The Making of a Market: Conceptions of Control in the Genetic Paternity Industry in Australia

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Abstract: This paper addresses the emergence of a new market in genetic paternity testing in the Australian context, drawing on the work of the US economic sociologist Neil Fligstein. In particular, it addresses Fligstein’s concept of ‘conceptions of control’, namely the claims made by entrepreneurs and managers so as to avoid price competition and stabilize their position in relation to competitors. The paper identifies an array of strategies directed towards the stabilisation of the genetic paternity testing market, and identifies three conceptions of control in the industry – an ‘incumbent conception of control’, a ‘niche conception of control’ and a ‘challenger conception of control’. The paper argues that the concept provides a useful grip on real world markets, but does not provide a model in a way that is comparable to that of the neo-liberal paradigm. On this account economic sociology still struggles to ‘go beyond’ critique of the neo-liberal paradigm and develop a more proactive sociological model of economic behaviour.

In his book *The Architecture of Markets*, Neil Fligstein develops a theoretical framework for a sociology of markets. The framework rests upon the proposition that ‘we can get a great deal of analytic leverage over what is going on in a particular market if we assume that entrepreneurs and managers construct their actions so as to avoid price competition and stabilize their position vis-à-vis other competitors’ (2002: 71). Fligstein describes the claims made by entrepreneurs and managers regarding the production and reproduction of stable markets as ‘conceptions of control’.

This paper explores Fligstein’s account – in particular, his concept of ‘conceptions of control’ - through an in-depth case study, the emergence of a new market in paternity testing in the Australian context. First, it elaborates upon Fligstein’s analysis of markets.
Second, it describes the methods employed in the study, grounded in interviews with key stakeholders. It then describes three competing conceptions of control in the industry, described (following Fligsein) as an ‘incumbent conception of control’, a ‘niche conception of control’ and a ‘challenger conception of control’. Finally, the paper addresses the adequacy of the concept in the light of the case study.

**The sociology of markets**

The dominant neo-liberal economic paradigm views markets as mechanisms that bring together buyers and sellers. They do so in a way that is not obvious; hence the expression the ‘hidden hand’ of the market. Price guides the hidden hand, coordinating the anonymous activities of buyers and sellers. When prices are high (there are too many buyers), sellers step up their activity and make more widgets. When prices are low (there are not enough buyers), sellers make less widgets and shift their activity into more profitable products. There is relentless competition as sellers try to sell more widgets for more profit, and buyers try to find the best value for their money.

The growing prominence of economic sociology is at least partly a response to neo-liberal hegemony. In the first instance, economic sociologists directed their analysis against the anonymous and atomistic conception of markets (White 1981; Granovetter 1985). In the course of the 1990s there occurred a ‘huge expansion of empirical work’ in economic sociology (Fligstein 2002: 6). This research established the wide variety of market structures across societies, coordinating suppliers, competitors and customers in different ways. In particular, it drew attention to the distinction between markets,
hierarchies and networks as alternative means of conducting transactions; the diverse structure of firms (‘hierarchies’) in different societies; the different ways in which firms articulated with each other, including ‘network’ relationships; and the diverse role of the state in setting the rules for markets (Powell 1990; Fligstein 2002; Biggart 2002).

The common thread in the growing literature, Neil Fligstein observes, is the ‘shortcomings of the neoclassical model’ of perfectly competitive markets (Fligstein 1996: 657). In this context, Fligstein argues that it is time to ‘go beyond’ critique and develop a more proactive sociological model of economic behaviour, focusing upon markets as social institutions. More specifically, he advocates what he describes as a political-cultural approach to economic sociology. The ‘key insight of this approach is to consider that social action takes place in arenas, what may be called fields, sectors, or organized social spaces’.

The theory of fields assumes that actors try to produce a “local” stable world, where the dominant actors produce meanings that allow them to reproduce their advantage. These actors create status hierarchies that define the positions of incumbents and challengers. Actors face two related problems when constructing these fields: attaining a stable system of power and, once in place, maintaining it. (2001: 29)

More specifically, Fligstein’s sociology of markets ‘replaces profit-maximizing actors with people who are trying to promote the survival of their firm’ (2001: 17). This dynamic is true even in highly competitive markets, where ‘actors try to differentiate their products to form niches to protect themselves from price competition’ (2001: 71). There is an ongoing power struggle within organisations as actors make claims about
how to solve the problem of producing and reproducing stable markets. Fligstein describes these claims as ‘conceptions of control’.

There are many possible conceptions of control because ‘the unique history of markets means that clever entrepreneurs and managers can produce myriad cultural solutions to their collective problems of price competition’ (2001: 71). The actors whose conception of control prevails within an organisation will be its leaders. From this point firms can impose successful conceptions of control upon other firms. From an historical point of view, ‘cartels, publicized prices, barriers to entry, limited production, patents, licensing agreements, and joint ventures in marketing and production are all tactics that firms use to divide markets’ (2001: 73). Vertical integration (merger with suppliers or customers), horizontal integration (merger with competitors) and diversification (entering new and unrelated markets) are also strategies to reduce the effects of competition and achieve stability.

Fligstein goes on to identify three phases in market formation: emergence, stability and crisis. The most fluid phase is that of emergence. Lots of firms are forming, each with different conceptions of what the market will be. The politics at this stage resembles social movements. New markets often borrow conceptions of control from nearby markets. A stable market is one where the roles of incumbents and challengers are defined and there is a shared conception of control, including the implied status hierarchies and strategies. Yet ‘stable markets are like sand castles’: they are ‘built up, last a while, but in the end are transformed’ (2001: 90).
Method

In 1984 a geneticist Alec Jeffries at the University of Leicester in the UK stumbled upon a new technology that could be used for identity testing with much greater precision than possible hitherto. Jeffries dubbed his discovery ‘DNA fingerprinting’. The new technology was almost immediately applied to both forensic investigation (a high-profile rape case) and parentage testing (in the context of immigration) (Davies 2002: 184-5; The Economist March 13 2004: 20-1).

From the late 1980s government forensic facilities in Australia adopted DNA testing for police investigations of crime, identification of human remains, missing persons and so forth. There also occurred a proliferation of private providers in DNA identity testing across the states. The mainstay of their business was paternity testing. The fact that this market for paternity testing is relatively new and unstable makes it an excellent case study to explore Fligstein’s account.

The public record about the paternity testing industry is minimal. For the most part, this paper is based on interviews with 13 key informants from Melbourne (8), Sydney (4) and Adelaide (1). Of these respondents, 8 were drawn from the 7 major providers of DNA paternity testing in Australia (two from the Genetic Technologies Group, one each from DNA Labs, DNA Solutions, Gribble, Medvet, Sonic, and the Victorian Institute of Forensic Medicine). All respondents were middle to senior personnel, ranging from the managers of testing units to CEOs. The remaining five respondents included the unit manager from a one-time provider (Red Cross); two one-time managers of labs in the
early stages of the industry (Silbase, DNALabs); one representative of a US company (Applied Biosystems) that provides technology and materials to the industry; and one representative of the National Association of Testing Authorities (NATA), the accreditation authority.

The incumbent conception of control

Between 1988 and 1998 there were at least twelve new providers of DNA identity testing: four in Melbourne, three in Sydney, two in Adelaide and Perth, and one in Brisbane. Seven were private companies from the ‘nearby’ biotechnology and medical science sectors. The remaining four were not-for-profit organisations from forensics, scientific testing and blood products. Overwhelmingly they serviced a regional market. The growing number of providers placed downward pressure on prices. One industry veteran observed:

Where the big drive really came was in price. People had been prepared to pay nine hundred or one thousand dollars for a paternity test in the early nineties. As more and more little companies came into the market, they were all trying to drive the price down. And the first to really screw it up was Queensland Legal Aid, which put their work out to tender. And whoever got the tender ... whatever price [they] charged for it was, as it turned out, just ruinous. But that set a benchmark, you know.

From the late 1990s there occurred a rationalisation of the industry. Simons GeneType Diagnostics, the subsidiary of a Melbourne-based biotechnology group, was the dominant player in this process. In the first instance, management differentiated the business not in terms of the actual tests (the so-called ‘back end’ of the industry), but rather by building its relationship with the key client base (its ‘front end’). A senior manager observed:
The only repeat business that we really get is from the work we do for the Legal Aid departments in each state ... So we differentiate ourselves by ensuring that the service we provide for our referral base is first class ... The differentiation was really involved in the front end of the business. Because if you talk to the legal fraternity, ... [they] really want a laboratory whose results will be accepted in court. Any accredited laboratory’s results will be accepted in court. So they go to the laboratory that actually makes their life a lot easier. What we do is we organise everything for the solicitors.

The business then 'went onto the acquisition and merger trail'. It bought up businesses in Sydney, Melbourne, Adelaide and Perth: retaining the business names of some of its takeover targets for marketing purposes, closing down local laboratories, and moving operations back to Melbourne. It also adopted the name of one takeover target – Genetic Technologies - for the whole group of companies. Genetic Technologies is currently the dominant provider of paternity tests in Australia.

In fact, the core business of Genetic Technologies is its intellectual property – controversial worldwide patents for ‘methods for using non-coding DNA in all genes, in all multi-cellular species including humans, animals and plants and in many single-celled organisms’ (AusBiotech 2004). Genetic Technologies is currently pursuing legal action against key companies worldwide for infringement of its patents. One of these companies is Applied Biosystems, a US company that dominates the provision of technology to the paternity testing industry, including ‘kits’ of testing reagents that incorporate the cost of relevant patents. DNA identity testing entails the comparison of banding patterns on non-coding DNA: hence Applied Biosystems’ kits could potentially yield dividends for Genetic Technologies. Applied Biosystems is fighting the suit vigorously.
Genetic Technologies also offers fee-for-service tests for disease susceptibility, human athletic performance, and animal and plant breeding information. In 2004 it became the ‘first and only accredited, independent, non-police forensic DNA testing laboratory in Australia’ (AusBiotech 2004). In other words, it is seeking economies of scale at both the front and back ends of its business through a variety of related activities in order to maintain its dominant position in the Australian market.

**A niche conception of control**

As more competitors entered the market during the 1990s, there was more regulation: notably, a legal requirement from the Family Court for formal accreditation through the National Association of Testing Authorities (NATA). The public and not-for-profit providers were the first to obtain NATA accreditation, but most private providers quickly followed. They had little choice in this respect, given that many clients wanted the tests to have legal standing. In turn, accreditation created a substantial barrier to entry; first, in terms of NATA charges, and second, in terms of the minimum required protocols and systems.

At least one private provider – Vern Muir’s DNA Solutions – did not seek accreditation. Muir initially ran a bird sexing business, but switched his operations following persistent telephone inquiries about paternity testing. The fact that his business was not accredited allowed it to compete on price, offering cheaper tests than its competitors. DNA Solutions also conducted tests where mothers had not provided consent (so-called ‘motherless testing’), and it conducted tests on hair samples (making it easier to conduct
tests without the knowledge of other parties, including the child). Such tests were not admissible in court but they satisfied the demands of a market niche, namely men who wanted a test without the knowledge of their partner or ex-partner. DNA Solutions also actively promoted its business through the media and the Internet, including hyperlinks with organised men’s groups.

In the wake of DNA Solutions, another Melbourne-based company GENE-E, associated with the controversial medical entrepreneur Geoffrey Edelstein, established a broking service for paternity testing. This model was pioneered in the US, and involved building the customer base for the non-accredited tests through the media. Daytime talk shows provided a vehicle for the brokers (Stanley 2002), who then outsourced the tests to laboratories. In Australia GENE-E advertised on late night television, and apparently made a large part of its revenue through its telephone hotline.

DNA Solutions and GENE-E sought to carve out a niche within the industry. A 2003 government-commissioned inquiry addressed this niche, attracting submissions from across the industry. All providers other than DNA Solutions and GENE-E pressed for compulsory accreditation. Providers were divided on the issue of ‘motherless testing’. The Inquiry subsequently recommended compulsory accreditation and tighter regulation of ‘motherless testing’ (ALRC/NHMRC 2003; Gilding 2004: 72-4). So far the government has not acted, but the future of the non-accredited providers is precarious.
A challenger conception of control

In 2003 there emerged a new wave of providers from two of the three major pathology testing companies in Australia, Sonic (the second biggest) and Gribbles (the third). The pathology testing companies had two advantages in entering the industry. First, they were already substantial businesses, increasingly drawing upon DNA identity testing technologies for what one informant described as ‘esoteric testing’ for inherited conditions. As the same informant observed, paternity testing is a ‘very small part’ of the company’s business. In other words, there are economies of scale at the ‘back end’ of the business.

Second, these companies were already involved at the ‘front end’ of the business, collecting test samples for existing providers such as Genetic Technologies. More than this: they have existing relationships with doctors, a key referral group. In the words of another informant:

One of our main client bases is the general practitioners, and over many years we were getting endless phone calls saying, ‘I’ve got a patient here or someone’s come in to see me and want paternity testing’. So management said there was actually a need within our own client group.

The entry of these companies affected existing providers in terms of referrals and collection points. One respondent stated: ‘They [the pathology companies] used to refer business to us, now they don’t’. Another observed that ‘most of our referrals come down the medical route: this is why Sonic is going to be such a major threat to us.’ Gribbles has also dropped the price of their tests by about $150, placing further pressure on competitors.
Discussion

There is certainly a history of price competition in the genetic paternity industry. There was price competition as more providers joined the market and Queensland Legal Aid put its cases out to tender. About the same time, NATA accreditation allowed non-accredited providers to pass on their savings with cheaper tests. There is currently price competition from one of the new pathology testing providers, perhaps passing on savings in the collection process.

There is also a history of strategies directed towards stabilization of the industry, above and beyond price competition. Fligstein’s concept of ‘conceptions of control’ provides a useful grip on these strategies in the industry. In the case of the dominant provider Genetic Technologies, strategies include capture of the lawyer referral base, horizontal integration, barriers to entry, patents and diversification (forensics and genetic testing). In the case of several minor players, they include formation of a niche market for non-accredited tests. In the case of the emergent laboratories Sonic and Gribbles, they include diversification (pathology testing) and capture of a medical referral base.

The debate around the sociology of markets – including Fligstein’s contribution – is predicated on a dichotomy between price competition and social considerations. In practice it is difficult to maintain this dichotomy. On the one hand, price competition is often underpinned by non-economic processes; notably, in this case study by the actions of state and not-for-profit agencies (Queensland Legal Aid’s exercise of consumer power, Family Court regulations and NATA accreditation). On the other hand, stabilization
strategies inform price competition; most obviously, in the case of horizontal integration and diversification, facilitating economies of scale.

Notwithstanding the fact that unalloyed price competition rarely occurs in the real world, the neo-liberal paradigm offers a model against which real-world markets may be measured. Economic sociology provides an important framework for addressing real-world markets, but it does not currently offer a model in a way that is comparable to that of the neo-liberal paradigm. On this account economic sociology struggles to ‘go beyond’ critique and develop a more proactive sociological model of economic behaviour.

References


