president of Engineers Ireland (and of NUI-Galway) that engineers would be in high demand as Ireland made the transition to a ‘smart economy’ (*Irish Times*, 4 February 2009). The *Irish Times* endorsed the government’s perspective, e.g. science editor Dick Ahlstrom’s comment that ‘there is no doubt that a smart economy will bring with it jobs and wealth’ (*Irish Times*, *Innovation* magazine, February 2009).²

² During the debate on the government’s management of the economic crisis which marked the local and European election campaign of May-June 2009, economics lecturer and journalist Constantin Gurgdiev (2009) wrote that the effort to get more PhDs and public capital into science-based sectors represented ‘a waste of economic resources’, that the ‘focus on science-based R&D is hopelessly out of synch with international trends’ and that the goal of doubling PhD numbers ‘without regard to the quality of these researchers’ was ‘patently absurd’. The *Irish Times*’s science editor indirectly replied (Ahlstrom 2009), declaring: ‘Backing off from the promised investments in science and research has the potential to undermine the undoubted gains we have made ... It will also take the life out of our ambitions to develop a knowledge economy.’

Conclusion

This analysis offers a view of how ‘knowledge economy’ and related terms that originated and matured in academic and policy discourses have been adopted in media discourses. As noted earlier, the ways in which journalism brings together the language of everyday with the language of specialist domains can leave the seams between these languages more or less visible. In this case, the seams have remained highly visible: we have observed the weak assimilation of ‘knowledge economy’ phrases into the natural language of journalism, as indicated in the more frequent use of these terms in direct or indirect quotations from expert sources, or in quote marks without any specific attribution, than in the direct words of the journalist. We have drawn attention to the diverse levels of attention and stances between various media towards the ‘knowledge economy’ and its cognates. In particular, we have noted the position of the *Irish Times* as a more frequent observer and commentator on, and strong advocate for, the knowledge society (latterly, smart economy) strategy and its implications for education and research. But we have seen too the generally rising level of scepticism about this strategy and increasing media space being given to questioning of its assumptions, as scepticism rose generally about the government’s handling of the wider economic crisis.

I have analysed elsewhere (Trench, 2007) how Irish media coverage of science tends to present it as remote, as relevant mainly to economic development, or as something to be celebrated. In all of these perspectives, Irish media represent science as difficult for society to engage with. A similar detachment runs through much of the coverage of the knowledge economy, perhaps reflecting the fairly desultory political discussion of science and the knowledge economy in response to the promulgation of policy. But it remains a matter of interest, not just to media analysis but also to democracy and citizenship, that topics and terms so central to public policy discourses are marginal to media discourses.

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