Entrepreneurs and legitimacy: a case study of the paternity testing industry in Australia

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Abstract:
The paper uses the paternity testing industry to explore the importance of legitimacy for entrepreneurs in the creation of new industries. Following Aldrich and Fiol (1994), it distinguishes between cognitive legitimacy whereby entrepreneurs must persuade others of the ‘tangible reality of the new activity’, and sociopolitical legitimacy whereby they must persuade others that it is ‘appropriate and right, given existing norms and laws’. The first wave of entrepreneurs in the paternity testing industry was fundamentally concerned with its cognitive legitimacy. For the most part they were concerned with technical and procedural issues, in order to satisfy their customers in government and law. The fact that government agencies were their main customers made their task much easier. To the extent that cognitive legitimacy was resolved, so was sociopolitical legitimacy. The second wave of entrepreneurs was also concerned with cognitive legitimacy, but in a more complicated way. In extending the market for paternity testing, they established cognitive legitimacy among the wider public through intensive media exposure, but breached the procedural protocols established by the first wave of entrepreneurs. In turn, the new entrepreneurs compromised the sociopolitical legitimacy of paternity testing. In other words, cognitive and sociopolitical legitimacy are not necessarily consistent.

Since the 1980s economic sociology has flourished. Yet sociologists have been ‘minor players’ in the growing body of research on entrepreneurship (Aldrich 2005: 452), and the work they have done has been ‘of a very abstract nature’ (Swedberg 2000: 9). On this account, Richard Swedberg – one of the pioneers of the new economic sociology – has observed, ‘if the social sciences are to get a better handle
on entrepreneurship, they will have to learn to pay more attention to the concrete ways in which entrepreneurs locate and exploit opportunities’ (Swedberg 2000: 10).

This article is about entrepreneurship in the paternity testing industry in Australia. This is a new market, grounded in commodification of something which once could not be done, let alone commodified. Its dynamics highlight problems of legitimacy faced by entrepreneurs in new industries (Aldrich 2005: 467-9). They also provide an opportunity to explore the ‘concrete ways in which entrepreneurs locate and exploit opportunities’ (Swedberg 2000: 10).

**Entrepreneurs and Legitimacy**

The Austrian economist Joseph Schumpeter is the point of departure for much research about entrepreneurship. Schumpeter took issue with mainstream economics’ assumption of a static economy based upon equilibrium. He argued that entrepreneurs were the source of ‘creative destruction’ in capitalist societies. In turn, he identified five main types of entrepreneurial behaviour: ‘the introduction of a new good’, ‘the introduction of a new method of production’, ‘the opening of a new market’, ‘the conquest of a new source of supply of raw materials or half-manufactured goods’, and ‘the carrying out of the new organisation of any industry’ (Schumpeter [1934] 2000: 51-2). In practice, researchers in the field of entrepreneurship have struggled to operationalise these behaviours, commonly settling for a definition framed in terms of founding a new organisation (Aldrich 2005: 457).

Whereas Schumpeter presented a heroic and individualistic conception of entrepreneurs, economic sociologists addressed the ‘larger network, institutional, cultural or historical’ context within which they acted (Granovetter 2002: 42). One promising line of inquiry addressed the institutional context of firm creation. Nascent entrepreneurs in new industries ‘must discover or create effective routines and competencies under conditions of ignorance and uncertainty’ (Aldrich 2005: 467). Moreover, their organisations ‘must establish ties with an environment that might not understand or acknowledge their existence’ (Aldrich 2005: 467). In other words, they face ‘legitimacy constraints’ (Aldrich and Fiol 1994: 646), which they must overcome if their enterprises are to survive and prosper.

More specifically, Aldrich and Fiol distinguished between two forms of legitimacy. *Cognitive legitimacy* refers to the spread of knowledge about a new venture. In the first
place, entrepreneurs must convince others – such as financiers, employees and buyers - of the ‘tangible reality of the new activity’ (Aldrich and Fiol 1994: 651). The highest form of cognitive legitimacy occurs when a new product, process or service is a taken-for-granted part of the sociocultural and organisational landscape. Following cognitive legitimacy, sociopolitical legitimacy refers to the acceptance of a new venture by ‘key stakeholders, the general public, key opinion leaders, or government officials’ as ‘appropriate and right, given existing norms and laws’ (Aldrich and Fiol 1994: 648).

The current study

In the late 1980s and 1990s entrepreneurs created a paternity testing industry in Australia. The new industry highlights the legitimacy constraints of entrepreneurs. This paper addresses the legitimacy constraints of entrepreneurs in the Australian paternity testing industry, and the articulation between cognitive legitimacy and sociopolitical legitimacy.

There is a small but growing literature about the paternity testing industry. It identifies how ‘a number of social developments or trends have combined to expand the use of DNA-based identity testing and intensify conflict around applications of this technology within families and, more broadly, intimate relationships’ (Anderlik and Rothstein 2002: 216-21). These developments include the acceleration of genetic research, government welfare policy, the fathers’ rights movement, and intense media interest (Nelkin 2005: 4). The literature also identifies paternity testing without the consent of the mother as the most contentious regulatory issue for governments (Gilding 2004).

This paper depends partly upon what is on the public record, notably a government-commissioned inquiry into the ‘Protection of Human Genetic Information’ (ALRC/NHMRC 2002). Yet there is not a lot on the public record about the paternity testing industry. For the most part, the paper is based on interviews with 17 key informants from major cities around Australia, including Melbourne (10), Sydney (5), Brisbane (1), Perth (1) and Adelaide (1). Of these informants, eight were middle and senior management from all of the current parentage testing laboratories; four were senior management from government agencies instrumental in purchasing the tests; three were one-time management who were active in the formation of the industry, one was a representative of a US biotechnology firm with a stake in the industry; and
the other was a representative from the National Association of Testing Authorities, the main regulatory authority in Australia. The interviews occurred between April 2003 and September 2005.

**The first wave**

From the mid 1980s there emerged a market in paternity testing in western countries, including Australia. It emerged in the wake of new technologies: first, the elaboration of serological (blood-based) testing; then the invention of genetic identity testing, using what is known as Restriction Fragment Length Polymorphism (RFLP) and Variable Number Tandem Repeats (VNTR); and then new DNA-based techniques grounded in Polymerase Chain Reaction (PCR) and Short Tandem Repeats (STR). The intellectual property for these techniques was held in the US and (to a much lesser extent) in the UK. The firms which owned this IP became the ‘upstream providers’ in the industry. The Australian representative for one of these firms recalled, ‘The story that I was always told ... was that ... the guys that made the money in the gold fields were not the guys digging for the gold, but the guys that sold the shovels’.

The first wave of entrepreneurs in the emergent Australian industry consisted of ‘downstream providers’, namely ‘the guys digging for gold’. They came from nearby science-based industries, that is, blood products, medical testing, biotechnology and forensics. In doing so, they drew upon existing technology, expertise and networks. In the mid 1980s the Sydney-based Silbase Scientific Services became the first private provider, using HLA (white blood cell) techniques. In the late 1980s another Sydney-based firm Genetic Technologies attempted to take a monopoly position in the Australian industry through a license with a US firm for RFLP/VNTR based techniques. In the wake of PCR/STR techniques, entrepreneurs proliferated – believing, as one player put it, that paternity testing was ‘money for jam’. For the most part they serviced regional state-based markets, using ‘kits’ (produced by upstream providers in the US) bundling together reagents, patents and validation.

The buyers were overwhelmingly government agencies, or individuals obliged to comply with them. The Child Support Scheme, introduced in 1989, required that unmarried mothers identify biological fathers as a condition of welfare assistance. In the event of disputed paternity, welfare and child support agencies referred applicants
to the legal system and, in the event that they were unable to bear the costs of legal advice, to Legal Aid. The legal and welfare systems employed the new technologies as a means to resolve biological paternity and child support. From the start the state-based Legal Aid units were the biggest bulk and repeat buyers of paternity tests in the country (Gilding 2006: 88-9).

In this context, entrepreneurs had to convince lawyers of the ‘tangible reality’ of the new technologies (Aldrich and Fiol 1994: 651) – that is, that they were valid and reliable. This process was mediated by legal networks and precedents. Most notably, in the late 1980s the industry pioneer Silbase, relying on serological techniques, withstood the challenge of Genetic Technologies, with its DNA-based techniques. Genetic Technologies’ one-time manager described how ‘the legal market, which is basically what we were targeting, is far more conservative than the scientific sort of market’. On this account, ‘they’d much rather stick with tried and true technology that wasn’t as gee whiz, [rather than] stake their clients or their case on untried technology’. Similarly, another competitor in the Sydney market recalled how Silbase ‘had the referral base stitched up basically ... through Legal Aid and the Family Court system’. Even so, by the early 1990s Silbase had adopted ‘kits’ grounded in PCR/STR techniques. As one of its owners explained, the kits were ‘scientifically validated’, ‘extensively described in the scientific literature’, and came ‘with a warranty that they will perform under certain conditions and certain circumstances’.

Indeed, paternity testing is an opaque product, where customers depend heavily upon the expertise and integrity of providers. The fact that governments had a stake in the product meant that they had a particular interest in its regulation. Family Law demanded that paternity tests met standards of scientific reliability, directed towards ‘the protection of the integrity of bodily samples, and the technical accuracy of the testing process’ (ALRC/NHMRC 2002: 756). It also demanded that tests with legal standing be conducted by accredited providers only, with the knowledge and consent of the mother. In the early 1990s the Federal Attorney General was the accreditation authority. In the mid 1990s, the Attorney-General transferred responsibility to the National Association of Testing Authorities (NATA), an independent, private, not-for-profit company that manages accreditation across a range of industries.

Briefly, cognitive legitimacy in the early years of the paternity testing industry involved establishing that the scientific techniques were valid and reliable. A variety
of parties contributed towards the cognitive legitimacy of the new industry. They included scientists, upstream providers based in the US and UK, local scientists-cum-entrepreneurs and government agencies. The role of government agencies - as customers and regulators - was especially important. Insofar as government agencies actively promoted the cognitive legitimacy of the new industry, they also promoted its sociopolitical legitimacy.

In this context, small state-based providers proliferated. In turn, there was more competition for Legal Aid work; Legal Aid agencies used their market power to press for lower prices, effectively creating a national market; providers competed on price for their business, and many of them got into trouble. By the late 1990s the Melbourne-based biotechnology firm GenType – which later changed its name to Genetic Technologies, one of its acquisitions - proceeded to buy paternity testing businesses around Australia. The early phase of entrepreneurship and industry creation had given way to industry consolidation.

**The second wave**

From the late 1990s a second wave of entrepreneurs extended the ‘private’ market for paternity testing, as opposed to the market that was driven by government agencies. These entrepreneurs were trained in science, but they were also ‘outsiders’ in one way or another. In 1998 Vern Muir, a young zoology graduate, turned a small Melbourne-based bird sexing business DNA Solutions into a paternity testing laboratory, following persistent customer inquiries. A few years later Geoffrey Edelstein, a controversial deregistered doctor-cum-entrepreneur, established a Melbourne-based brokerage Gene-E which outsourced its testing to US laboratories. By 2005 another brokerage had been established in Perth.

The private market mostly comprised men who doubted the paternity of their children, or perhaps the new wives or de factos of such men, or their parents. These men did not necessarily want tests that complied with Family Law regulations. That is, they did not necessarily want their wives or former wives to know that they were undertaking the tests; and they were not necessarily in a position where they could easily arrange the collection of their children’s blood or buccal swabs (of cells from the cheek inside the mouth) . Accordingly, DNA Solutions and Gene-E offered tests without the knowledge or permission of the mother; they offered mail order sampling
kits that facilitated home-based collection; and they accepted samples - such as hair follicles - that were not acceptable by NATA standards. More than this: the fact that the businesses were not accredited allowed them to compete on price, offering cheaper tests than competitors. Muir explained his strategy in the following terms:

Because we’d stepped into this [industry] because of the public need, I think it gave us an ability to sort of look at everything from an outside perspective ... and say, ‘Well, what do these people want?’ They just want to know the truth. They’re obviously in a situation and they need to know the truth. Well, how are they going to get it?

In contrast to the government-driven market, private customers resembled the classic neoliberal conception of the market, consisting of anonymous and atomistic individuals. On this account entrepreneurs relied upon the media and the Internet to reach them. In doing so, they established cognitive legitimacy among the wider public, building upon the legitimacy established in scientific, government and legal circles. The entrepreneurs also forged links with fathers’ rights groups, as vehicles that might deliver bulk customers. Vern Muir, for example, identified key events in the history of his business as high-profile coverage in the Melbourne tabloid *The Herald Sun* and the creation of a website. In his words:

We really set an idea that now all the other companies are doing. I mean, if you typed in DNA paternity testing, you got nothing – this is in 1998. You got a couple of billboards and all that. And we sort of came up with ‘Free kit, click here for your free kit, blah blah blah’, and people would order online and all that sort of stuff.

The accredited providers – or what one industry player called ‘the legitimate end of the market’ - were united in their opposition to non-accredited providers, challenging their protocols and their results. As one player commented: ‘You can’t set up a fish shop here without a license from the Health Department, but you can set up to do DNA tests and you can just ruin people’s lives’. In other words, they challenged the sociopolitical legitimacy of the non-accredited providers.

At the same time, accredited providers were divided over tests without the knowledge or permission of the mother. Genetic Technologies – the market leader – offered the tests (and home collection) on the proviso that they had no legal standing. Most accredited laboratories did not offer them. Some industry players were especially active in their opposition, on the basis of medical and legal ethics. More specifically,
they argued that non-trivial medical procedures normally require permission from both parents to protect the interests of the child; otherwise, they amount to assault. Accordingly, one player described the tests as ‘child abuse’. The refusal to do them was ‘absolutely bad for business’, but the alternative – ‘if there’s a buck in it we couldn’t give a stuff about the morals or the ethics’ – was not an option.

A 2002-3 government inquiry into the ‘Protection of Human Genetic Information’ – conducted by the Australian Law Reform Commission and the Australian Health Ethics Committee – brought regulatory issues in the industry to a head. Government, medical and legal organisations presented submissions for tighter regulation, including compulsory accreditation and prohibition of non-consensual testing. Fathers’ rights groups argued against regulation and compulsory accreditation, insisting upon the ‘fundamental and inalienable right of a father to know his own paternity’ (ALRC/NHMRC 2003: G280). Industry providers took different positions depending upon what they did (Gilding 2004: 72-4). The inquiry eventually recommended compulsory accreditation and prohibition of non-consensual tests. In this context, Vern Muir acknowledged that the future of his business was uncertain. In the event that the government acted upon the inquiry’s recommendations, he thought that he might move his business to Brazil. So far this has not been necessary.

**Legitimacy and paternity testing**

The industry players described in this paper meet definitions of entrepreneurship by any measure. Following Schumpeter, the science-trained entrepreneurs who set up the first paternity testing laboratories were responsible for ‘the introduction of a new good’; and the entrepreneurs who used the media and Internet to reach private customers were responsible for ‘the opening of a new market’. Following the more empirical tradition of entrepreneurial studies, these entrepreneurs were responsible for setting up new enterprises in a new industry.

The first wave of entrepreneurs was fundamentally concerned with the cognitive legitimacy of paternity testing, in the sense of establishing that the technology worked. As scientists from nearby industries, they were able to draw upon their scientific expertise to this end. For the most part they were concerned with technical and procedural issues, in order to satisfy their customers in government and law. They drew heavily upon a wider network of scientists, upstream providers and government
agencies. The fact that government agencies were their main customers made their task much easier. Cognitive and sociopolitical legitimacy were closely intertwined.

The second wave of entrepreneurs was also concerned with cognitive legitimacy, but in a more complicated way. In extending the market for paternity testing, they established cognitive legitimacy among the wider public through the media and Internet. As a result, paternity testing became something that most people knew something about, or (in Aldrich’s words) a ‘taken for granted part of the sociocultural landscape’. At the same time, the new entrepreneurs breached the procedural protocols established by the first wave of entrepreneurs and, in the absence of accreditation, their technical protocols became opaque. In turn, they compromised the sociopolitical legitimacy of paternity testing.

This case study highlights how legitimacy is pivotal for entrepreneurs in the creation of new industries; how different groups of entrepreneurs approach legitimacy in different ways at different times; and how cognitive legitimacy and sociopolitical legitimacy are not necessarily consistent. It also illustrates why entrepreneurs can be both celebrated for innovation and denigrated for anti-social behaviour. The line between the two can be a thin one.

References


