

Chapter 9

Introducing Fairtrade and Fairmined gold: An attempt to reconfigure the social identity of a substance

Peter Oakley

This chapter considers the multifaceted social identity of a particular substance¹ – gold – and how this identity is defended by groups, institutions and existing material culture in the face of challenges to its validity. This will be done through a case study of the rise and demise of a ‘new material’, Fairtrade and Fairmined (FT/FM) gold, created in an attempt to challenge the status quo. Campaigners’ concerted attempts to increase the multivalence of gold and the results will be considered using the analytical tool of *complexity*, an approach that helps explain how specific masses of gold can be considered and treated as different yet identical.

While the focus here is a specific material, the story of FT/FM gold has much wider implications. It exposes how dominant abstract understandings of what a particular substance is, among the specialists who work with it on a daily basis and the wider population, are shielded by practices and assemblages of objects not created to be, or generally considered as, protective. It also shows how these interlock to form a pervasive network. While influence or agency is not equally distributed across this network, there is no single dominant source, a feature that helps frustrate attempts at change. The case study therefore offers a theoretical template for researchers encountering similar, potentially protective systems.

Fairtrade and Fairmined gold: From beginning to end

On 9 February 2011, the Fairtrade Foundation presented a new material to the UK’s press. Hatton garden, London’s jewellery manufacturing district, was chosen for the public launch of FT/FM gold by Fairtrade and the Association for

Responsible Mining (ARM), the two organizations behind the initiative. The event brought together a mixture of professional activists, representatives of small scale miners, journalists, bloggers, managers, directors and jewellery designers and makers.

Among the presenters were celebrity jeweller Stephen Webster, Cristina Echavarria (secretary general of ARM) and Manuel Einoso Rivas (president of SONAMIPE, the Peruvian small-scale mining association). They all spoke passionately about the difference FT/FM gold would make to subsistence mining communities in Peru and elsewhere. The climax of the event was the unveiling of the first ingot of FT/FM gold ever made. The press launch was the culmination of a well-thought-out and executed publicity campaign. The event itself was timed so reporters' articles would coincide with Valentine's Day. The launch generated sympathetic coverage in the mainstream and trade media (e.g. BBC Radio 5 2011; Bishop 2011; Taylor 2011a; Valerio 2011). FT/FM gold appeared to have a bright future.

In autumn 2012, Fairtrade began a review of the FT/FM gold standard. The review was ostensibly to 'make adjustments to the existing standards using the experience gained since product first went on sale last year' (Taylor 2012). But the review took place in a climate of concern. Fairtrade had anticipated FT/FM gold could capture 5 per cent of the world's jewellery market over 15 years (Maldar 2011). The actual take-up was falling far short of projections. In addition, existing manufacturing licensees were voicing concerns about FT/FM regulations and the rising cost of premiums. Some even claimed the FT/FM system was fundamentally unsustainable in its current form.

Fairtrade and ARM had anticipated the supply of FT/FM gold would consolidate into a steady stream, but it remained stubbornly erratic. At the launch, Fairtrade claimed there would be at least 40kg of FT/FM gold available during the first year, but the first jewellers who signed up to the programme had to wait four months for any FT/FM gold to appear (Harriet Kelsall, quoted in *The Jeweller* 2011). FT/FM gold was also scarce during the run up to Christmas, so FT/FM products made no major inroads into the United Kingdom's jewellery market. During 2012, the campaign lost momentum in the United Kingdom, and the Peruvian and Columbian miners (who were now producing more certifiable gold) were faced with a lack of buyers.

On the 15 April 2013, the Fairtrade Foundation and ARM announced they were dissolving the FT/FM partnership. After 22 April, the two organizations would promote their certification programmes independently (and, it turned out,

in competition against each other). Two years after its first appearance, FT/FM gold ceased to exist.

Researching Fairtrade gold

The author's first contact with the FT/FM gold initiative occurred during fieldwork for a research project on the United Kingdom's jewellery industry and its supply chains (involving gold refiners, fine jewellery manufacturers, distributors and retailers). From 2009 onwards, the project grew to include actively observing and interviewing professional campaigners and attending private campaign meetings, public events such as the press launch and debates on ethical gold sourcing held at jewellery trade shows.

The author also engaged in an unusual form of participant-observation. After having a series of articles on the ethics of gold sourcing published in a jewellery trade journal, he was repeatedly invited to give presentations and chair panels on ethical sourcing at industry events.

Alongside the fieldwork, the chapter relies on primary literature relating to the FT/FM gold campaign, gold trading and jewellery manufacturing and retailing. This includes UK jewellery trade journals, the campaign literature and internal reports produced by Fairtrade, ARM and other NGOs and global gold market surveys.

The fieldwork was conducted among elite groups: a techno-scientific elite, a managerial elite and professional social campaigners. The jewellery trade as a whole also behaves as an exclusive professional group. The methodological issues faced during the project were similar to those identified by other researchers (e.g. Gusterson 1997; McDowell 1998; Nader 1969; Rice 2010). Though a full discussion is beyond the scope of this chapter, it is worth noting that the author's previous employment as an analytical chemist and training as a jeweller repeatedly facilitated acceptance to these elites, but despite this the project still took four years of fieldwork to complete. The author's specialist expertise affected fieldwork in other ways; the observations of refining, assaying and manufacturing activities were undertaken from the position of an informed rather than naïve observer (cf. Laudel and Gläser 2007).

Though the fieldwork was undertaken among these elites, it is important to recognize that many of the products they created (objects, images, texts and regulatory systems) were meant for general consumption. The items of jewellery, promotional materials, campaign literature and FT/FM certification system were all intended to have widespread appeal and influence.

Their success therefore depended on them conforming to wider cultural expectations.

Using complexity

Fairtrade campaigners promoted FT/FM gold as a material distinct from all other gold. This was often expressed as a dualism: FT/FM gold versus 'dirty gold' (e.g. Maldar 2011; Valerio 2011, 2013). A reliance on these types of simplifications to describe the material world was criticized by Annemarie Mol and John Law in the introduction to their edited volume *Complexities* (Mol and Law 2002). Simplification's inherent reductionism, and its elision of whatever does not fit the preconceived schema, were considered by Mol and Law to impede an understanding of real situations. But how should we define complexity itself?

There is complexity if things relate but don't add up. If events occur but not within the processes of linear time, and if phenomena share a space but cannot be mapped in terms of a single set of three-dimensional coordinates. (Mol and Law 2002: 1)

Complexity admits of disjunctions and partial overlaps, the inability to impose overarching order and what Marilyn Strathern (1991) termed 'partial connections'. Admitting complexity presents specific problems for researchers. The lack of a predetermined stable framework amplifies the issues inherent in all ethnographic research and traditional associated modes of dissemination. But complexity can be a key analytical tool, explaining how apparently unstable or irresolvable tensions can be maintained indefinitely within cultural frameworks.

Unpacking the complexity of gold

Gold is a magnificent exemplar of how a particular substance can develop and maintain a complex social identity, and how this influences and constrains the actions of actors it comes into contact with. Gold's social identity includes four key facets: elemental gold, noble gold, transcendent gold and gold-as-money. All of these share a space, namely the yellow, heavy, metallic stuff we call gold – though the extent to which each predominates at particular times depends on the perceptions of observers.

Gold as a scientific object: Elemental gold

Today, across the West, gold is considered a chemical element. This perspective is underpinned by the cultural dominance of the scientific definition of reality, in particular the discipline of chemistry as a way of 'knowing' matter (Schummer 2008). Elemental gold is characterized by apparently inherent physical properties. It is one of only two distinctly coloured metallic elements and is heavy, highly ductile and extremely malleable: a piece of gold can be stretched into wires as thin as a hair or hammered out into a sheet only a few microns thick. As gold has the lowest redox potential of any metallic element, gold objects exhibit outstanding resistance to corrosion. In reality all these scientific properties of elemental gold are comparative, expressed relative to other chemical elements or compounds. Even supposedly abstract properties, such as weight or redox potential, ultimately rest on this type of material comparison (see Busch 2011; Gooday 2004).

Elemental gold is morally neutral: its properties are undirected and merely exist as inherent and identifying features that are *observer-independent* (Searle 1995). Though they may be extreme or unusual, these properties do not make gold more or less special than any other chemical element.

Creating a mass of completely isolated elemental gold is a practical impossibility. Physically existing gold is always understood to contain atoms of other elements, though the majority of these can be removed by using a succession of metallurgical technologies (a process called refining). Determining the percentage of gold in comparison to other elements existing in any particular physical mass is achieved through specialist analytical technologies (a process called assaying).

The majority of gold bullion being offered for sale in the major gold markets has been refined to, and confirmed as containing, 99.99 per cent gold. This substance is colloquially called 'four nines gold' (Capano 2008). Through refining, assaying and the material produced as result of these activities are all conceptualized in terms of scientific principles, their history and current practice are closely intertwined with the demands and needs of trade and manufacturing. Four nines gold can therefore be considered a type of informed material, similar to the pharmaceutical compounds described by Barry (this volume).

Gold as the king of metals: Noble gold

The modern scientific belief that gold is fundamentally unchangeable usurped an older European cosmological belief that gold was the ultimate maturation of mineral matter, the end product of the gestation of metals in the earth (Dobbs 2008 [1975]; Eliade 1962 [1956]). Many late medieval and Renaissance

alchemists understood the transmutation of base metals into gold as the speeding up of this natural process.

In contrast to the moral neutrality of modern chemical reactions, alchemical transmutation had strong spiritual connotations. The contemplation of transmutation was seen by many as a means of understanding the refinement or purification of the soul (Dobbs 2008 [1975]; Linden 2008 [1996]). For alchemists, gold's observable tendencies – resistance to decay or corruption by fire and refusal to mix with base or gross substances – were evidence of its elevated moral status.

Though alchemical cosmologies are no longer current, the notion that gold is somehow morally superior lingers. Commonly used English verbal analogies rely on a link between gold and desirable morals or perfection. People can be 'good as gold' or have 'a heart of gold'. The appealing visual ratio of 1:1.618 is called the 'golden ratio'. The scriptures also use gold as a metaphor for purity or moral elevation.

Gold as supernatural material: Transcendent gold

Gold can move beyond representing temporal nobility to become a materialization of divinity itself. Polished gold surfaces reflect the light as if the source exists inside the material, so burnished gold gives the appearance of being alive with a spiritual eminence (Clarke 1986; Schroder 2012). In addition, unlike other metals and all organic materials, gold does not decay, appearing to transcend the mortal world. Such incorruptibility is often considered a divine attribute (Cruz 1977).

These peculiar and visually enchanting properties have resulted in gold being the material of choice for representing spiritual space or creating objects with an overtly spiritual *raison-d'être* (Bernstein 2004; Clifford 2012). The royal crown, communion chalice and wedding ring, as well as the golden palace or statue of Buddha, all play on gold's transcendence to support their status as sacred objects.

Transcendent gold can be considered an entirely alienated substance: its perception does not encompass any prior history to its existence in the encountered form, whether this be as an object or surface (as with gold leaf or gold mosaic tiles).

The price of gold: Economic gold

Gold's resistance to corrosion also supports a more prosaic aspect of its social identity: its role as a store of wealth. In addition to being durable, gold is portable and easily identified and quantified. It is scarce enough that a small amount can be used in direct trades, but common enough to be available for a good many



trades. Gold can therefore become the key medium of exchange – gold can become money (Simmel 1978).

It was during the late nineteenth century that gold reached its apogee as a financial instrument. The comparability of the gold-based currencies of the Western imperial powers led to a financial system called the *gold standard* (Eichengreen 1985; Ferguson 2009 [2008]). The gold standard was replaced by fiat currencies during the 1920s, but the idea of gold-as-money clung on (Bernstein 2004; Green 1968, 1985 [1982]). When national and international regulations covering the personal ownership and the international transport of gold were relaxed in the 1980s, it led to a resurgence of gold hoarding by individuals (Bernstein 2004; O’Callaghan 1993).

Advocates have made repeated attempts to revive a role for gold in national and international finance (e.g. Lewis 2007). Despite their efforts, situations where gold can be used directly as a medium of exchange remain strictly limited. But though gold is no longer money in the strict legal sense, it still retains its place in the popular Western imagination as the ultimate store of wealth.

Adding more complexity: Immanence versus provenance

When an object is made of gold, any combination, or even all of these facets of gold’s social identity can be in play simultaneously. A gold coin can be seen as an economic instrument, material evidence of the nobility (and sometimes divinity) of the ruler who had it minted and a mass of alloy with a specific ratio of gold atoms (Oakley 2013). Though these perceptions all draw on the same material features of gold, they cannot be collapsed into one another.

Despite the divergence of these perceptions, they are all essentially immanent: they exist at each and every point of contact and are open to independent reconfirmation at any moment. In contrast, FT/FM gold is constructed in terms of its circumstances of origin. This emphasis on selected aspects of the history of the constituent material – its *provenance* – adds another, irreducible dimension. Provenance is intangible. It cannot be determined by scientific assay, by direct observation or by financial appraisal, but only by trust in the authority that proclaims it.

Fair trade, Fairtrade and the ft/fm gold campaign

From fair trade to Fairtradetm and corporate engagement

Concerns over how commodities² are sourced in the developing world are fundamental to the fair trade movement. The first fair trade networks were



established by activists in Europe and the United States in order to help coffee farming cooperatives in Latin America circumvent the free trade market. They believed establishing direct connections between coffee growers in the Global South and coffee drinkers in the Global North would engender solidarity between producers and consumers (Bowes 2011; Luetchford 2008; Perla 2008).

The first fair trade networks were ad hoc, but as the movement grew it became increasingly necessary to regulate who was eligible to join fair trade supply chains (Renard 2005). In 1997 the marketing organizations across the Global North joined together to create an international certification body, the Fairtrade Labelling Organizations International (FLO). In 2002 FLO created an independent company, FLO-CERT, to certify licensees. 'Fairtrade' was registered as a brand name along with the Fairtrade Certification Mark (Fairtrade 2013).

Since the 1990s, the organization's theoretical antagonistic stance towards commercially driven corporations has coexisted with a realpolitik of direct corporate engagement. This was initiated by the Fairtrade Foundation (the Fairtrade marketing organization for the United Kingdom and Ireland), who claimed that unless Fairtrade 'mainstreamed', it would never become socially influential (Bowes 2011; Lamb 2008). Their first corporate partnership was with a major UK retailer, the Co-operative Society (the Co-op), who chose to sell Fairtrade chocolate under the Co-op's own-brand label. The subsequent growth in Fairtrade's market share and public profile (Bowes 2011; Reed 2009) convinced the movement as a whole to adopt the corporate engagement strategy.

The Co-op's directors chose chocolate as their first Fairtrade product in part due to its potential emotional impact:

[We have] chosen chocolate as the focus for making Fairtrade mainstream because of the stark – even obscene – contrast between the pleasure from eating it and the suffering that goes into making it. (Co-operative Group 2002, quoted in Bowes 2011: 126–127)

An emphasis on the disparity between the enchantment of the product and the abject conditions of producers has become a key promotional tool in subsequent Fairtrade campaigns, including the one for FT/FM gold. In the case of gold, the strategy was underpinned by questioning notions of gold's inherent purity and claims that only FT/FM gold was really pure (see Fairtrade Foundation 2012; Maldar 2011).

Fairtrade's increasingly formalized organizational structure and growing reliance on commercial partnerships has led to internal tensions within the

movement, particularly between the European and US marketing organizations. Some members have accused their leaders of turning fair trade into a commercial brand, compromising its founding ideals (Bacon 2010; Lekakis 2011; Renard 2005).

The FLO-ARM partnership

The FT/FM gold initiative echoed Fairtrade's beginnings in terms of the location and organization of the producing communities. The idea that responsibly sourced gold could be certified was first proposed by ARM, a Latin American association of subsistence mining communities that promotes responsible mining (Echavarria 2008). They approached the Fairtrade Foundation, who petitioned FLO to construct a standard. FLO and ARM then formed a partnership to jointly develop the standard. The resulting product would be called Fairtrade (relating to the FLO licensing system) and Fairmined (meeting ARM criteria) gold.

The FLO/ARM team drew on ARM's understanding of the needs of subsistence miners and FLO's experience of creating certification systems (Echavarria 2010; Madlar 2011). However, they lacked members with expertise of refining technology, large-scale jewellery manufacturing or the global gold trading system. Consequently, the resulting standard was severely hampered by misconceptions and prejudices regarding these activities. But the costs and demands of refining, the amounts of gold needed by large manufacturers and the mechanism behind the London gold fix (the price set for large international gold trades) were all to play a major role in the subsequent story of FT/FM gold.

The FT/FM gold standard

The standard that emerged had four main features. First, FT/FM gold had to be bought from the miners at 95 per cent of the day's gold fix. Second, business submitting a finished gold item for hallmarking had to pay a premium to have the item stamped with the Fairtrade and Fairmined marks. The premium, paid to the miners, was 10 per cent of the price of the finished item for FT/FM gold and 15 per cent for FT/FM ecological gold (which was subject to further, environmentally friendly production criteria). Third, all FT/FM gold was to be subject to a 'track and trace' system: the movements and use of all FT/FM gold had to be recorded for the FLO-CERT auditors. Fourth, all businesses handling FT/FM gold from mine to hallmarking had to purchase a license from Fairtrade (Fairtrade Foundation 2012; Maldar 2011).

Determining the price of gold

The FT/FM project team based the price for FT/FM gold on the London gold fix set by the London Bullion Market Association (LBMA). Despite the key role the fix was accorded, the FT/FM team described it in very simple terms:

The London gold fix (or LBMA fix) as it is known, is set twice a day and is the global price reference for gold trading worldwide. These decisions, taken by traders in the City of London, have a major impact on the lives of artisan miners, thousands of miles across the world. (Maldar 2011: 8)

The Fairtrade Foundation's CEO, Harriett Lamb, was equally elusive about the fix mechanism at the FT/FM gold launch: 'these people [the LBMA] set the price for gold. I don't know who these individuals are' (personal communication 2011).

The impression being given by Fairtrade was that the LBMA arbitrarily decided the daily gold price. Others, including economic researchers, describe the LBMA as part of a wider network of gold trading exchanges, including the Gold Pool in Zurich, the COMEX market in New York, and the Hong Kong Exchange (Green 1968, 1985 [1982]; O'Callaghan 1993). Together they create a global gold market, with the daily fix being as much an outcome as a driver of events. Even within the LBMA, the fix is the result of competition rather than collusion; the agreed price is the outcome of a series of competitive bids between LBMA buyers and sellers. The fix exerts its wider influence only because of the size of the LBMA's trades (sometimes large multiples of metric tonnes) (Green 1968, 1985 [1982]; London Bullion Market Association 2013).

The project team's pricing decision exposed a paradox of FT/FM gold. Apparently essentially different to all other gold, its value was to be calculated by referring to the price set for other gold. But as the FT/FM team set the price of unrefined FT/FM gold at 95 per cent of the fix (the price of processed gold sitting in bank vaults), the additional refining, assaying and transport costs (including export licenses) pushed the price of refined FT/FM gold far above the LBMA fix. The project team's assumption that the LBMA fix was *the* gold price, rather than the internally negotiated price for a closed market whose members traded large volumes of four nines gold, was to have dire repercussions.

The resurgence of economic gold

The full implications of the FT/FM pricing mechanism only became apparent as the banking crisis of 2008–2009 mutated into a sovereign debt crisis. Five years of economic turmoil led to gold's role as a store of wealth coming to the

fore. The phenomenon of cash-for-gold took hold across the United Kingdom, with financially distressed families selling their gold jewellery to local jewellers, pawnbrokers and postal gold companies. In 2011 the amount of gold being sold as scrap exceeded the amount used for manufacturing jewellery in the United Kingdom (Thomson Reuters GFMS 2012). This scrap fed the surging international demand for less spiritually imbued but still highly desirable investment objects: gold bullion bars and coins.

This demand led to an unprecedented rise in the gold price. In 2006, when ARM had first proposed a fair trade supply chain for gold, the fix was below \$600 per ounce (CPM Group 2006). By the time FT/FM gold was launched, the fix was approaching \$1,400 (CPM Group 2011). The price eventually peaked at \$1,896 in early September 2011, after which it stabilized between \$1,550 and \$1,800 for the following year (CPM Group 2012; Thomson Reuters GFMS 2012).

During this period gold jewellery prices rose significantly year after year, while incomes came under pressure. For many consumers, gold jewellery shifted from being an impulse purchase to a considered luxury. At the FT/FM launch and in promotional literature the Fairtrade Foundation quoted the 2005 figures for gold items hallmarked in the United Kingdom – 19 million – as evidence of the programme’s potential impact (personal communication 2011; Fairtrade 2011). This was the year before the UK jewellery mass market collapsed (Thomson Reuters GFMS 2012, table on p. 88). The figure for 2012 was just over 4 million items (Birmingham Assay Office 2013, table p. 8).

The leaders of ARM appeared oblivious to the pressure the gold price was placing on jewellery manufacturers. They assumed jewellers were making huge profits, some of which should be diverted to their miners. In an interview the day after the FT/FM gold launch, Cristina Echavarria claimed that as jewellery is a designed product and jewellers have built up brand names: ‘There is greater room for the jeweller to absorb this [the FT/FM] premium and not necessarily pass it on to the consumer’ (BBC Radio 5 2011). This expectation was placed on the shoulders of the FT/FM licensee jewellers, who were, in most cases, small, cash-poor businesses with minimal operating profits and little brand equity (see Fairtrade 2011; Taylor 2011a, 2011b).

ARM’s representatives held a similar position during the 2012 review. They claimed the 10 per cent premium should be retained, even though the actual payment now equated to 25 per cent of the gold price when the premium was set. This charge came on top of the inflated price manufacturers were paying for refined FT/FM gold over and above the now massively risen daily fix. The miners’ perspective mirrors that of other Fairtrade producers. Despite Fairtrade’s rhetoric and consumers’ expectations of solidarity, researchers keep finding

that Fairtrade producers primarily see transactions in purely commercial terms and cannot understand why retail prices are higher than the price paid for their commodities (see Fischer 1997; Lyon 2006).

The mass balancing controversy

The lack of empathy on the part of the miners was not the only contentious issue. In September 2012, a group of licensees posted an open letter condemning a proposal to include mass balancing in the revised FT/FM standard.

The FT/FM project team had initially assumed gold would be similar to Fairtrade's agricultural products (see Fairtrade 2011: 8). These have linear supply chains that are amenable to 'track and trace'. But gold is different: due to its high value, durability and recoverability, the gold industries – at both macro and micro levels – have become acutely dependent on 'mass balancing'.

The LBMA functions in part as an international mass balancing system for bullion. LBMA members holding 'open accounts' must accept whatever London Good Delivery Bars (LGD bars) they are offered when they redeem their gold; they get the same amount of gold, but not necessarily the same pieces of bullion (Capano 2008; London Bullion Market Association 2013). In this context, LDG bars come as close to the ideal of a commodity as is physically possible (Appadurai 1986). As a consequence, the LBMA can make extensive use of ownership swops to complete international gold trades rather than physically move bullion every time it is traded (Green 1985 [1982]). This eliminates the costs, risks and delays associated with transporting gold.

Mass balancing also occurs on a smaller scale in industrial refining and manufacturing processes where gold is 'trapped' in technical systems. If a factory or refinery operates a mass balancing system, clients will get the same amount of gold they supplied, but again not necessarily the same piece. The surfeit of gold needed for the process to operate is provided and owned by the factory, stays onsite and is treated as a material asset for accounting purposes.

In contrast, Fairtrade's 'track and trace' certification system required that licensees kept FT/FM gold separate from other gold stocks. Due to the limited amount of FT/FM gold in circulation it was impossible to use machinery or equipment that required large volumes of gold to operate effectively. Processes dependent on large volumes of gold, for example, chain making, electroplating or specialist alloy production never became available to FT/FM licensees. The technologies licensees were able to use, such as casting, had to be run as bespoke operations, pushing the finished price of FT/FM gold items even higher.

Industrial manufacturers had developed a high level of *path dependency* (see Busch 2011) towards the concept and practice of using interchangeable stocks of gold. While not ideologically opposed to the ideals of Fairtrade, managers and directors knew their production systems could not accommodate the FT/ FM regulations and remain commercially viable. Licensees found they were restricted to a limited range of technical options compared to competitors using ordinary gold.

FT/FM campaigners fought over the proposed inclusion of mass balancing as if it were an abstraction that could be comprehensively rejected. The extent to which it manifested itself within the industry in material ways: in ownership swaps of bullion, in the nature and intentions built into the machinery and even the written accounts that were used to determine the profits and viability of individual companies was not understood.

Oro Verde goes to auction

Pricing and mass balancing were not the only problems to affect the campaign. In December 2012 Oro Verde announced they would be selling their gold by auction rather than directly to FT/FM licensees. Corporacion Oro Verde was a founding partner of the FT/FM gold campaign (Maldar 2011: 15–16). Oro Verde gold comes from the Chocó region of Columbia and is extracted using panning and sluicing techniques without any recourse to mercury or cyanide (Oro Verde 2013). At the time of the 2012 review, Oro Verde's miners were the only producers of FT/FM Ecological Gold.

Though compromising to the FT/FM gold initiative, Oro Verde's decision was a practical response to wider events. Oro Verde had built a loyal client base in the United States. During 2011 Fair Trade USA (the US Fairtrade marketing organization) was petitioned to join the FT/FM initiative. But in December 2011 Fair Trade USA left the International Fairtrade Association, due to the strategy direction of the Association (including the adoption of corporate engagement). After the split, jewellers in the United States were never going to be able to call the material they purchased FT/FM gold. Oro Verde had to cope with its partners splitting into competing factions at the same time as the gold market stagnated and the FT/FM campaign failed to deliver the promised number of new licensees. Despite campaigners' optimistic claims, FT/FM gold remained an extremely niche market that threatened to leave the Corporacion with potentially unsellable stock.

Concerning complexity

Why did the FT/FM partnership crumble? The answer is complicated, but the complexity of gold certainly played a role. It was apparent that the campaign team were ambivalent about the substance they were attempting to redefine. They attempted to subvert the noble and spiritual dimensions of gold: the launch was timed to coincide with Valentine's Day and promotional material repeatedly contrasted the miners' poverty with the enchantment of gold jewellery. Campaigners directly challenged gold's spirituality: 'This idea of purity, what are we hanging this on?' (Greg Valerio, presenting at the Eco-jewellery workshop, Hatton Garden, 3 November 2010). Gold was presented as an apparently sentient and untrustworthy substance: 'Gold does not want you to know what it is doing, or where it is . . . gold is a very bad master' (ibid.; see also Valerio 2011). Yet the same campaigners always believed gold wedding rings would be a key product line for FT/FM gold (personal communications 2010, 2011).

The Fairtrade campaigners believed the inherent nobility of the subsistence miners, together with the moral superiority they attributed to the fair trade movement and their personal efforts, would redeem this duplicitous substance and imbue it with a new spiritual quality. This romantic perception of subsistence producers and fair trade contrasted with the miners' more prosaic and ruthless approach to the trade arrangement at the heart of the FT/FM system. Due to a belief in the primacy of fair trade ideals, the campaigners also suffered from unrealistic assumptions about the level of mainstream consumer support the FT/ FM initiative could rely on.

The tension between transcendent gold and economic gold was not the only barrier. Provenance, dependent on distinctiveness, was antithetical to the universalizing force that underpins elemental gold. The technologies reliant on the concept of elemental gold aided in its repeated triumph in the skirmishes that resulted. Elemental gold is more than just an abstraction. It is made manifest in industrial gold manufacturing, being embedded in the physical structures and operational capacity of the machinery and the praxis of operators. It also materializes in a different guise in company accounts and operating reports, where it underpins mass balancing tallies. These elements all reinforce each other, making the resulting assemblages thoroughly inimical to the idea and practice of treating any mass of gold as a singularity.

In contrast to the strength that centuries of interlocking and reconfirming practices gave immanence, the provenance essential for FT/FM gold was utterly dependent on a single organizational structure built from FLO's standard, FLO-CERT's certifications and the Fairtrade Foundation's labelling and

promotional machinery. If this system was to break down or lose legitimacy, FT/ FM provenance would vanish. The damage to the Fairtrade Association caused by Fair Trade USA's succession resulted in a decline in FT/FM gold's viability. The new substance was socially unstable: each mass could potentially revert to ordinary gold as a result of a local lapse in the credibility of its provenance or a complete collapse of the certifying system.

Conclusion

FT/FM gold was a socially complex substance that carried numerous incommensurate and contradictory aspects. To the immanence of its identity as a scientific object, store of wealth and representation of nobility and transcendence (features it shared with all gold) was added the intangible, observer-dependent property of a provenance that valorized the circumstances of its extraction.

It proved possible to create FT/FM gold as an intangible entity. This was done through the campaign literature of the Fairtrade Foundation and the regulatory standard for FLO and FLO-CERT, as well as in the beliefs of the campaigners. It turned out to be more difficult to maintain as a physical substance, a situation that the miners and manufacturers who supported the initiative found out to their cost. Exploring the contrast between the stability of substances as abstract ideals and actual physical stuff is a potentially fruitful means of analysing materials from a social science perspective that has yet to be fully capitalized on; as FT/FM gold shows, the results may be counter-intuitive as well as illuminating.

The FT/FM gold story demonstrates how each aspect of gold's social identity connects with specific social institutions that reconfirm and so protect that aspect's validity. Elemental gold is made manifest by the theory and practices of the techno-scientific activities called assaying and refining; noble gold is reinforced by the use of gold in status objects old and new; transcendent gold is underpinned by cosmologies that provide a detailed exegesis for the gold objects that enchant viewers and owners; economic gold relies on the trading floors that minute by minute reassess and broadcast the level of demand for the yellow metal. Research on materials needs to encompass these networks. Each is essential for the growth and ossification of any facet of any particular material's identity rather than an excrescence that subsequently attaches to an already formed understanding.

The creation of FT/FM gold was an attempt to directly challenge what campaigners saw as social and environmental abuses associated with the gold industries. But while the campaign focused on conceptualizations, creators of

physical masses of FT/FM gold found they were faced with pre-existing technological and trading systems – consisting of human actors and inanimate objects (both material and immaterial) – which could not be easily reconfigured to accept the new paradigm. The interpenetration of *what is thought* and *what is done* became startlingly apparent as FT/FM gold was found to be excluded from large swathes of manufacturing and trading practice. The protective aspect to these systems was all the more remarkable for the lack of any overall organization. This diffusion of agency and absence of guiding intention proved to be a key feature of the system's overall resilience, as there was no specific target the campaigners could attack.

While gold is an unusual, or perhaps extreme, substance, there is no reason why the same types of networks could not exist around all materials that are socially employed. Too often researchers are content to accept material properties as inherent, without considering how these properties have been developed or are maintained. The research that has been conducted sits inside particular disciplines, remaining isolated and often marginal. In food studies, work on specific supply chains has uncovered similar networks and contestations (e.g. Busch and Tanaka 1996; Cidell and Albert 2006). Researchers in science and technology studies have started to consider how chemical reagents assume an identity *qua* chemical reagents (e.g. Klein and Spary 2010). There are also cases of art and design historians focusing on the interaction between a specific material and classes of objects made from it (e.g. Baxandall 1980; Nichols 2000). But the social sciences have not yet comprehensively addressed the questions these individual studies throw up. Broader examinations of how materials come to be seen the way they are in these and other social spheres (or across many) and a more developed understanding of the role of networks in these processes would be of immense academic interest, as well as of practical benefit.

Notes

- 1 . In this chapter the word 'substance' is used to describe a physically existing, formally mutable material with a set of recognizable and determinable properties. This definition aligns with its usage by contemporary Western scientists (cf. Soentgen 2008) and philosophers (e.g. Putnam 1975). This contrasts with use of the word as a specialist term in anthropology to describe a supernatural and sometimes intangible material that carries life-force or fertility (e.g. Douglas 2008 [1966]; Küchler 2002; Warnier 2007).
2. 'Commodity' is used here to describe one of a restricted number of raw materials with a dedicated international market rather than the Marxist sense (cf. Appadurai 1986).

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