

ECONOMIES OF DESIGN

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4

GLOBAL TRADE AND MOBILITIES

The notion of globalisation often suggests an increasingly homogenised world. Global trade has indeed grown exponentially as barriers to the movement of finance and goods have been relaxed and transportation has been made easier. Chapter 4 shows how, as a result, the geographies of design have also become more varied. An example here is in the fashion industry where design and production can either be separated or concentrated, depending on the relationship of local conditions to global factors. Beyond trade, we also consider the movement of people between countries and how design facilitates mobilities.

Sometimes, globalisation involves the flattening out of cultural data. The homogenous design of word-processing programs, jeans, banking facilities or fast food outlets suggests an increasing world of sameness. Global infrastructures facilitate the flows and movements of goods, finance, services and people, producing increased possibilities for value creation. This is where we can talk about ‘extensities’ – serially reproduced goods, services and systems.

But extensities are also dependent on intensities. In straightforward design terms intensities may be such things as prototypes or brand guidelines that lead to extensities; that is, their mass, serial reproduction, either as direct facsimiles or through various applications in different formats or registers. There are also spatial intensities that produce more design outcomes. These may be cities that are renowned for their fashion industries or global corporate design headquarters. Or we might even think of processes of urbanisation as producing concentrations of both consumer and producers that feed into global processes of trade. Fashion production has become increasingly dependent on migration to cities as a labour source and as a market, for example. Paradoxically, it seems that the deployment of sameness is also dependent on the concentration of difference. Globalisation produces relocalisations and vice versa.

This chapter focuses on the processes that *make* globalisation, the relationships of local and global economic activities and how design is active in this making. We can look at this in terms of macro-economic shifts, particularly those facilitated by waves of deregulation since the 1980s. Or we might analyse it from the perspective of more detailed business decisions concerning the availability of creative and productive labour, transport costs or the availability of materials. And we can also take into account localised governmental policies that privilege particular design economies in locations. It is a multilayered and uneven world of design out there.

In the first section, the scale of global trade that has developed since the 1980s, but speeded up through the new economy of the 1990s, is discussed and reviewed. This is placed in the context of the bigger picture of legislative change that has contributed to the deregulation of markets and the formation of global economies of design. The central part of this chapter, however, is concerned with constructing an alternative account to conceptions of globalisation that involve mass standardisation, frictionless movement and the death of distance. Instead, I show that the geography of design and production is more variegated and subject to many factors in its arrangement and distribution. While this mostly focuses on the design, manufacture and distribution of goods, the latter part of this chapter discusses the movement of people in two ways. One is in how mobilities can create particular, intensive design agglomerations. The other is on how particular designed systems are widely deployed, in part to absorb mobilities. Half-way through this chapter, as a disruptive insertion, I provide an account of more ‘activist’ responses to the environmental and human costs of globalisation.

GLOBAL TRADE

The general trends in global trade since the 1980s have worked in two complementary vectors. One has been in the massification and standardisation of overall infrastructures that facilitate the production, movement and reception of merchandise. This includes the harmonisation of technical and legal structures but also the standardisation of things such as

communication and transport protocols. The other has been in a move to more complex and detailed trade relationships. These have made the grounds of competition progressively more intense, within which design has assumed an increasing central role.

The evidence for the exponential growth in global trade is incontrovertible. This is easily demonstrated statistically. World merchandise exports rose in value from US\$2.03 trillion in 1980 to US\$18.26 trillion in 2011 – a 7.3 per cent annual growth. In volume terms, world merchandise trade quadrupled through the same period (World Trade Organisation (WTO) 2013: 55). Since 1985, world trade has grown nearly twice as fast as GDP output – economies have grown more on the basis of exportation and importation than on internal trade.

To put this in more everyday terms, it is not an exaggeration to say that practically every garment we wear, every electrodomestic item we use or every brand logo we look at is the product of global networks of production and trade. Very few of these broadcast the details of what it takes to bring them to market. In 2001, two journalists traced the origins of each material, process and component of a pair of Lee Cooper LC10 jeans, bought in the UK. They observed: ‘on the inside label ... it doesn’t say where they come from, which is perhaps just as well, for what would you put, if you really knew? “Made in Tunisia, Italy, Germany, France, Northern Ireland, Pakistan, Turkey, Japan, Korea, Namibia, Benin, Australia, Hungary”?’ (Abrams and Astill 2001).

Three broad reasons may be given for this growth in global trade and the increased complexity of supply chains. First, the end of the Cold War (1989–91) opened up trade with Central and Eastern European countries while reducing military expenditures to boost investment in other areas. Second, the internet and the digital economy has facilitated connections to worldwide markets, production bases and systems of financial exchange as well as provided faster and more accurate ways of tracking inventory and distribution. Third, large developing countries such as China, India and Indonesia have undergone economic reforms that have led to their catch-up and entry into global trade (WTO 2013: 57).

These technological and geopolitical trends have been enhanced by a progressive deregulation but standardisation of transport systems and trade barriers since the 1980s. For example, in the USA the Ocean Shipping Act of 1984 instigated a global process of addressing shipping company monopolies and promoting free market competition between them (Buderi 1986). In turn this would push transportation costs down and open up new shipping routes. At the same time, one must take into account the gradual standardisation of shipping technologies in the process, for example through containerisation.

The shipping container first came into usage in Canada and the USA in the early 1950s. Their size was initially constrained by train and truck dimensions. By the late 1950s, the standard size was 2.4m x 2.6m x 6.1m or 12.2m. Since they were mostly in operation in the USA, it was this size that was adopted in the late 1960s as the global standard through the International Organisation for Standardisation (ISO). Ultimately, then, these steel boxes provide a uniform volume for carrying merchandise, making calculation on costs easy; they also promise swift and low-cost interchange between shipping, rail and trucks. Of global trade these days, 90 per cent of goods moved by ship do so in containers. In this way, global trade penetrates into national and local infrastructures, the latter adapting to accommodate and facilitate the former (Heins 2015). Thus, for example, rail bridges have had to be raised to accommodate ‘double-stacking’ of containers; inland ports where containers accumulate or are interchanges between transport infrastructures develop (Cidell 2012).

The container is a standardised design in itself that facilitates the movement of mass produced design objects; it also conspires in the redesigning of locations and infrastructures.

If containerisation gives the impression of a world of massification of and sameness in its objects, then this view misses the complexity and intensity of the qualities of global trade. It is important to note, first, that goods have occupied an increasing proportion of global trade. From 1900 to 2000, manufactures grew from 40 per cent to 75 per cent of world trade, the sharpest rise of which has taken place since 1980 (WTO 2013: 54). But this rise is also marked by greater diversity in the goods being traded and in the territories that are doing the trading. Between 1990 and 2011, exports in merchandise from countries of the global South to other countries in this category rose from 8 per cent to 24 per cent of the world total (WTO 2013: 65).

The evidence of China's impact on the world in terms of manufacture, trade and design since 2000 is incontrovertible. Between 1980 and 2011, China's share of the value of exports went from 1 per cent to 11 per cent, making it the world's largest exporter (WTO 2013: 5). As an indication of the growth of its knowledge base, the number of higher education institutions in China grew from 1,022 to 2,262 between 2000 and 2010 (Shepherd 2010). By 2011, design courses in China were producing over 300,000 design graduates per year. Government policy has led to over 200 'creative clusters' or 'creative industries parks' across the country (Murphy and Hall 2011). China's shift from manufacturing and exportation of goods into the global knowledge and creative economy is inexorable. It's not all China, however. The figures still leave, for example, 89 per cent of exports elsewhere in the world. What is happening in other countries is clearly affected by China's rise, but each has other design stories to tell as well.

THE NEW ECONOMY, GLOBALISATION AND THE 'SECOND UNBUNDLING'

Thinking around the New Economy that emerged in the 1990s privileged flexible approaches to production and distribution networks and was based on fine-grain information to deliver 'better, faster, cheaper' by whatever means and through whatever geographical constellation necessary. The world is seen as a resource that needs organising to allow this process.

There is a danger here that when talking about globalisation one is playing into a certain discourse that emphasises sameness (e.g. Friedman 2006). Certainly, to travel through the world's airports and shopping malls or to spend time in theme parks and hotel chains suggests an endless serial reproduction of brands, brand experiences and branded products. So much seems to be the same wherever you go. Things in 'liquid modernity', it is argued, are increasingly detached and deterritorialised (Bauman 2000). A plethora of semi-academic texts have appeared and been avidly read in business schools to support this orthodoxy. Coyle's *The Weightless World* (1999), Kelly's *New Rules for the New Economy* (1999), Cairncross's *The Death of Distance* (2001) and Reich's *The Future of Success* (2002) all promote a vision of a globalised economy where location doesn't matter as much as the rapid satiating of desire. Kasarda and Lindsay's text entitled *Aerotropolis: The Way We'll Live Next* (2011) argues for a world where industrial complexes are planned around mega-airports to allow for even swifter movement of goods to their market.

Closer inspection often reveals something more subtle and complex, however. While the growth of international trade and business produces greater requirements for mobilities, deterritorialisations, evenness and standardisation, constant reterritorialisations are also taking place. As Hannam et al. (2006: 3) put it, ‘There are interdependent systems of “immobile” material worlds and especially some exceptionally immobile platforms, transmitters, roads, garages, stations, aeriels, airports, docks, factories through which mobilisations of locality are performed and re-arrangements of place and scale materialised.’ To this list one might add design studios, design schools, design associations, workshops, hardware shops, warehouses and many other places that make up localised design cultures.

While some goods, businesspeople, finance, designers and architects are whizzing around the world, so there are objects and practices that produce friction against these movements. Further, rather than think in terms of ‘either global’ ‘or local’, it is more productive to talk in terms of various hybridities of these. This results in a layering-up of practices and orientations. Lived experience involves layers of local and global goods, media, social relationships, varying technological engagements and so on that involve disjunctures and differences as an ordinary part of everyday life (Appadurai 1990). Cultural experience within globalisation is mixed (Nederveen Pieterse 1995). Equally, design and production are subject to multiple geographical orientations and levels in their relationships. We should therefore be considering complex interweavings of global networks and local capabilities rather than in broad-brush terms.

A way of advancing this is in terms of what has been called ‘the second unbundling’ (Baldwin 2011a, 2011b). The ‘first unbundling’ was in the nineteenth century with the decline of transport costs, industrialisation of the West and the dominance of global trade in primary materials and agricultural products. These allowed production to be distanced from consumption but also assumed that tasks involved in making products remain in one place. In the second unbundling, competition is such that tasks are undertaken in different places and become an important basis of trade. To be more precise about this, Baldwin (2011a: 5) calls the trade–investment–services nexus as being ‘an intertwining of: 1) trade in goods, 2) international investment in production facilities, training, technology and long-term business relationships, and 3) the use of infrastructure services to coordinate the dispersed production, especially services such as telecoms, internet, express parcel delivery, air cargo, trade-related finance, customs clearance services’.

This way of thinking about global business is useful because it does two things. First, it accepts that the arrangement and distribution of different activities that go together to design and produce goods and services is predicated on multifarious sets of calculations and decisions. Second, it draws attention to the entwining of static issues – such as available know-how, resources or facilities – with infrastructural realities such as communication networks or cross-border business relationships. The next section takes fast fashion design and manufacture to explore these issues.

FAST FASHION AND DELOCALISATION

Fast fashion is often associated with sweatshop factory conditions (Siegle and Burke 2014), unsustainable production and distribution methods (Fletcher et al. 2012), serial violations of intellectual property rights (Scafidi 2006) and a key element in the insatiable drives of

consumerism (Schor 2004) and throwaway culture (Morgan and Birtwistle 2009). It is fast because it is configured to move through design, production, distribution, consumption and disposal as rapidly as possible. Its low cost makes it the kind of commodity that is subject to quick changes in design that respond to high, catwalk fashion trends that are mediated through popular culture and retail information on buying habits. Designs of garments are sold in limited numbers. Short-batch production of these garments favours small workshop-based manufacture in low-wage locations such as East Asia. Exponents of fast fashion include the brands Zara, H&M, Mango, New Look and Top Shop.

Clearly, fast fashion opens onto several related debates regarding design, contemporary culture and economic practices. But I want to focus this section mostly on questions of the arrangement and distribution of fast fashion networks, particularly in the context of issues deriving from 'the second unbundling'. This is primarily to show how the economic geography of fast fashion produces a much more varied map than any assumed 'design and consumption in the West, production in the East' model. A more complex analysis reveals how the globalisation of fast fashion produces, in turn, new centres of design activities.

The fashion industry has long been associated with particular cities. The fact that 'fashion capitals' such as London, New York, Paris, Milan and Los Angeles get ranked according to their prowess on the global catwalk (e.g. Global Language Monitor 2015) adds to this giddy excitement. Beyond the hyperbole of fashion capitals that is fed by journalism, Scott (2002: 1304), drawing on his research on Los Angeles and Paris, provides a checklist of factors that, in his view, produce world fashion centres. These are: a flexible manufacturing base; clusters of highly skilled contractors who can produce high-quality, short-run work; an infrastructure of fashion design schools and research institutes; a promotional infrastructure (e.g. media, fashion shows); an evolving, place-specific fashion tradition; connections between fashion and other creative sectors.

This list is important because it provides more complete and tangible reckonings on what is required to support fashion industries than the mere anecdotalism provided through the pages of fashion magazines. However, Gilbert (2013: 24–5) observes that fashion capitals are being eroded by fast fashion systems. The ability of places in China, India, Morocco and Turkey to turn out high-quality fashion goods has, arguably, replaced these fashion capitals. The result of this is that traditional fashion capitals are 'hollowed out': they exist more in terms of symbolic production – as places where fashion journalism, famous designers and fashion shows predominate – than in the actual production of garments (Reinach 2005).

There has been extensive deregulation and liberalisation of global constraints on clothing and textile trading. This includes, for example, the ending, in 2005, of the Multi-Fibre Arrangement (MFA) that dominated the geography of production since the 1970s (Glasmeier et al. 1993). Prior to the MFA, quotas had been imposed on the amount of textiles and clothing that developing countries could export to developed countries. The ending of the MFA led to fears that China would then overwhelm the global marketplace (Pickles and Smith 2011). As it happens, the outcome has been a much more varied global picture where new localities have become established as specialist centres.

In the 1990s, Benetton was frequently cited as the chief example of lean production: the company focused on core assets of design and strategy while manufacturing tasks were outsourced

(e.g. Harrison 1994). By the 2000s, Zara had taken over this role (Sull and Turconi 2008). Benetton's design centre in Treviso, Northern Italy, assumed a two to three month lead between the conception of a design and its appearance in the shops. For Zara, centred in La Coruña, north-western Spain, this would be just two weeks. This is partly to do with the bureaucratic organisation of its headquarters and how this in turn necessitates a particular business model around it. Within Zara's La Coruña offices, around 200 designers are located amidst its market specialists, procurement and production planners so that the viability of designs can be rapidly checked against manufacturing costs and availability in its production networks (Ferdows et al. 2005). These enhanced design capabilities are costly, needing a large design staff, trendspotters and rapid prototyping capabilities. These costs have to be offset by various means, but principally by avoiding markdown through sales: all garments have to be sold at premium price, which means that they are produced and sold in short runs (Cachon and Swinney 2011).

The rapidity of Zara's design and supply chain is also to do with proximity. For Zara, China and other East-Asian manufacturing possibilities are basically too far away from Western markets. Shipping from there would take too long for Zara's model of rapid response and replacement. It therefore produces most of its clothing in more costly European and North African factories (Cachon and Swinney 2011). Other factors that come into the mix in deciding where to locate production include responsiveness to changes in size, colours and fabrics, quality and handling reliability (Pickles and Smith 2011) as well as currency exchange advantages and governmental incentives. Thus it isn't merely a case of garment production automatically going to the most low-wage locations, more likely to be found in East Asia. The trade–investment–services nexus of Baldwin's (2011a) 'second unbundling' produces a more varied geography of design and production relationships.

FULL-PACKAGE SUPPLY AND THE RELOCALISATION OF DESIGN IN TURKEY

In assuring high-level quality in production along with short turnaround time, brands increasingly turn to 'full-package' supply. This is where elements of product design, packaging, labelling and logistics are handled by their suppliers rather than being generated or coordinated by the core brands themselves. This is particularly prevalent in Turkey.

Turkey's strength in full-package supply of clothing, in part, grew from long-standing international associations, particularly with Germany. The German department store Karstadt set up links with Turkish suppliers in the 1990s; retailers such as Hertie, Kaufhof and Printemps followed on as buyers (rather than contractors), as did brands such as H&M and Mexx. Such enduring relationships have meant that Turkish suppliers have had time to develop their own capabilities in providing full-package supply rather than simply being garment makers. This, combined with preferential trade agreements with the rest of Europe and strong governmental support in Turkey, has meant that while producers could not offer low labour costs as compared with lower-labour cost countries such as China or Vietnam, overall price, technical capabilities, speed of response and quality gave them competitive advantage (Neidik and Gereffi 2006).

This trend starts with buyers gradually handing over more and more design responsibility to suppliers. Buyers may have ‘trend meetings’ where heads of buying offices of a retail brand from different countries meet to discuss trends in different locations. This information is then given to suppliers so that they themselves can develop interpretations on this. In other words, a broad design brief is passed on. But suppliers also begin to source international market information in terms of ‘moods’ and ‘themes’ through magazines, the internet and trade fair photos. As they build finer-grain understandings of these, so their design input and, indeed, confidence grows. Knowing the production capabilities that were available while having access to global market information, Turkish clothing designers were gradually able to make proposals to their buyers. They could develop fabrics, interpret fashion ideas into designs, run them up and show them to visiting buyers of fast fashion brands from Europe and the USA. These could subsequently be modified and then moved to market (Tokatli and Kizilgün 2009).

From here it is short step for Turkish companies to be designing their own products and brands, sometimes working in a mixed economy as supplier to other brands while also marketing their own (Tokatli et al. 2008). For example, Marks and Spencer’s fast fashion label, Per Una, was designed and manufactured in Denizli, Western Turkey. Erak is a company that had been a full-package supplier to many European and American brands before launching its own brand of ‘Mavi’ jeans (Tokatli and Kizilgün 2004). Indeed, in cultivating its domestic market in Turkey during the 1990s, the Mavi brand featured in a series of advertising campaigns that showed that it could compete with global brands with equally high-quality merchandise. The ads featured an actor playing an American CEO who is sent into a panic while comparing his own company’s products with those by Mavi, as his assistant was saying that they also have their American jeans manufactured in Turkey. The ads ended with the Turkish emblem of the star and crescent on the sky. What one CEO said in one of the TV ads – ‘Don’t say it’s the same product, George!’ (*Aynı malı deme Corç!*) – became something of a catch phrase in Turkey (Kaygan 2016). By 2015, Mavi had retail outlets in Canada, Germany, Russia and Turkey, becoming an international brand.

The stronger entry of China into the global fast fashion supply chains from 2005 also spurred on Turkish producers to compete further in designing and producing more distinctive and close-to-market garments. In the same year, Turkey had become the world’s second biggest exporter of clothing, with a net export value of US\$12.7 billion as against China’s US\$70 billion (Tokatli and Kizilgün 2009: 146). The deregulation of international markets does not necessarily suck manufacturing out of economies like Turkey or Morocco. Instead, it has the effect of pushing them to become more actively engaged in design as a way, also, of protecting their productive capacities.

The Turkish instance provides a compelling case of the complexity that surrounds global trade processes and the role of design therein. Rather than regard the fast fashion industry as being wholly about brands retaining core capacities and outsourcing to the cheapest labour market, there are a number of considerations that have to be taken into account. Fast fashion requires continual supply, ensuring that the right garments arrive on the right day. Quality and adherence to strict temporal rhythms can outweigh production costs in calculating where to source supply. In turn, suppliers are not static and neutral. Where there is support and capacity, they may develop their own design strengths and distribution networks. In effect, what we have here is a constant



4.1 Mavi jeans store, Rize, Turkey (Photos: Harun Kaygan)

process of delocalisation where outsourcing distributes production and distribution. This may gradually lead also to a *relocalisation* as suppliers build their own networks and capabilities to design and produce their own goods. However, in turn, this may result in another cycle of delocalisation as they themselves build global trade networks and outlets.

This example demonstrates the instabilities and dynamics that are at play in the globalisation of trade and the clustering of economic capabilities, including design. Whether through careful economic planning on the part of governments, through market dominance or a combination of these, just as one place may hot up in its ability to design and produce goods so others, including its hinterland, cool down (Haughton et al. 2014). To give Harvey (2010: 148) the last word in this section, ‘the uneven geographical development that results is as infinitely varied as it is volatile’.

GLOBAL RELOCALISATION: SLOW CITIES, TRANSITION TOWNS AND MAKERSPACES

Some activists and designers have responded to this volatility by attempting to refocus design cultures away from globalising systems of finance and resources. All around the world, groups and individuals in villages, towns and cities have driven campaigns to relocalise economic processes and everyday lives. Motivations for this differ widely, including: a cultural resistance to the bland standardisation of consumption by globalisation (found in the Slow City movement); preparation for the challenges that a post-carbon world may produce (as led by the Transition Towns movement); or the decentralising opportunities afforded through technological advances in manufacture (such as by 3D printing and the establishment of so-called makerspaces).

The Slow City movement originated in Greve-in-Chianti in Italy in 1999. The mayor of this small town organised a meeting with three other municipalities to define 54 rules as to what would make a *città lente* – slow city. The concept built on the Slow Food movement which began

in 1986 as a reaction to the opening of a McDonald's restaurant in the centre of Italy. It has been dedicated to maintaining the viability of local restaurants and food production. The denomination of 'slow city' only applies to localities of less than 50,000 inhabitants and is awarded by a committee representing the membership organisation (Knox and Meyer 2013). By 2015, there were 201 such slow cities in 30 countries (CittaSlow 2015).

The Slow City movement emphasises local distinctiveness in urban development. The overarching principles include the design of high-quality environments, free of pollution and that are calmer in their overall, convivial atmosphere, of preserving local aesthetics in the built environment and fostering local crafts, produce and food networks. It therefore involves the strengthening of localised design cultures, ensuring a tighter indigenous fit between and promotion of creative practices, resources and networks for production and everyday consumer practices.

As such, the Slow City presents an alternative urban regime to the 'corporate-centred city'. The mainstream, neoliberal conception of the city is largely driven by and organised around an economic growth agenda. This is mainly based on industrial and corporate interests, which, for example, are homogeneously celebrated and signified through the office block as a symbol of this (Grubbauer 2014). This is a replicable model that is more attuned to other such cities than to its own, local cultural grain. Contrastingly, slow cities draw from localised assets of production networks, material resources and visual styles, emphasising grassroots decision-making and more idiosyncratic economic activities (Mayer and Knox 2006: 325). In terms of urban design, an emphasis is placed on nodal points – such as public squares or street markets – that 'collect' people together (Parkins and Craig 2006: 81).

The Transition Towns network shares many of the aspirations of the Slow City movement in terms of such things as strengthening local food networks and communitarian, grassroots decision-making. However, its chief motivation springs from a perceived need to build resilience in the face of Peak Oil. 'Peak Oil' means the point at which we pass the maximum global rate of crude oil extraction. The exact year that this has happened or will happen globally is debatable depending as it does on new discoveries of oil sources. Globally, it is expected to be in the first decades of the twenty-first century, but several oil-producing countries have long passed this individually (Hirsch et al. 2005; Bardi 2009). The net effect of this is a sizeable increase in the cost per barrel of oil that has taken place since the 1980s. While it peaked to \$147 per barrel in 2007, it then dropped to \$50 shortly after (North 2010); this kind of volatility in price – which has been happening since the 1970s – has been a root cause of many economic recessions.

The Transition Towns movement focuses on building resilience in the face, first, of overall oil depletion and, second, against such price volatility. Resilience is therefore about lowering the dependency of places on external factors that may start with oil but also extends to other oil-dependent commodities. This is mostly done through the relocalisation of production, services and other supports to everyday living.

As an approach, Transition Towns is rather less prescriptive than the Slow City movement, providing guidelines rather than rules for qualification. Its 12 steps are designed to lead to an Energy Descent Action Plan while engendering an inclusive, grassroots participation in the process (Hopkins 2008). As of 2015, there were 472 official Transition Towns initiatives (those that meet criteria designed to maintain the movement's identity) globally, with another 702 'muller' ones (those 'mulling over' or contemplating whether to adopt an

initiative) (Transition Network 2015). Material outputs from these communities include: the creation of local currencies to encourage hiring of services and the buying of goods from the locality; the adoption of low energy input, permaculture design principles for food growing; the (re)establishment of repair workshops and training in associated skills.

Given their enthusiasms for relocalisation, one might expect the Slow City or the Transition Towns movements to engage with new manufacturing opportunities afforded by 3D printing, a technology that has developed gradually since 1977, but has gained increased global prominence from about 2000 (Birtchnell et al. 2013). Otherwise known as ‘additive manufacturing’, 3D printing allows for a number of new possibilities: first, it distributes manufacturing so that objects can be printed closer to their consumer base, rather than being shipped; second, it provides for mass customisation so that consumers can specify their own variations of a basic form; third, it can facilitate rapid prototyping so that design ideas can be tested more easily than with traditional fabrication methods. As a result, 3D printing has the potential to relocalise making while returning the work of designers closer, in temporal and spatial terms, to the manufactured output (Birtchnell and Urry 2012).

The rise of 3D printing may be read alongside other worldwide developments such as the development of the Maker Movement from about 2005. The Maker Movement invariably involves combinations of traditional craft practices such as metalwork or calligraphy with digital tools, including 3D printing, to create new products and applications. Although differing in styles and ideological motivations in different countries, it is typified by practices of tinkering with and hacking into products and technologies, and the open sharing of innovations and technical knowledge. Thus it combines shared workshop facilities – makerspaces or Fab Labs – with the global sharing of information via the internet. By 2015, there were 97 makerspaces across the UK (Sleigh et al. 2015: 4). An important functional aspect of these in the UK has been to provide social meeting points for like-minded creative people. Meanwhile, by contrast, following the 2015 visit of China’s Premier Li to the Chaihuo makerspace in Shenzhen, makerspaces became an important element of national economic planning for encouraging creativity and design (Saunders 2016).

The Maker Movement and 3D printing have been interpreted as part of a wide-scale turn away from mass manufacture towards localised systems that are more responsive to varying desires and needs of individuals and communities (Anderson 2006). As such it is prone to hyperbole among its advocates, where they are assumed to lead to a ‘new industrial revolution’ (Marsh 2012; Tien 2012). Novels such as Cory Doctorow’s *Makers* (2009) explore the designerly, social and economic possibilities that are made available here. Often, however, there appears to be little distance between speculations based on observation and those that are fabricated for fictional purposes (Birtchnell and Urry 2013).

Where something of the Maker Movement and hacker culture ethos does form more sustained and impactful industrial economic practices is in the *shanzhai* phenomenon in China (Li 2014), which is discussed in detail in Chapter 7. But while *shanzhai* draws on localised design and production networks and ongoing tinkering, its marketplace is far from localised, it being heavily oriented towards domestic trade and exports directed at the global South. Another way to think of makerspaces is as sites of ‘microproductivity’ where very focused design innovations take place that draw on the intensive coming together of designers and makers (Hartley et al. 2015: 103–06).

In the meantime, however, beyond a shared enthusiasm for relocalising economic and design practices, it is important to note how the Slow City movement, Transition Towns and makerspaces are all rhizomatic. They each have their respective baseline requirements of varying prescriptiveness, but these are intended to be rolled out on a worldwide basis, not least through internet-based sharing. As such, they link relocalisation to global political and environmental concerns. By operating out of close-knit, communal practices that emphasise strong social and economic links in a locality, they become intensities. By providing reproducible and reportable frameworks, these can be replicated and so they are also extensities.

Makerspaces – and indeed the Slow City and Transition Town movements – have undergone impressive growth as concepts since the mid-2000s. However, while providing interesting and occasionally influential counterpoints to dominant paradigms of trade and mobilities, they remain relatively insubstantial in terms of their numbers. The remaining sections of this chapter explore global mobilities, how these produce particular design intensities and how design facilitates further movement of people.

Globalisation involves not just the movement of goods, but of people and information. This also involves the circulation of ideas, techniques, policies and aspirations as well as their concentration, reproduction or contestation. Design is active in the infrastructures that facilitate these processes, creating possibilities for capital accumulation and circulation. It can also conspire to produce frictions that slow things down or reconstitute the geographies of economic and social practices.

MOBILITIES

Alongside the movement of things and ideas, the sociological study of mobilities includes, as one should expect, the movement of people. Work in this academic specialism emerged in the 2000s to claim a ‘new mobilities paradigm’ (Sheller and Urry 2006; Urry 2007). This does not present mobilities as a new concept, although heightened speed and intensity of mobilities *is* a contemporary phenomenon. Neither is it a statement of global borderlessness. Rather, it defies the notion that what is ‘normal’ in life is about ‘stability, meaning, and place’ while contesting ‘distance, change and placelessness’ to be ‘abnormal’ (Hannam et al. 2006: 208).

Undoubtedly, mobilities have become more intensified and widespread in recent years. We have already seen evidence of the growth of global trade, but this is matched by growth in the international movement of people. Legal international arrivals to countries grew from 25 million in 1950 to 534 million in 1995, and 803 million in 2005; between 2005–2007 this figure grew by a further 100 million (Dubois et al. 2011: 1031). People are travelling further and more frequently. To give another example, total distance travelled by citizens in Great Britain rose fourfold between 1950 and 2007 (Office for National Statistics 2010: 170).

Mobilities research opens out the locations and networks that are valid and worthy of consideration, drawing attention to both how movement between places happens and what it means, and how localities and everyday practices are transformed by these. It is about connections, but in itself connects scholarly traditions. Cresswell (2010: 2–3) notes how it: brings together the social sciences and the humanities in that it marries geographical investigation of spatial effects with the affective domain of how movement and pausing are experienced; links different

scales of moving, attending to rapid, long-distance travel such as flight as well as short-distance, slower practices such as walking; reviews the interconnectivity of devices and human movement (such as mobile digital technologies); considers mobilities to have differentiated politics (such as travelling ‘Business’ or ‘Economy’ class); is also about immobility or stillness; requires the researcher also to be mobile.

How does design facilitate or, even, format various types of mobility? How does it allow mobilities to happen or shape their experience? And how does design engage distinct economies of mobility?

In the following sections I propose two opposing directions in which mobilities take place in order to draw out specific ways that design functions in their different economies. The first reviews two ways by which mobilities *into* a locality affect their design cultures. The second explores how certain formats of design are serially reproduced and are active in encouraging or assisting mobilities while also formatting the economic grounds within which those mobilities take place.

MIGRATION AND DESIGN INTENSITIES

It is an unassailable fact that migration has increased since the 1980s. The number of cross-border migrants rose globally from 155.5m in 1990 to 213.9m in 2010, a rise of 38 per cent. This still represents only 3.1 per cent of the world population (WTO 2013: 123–4). However, this has deep influences on the population make-up and skill bases, both of source and host countries, which is also reflected in design.

Beyond the statistics, however, it is important to note that there are different types of migrant labour. For the purposes of this section, we shall focus on high-skilled and low-skilled labour of migrants. To add nuance to this, the composition of migrants is often, overall, more skilled than natives (Docquier et al. 2009). In the short term, the wages of these skilled migrants will drop, but they will create a net positive effect on host economies (WTO 2013: 128). Studies generally show that host economies benefit from immigration, both from low- and high-skilled arrivals (e.g. Peri 2012; Constant 2014).

An example of the benefits of this mix to a design economy is to be found in Los Angeles. Mexican migration of relatively low-skilled labour to California was an important factor in the rapid growth of apparel, textiles and food products industries there (Hanson and Slaughter 2002). Equally, the Los Angeles apparel industries benefitted from Korean immigrants who were highly skilled in the apparel industries. They came from Brazil and Argentina in the late 1980s and 1990s, driven by currency crises, inflation and political and social instability there. Gradually, they connected to clothing brands, such as Forever 21 and Urban Outfitters, and to their own international production networks. These included fabric and trim sources, sample-makers and sewers in Brazil, Vietnam and China. Second-generation offspring of these Korean immigrants then went to university, learning about branding, logos and merchandising skills which were then introduced back into family businesses. Thus, while also drawing on the lower-wage input of Mexican and Asian workers in the garment district of Los Angeles, these Korean family businesses became increasingly design-led, developing and consolidating the apparel industry of the city (Moon 2014).

While we might associate the notion of outsourcing with the growth of fast fashion, we can also consider *insourcing* as a stimulus. The movement of skilled migrants into design-intensive

locations provides new skill-sets and international knowledge networks. Aside from the example of Korean migrants to Los Angeles, a similar impact of Chinese migrants to the Prato area of Italy in stimulating a fast fashion has taken place.

In a more self-consciously strategic way, corporate global design centres are created precisely to draw in talented and cosmopolitan creative practitioners. Formerly a supplier to Motorola, the Taiwanese manufacturer BenQ moved into its own-brand electronic products in the late 1990s. It established its own Lifestyle Design Centre in Taipei in 2002, where over 50 international designers were recruited to extend its global reach (Bryson and Rusten 2010). The location of global design centres for Ford, River Island, Sony and Nokia in London since 2000 evidences a presumption that design studios may be physically distanced from both their productive infrastructure and their consumer bases. However, in addition, design and prototyping centres are developed in locations where new products can be fashioned and tested in the context of a 'global city'. Part of their reasoning for locating in London was that, as a cosmopolitan city, it provides both a consumer testbed and stimulus for designers. By 2006, 30.5 per cent of the population of London (2.23 million) was foreign-born (Gordon et al. 2007: 13). As a global city, it is assumed, it can model a global marketplace.

The example of the Los Angeles garment industry and the impact of Korean immigrants on it demonstrates a cumulative process where design know-how gradually gets imbricated into business practices. This is where family and business networks that are brought to the city are built on and hooked into pre-existing design-led companies. Meanwhile, the establishment of corporate design centres is a more self-conscious strategic attempt to leverage the cosmopolitan capital of designers working there and, more generally, that of the host location. Either way, mobilities can result in intensified design nodes that in turn feed into extensive, global trade.

MIGRATION, MCDONALDIZATION AND DESIGN EXTENSITIES

The last section was concerned mostly with high-skilled, mobile subjects. However, many migrants are not high-wage earners and occupy low-skilled menial jobs. In the UK, for example, 2 million migrants have occupied 16 per cent of low-skilled employment (Migration Advisory Committee 2014: 2). Their employment typically includes work in agriculture, construction, factories, services such as cleaning or hospitality that does not necessarily require post-16 qualifications. This section reviews the possibility that certain systems are configured and designed in order to provide a frame for or, even, exploit this sector. This is in the serial reproduction of highly planned and designed systems.

Historically, it is argued that the development of flow-assembly systems in manufacture – otherwise called 'Fordism' – was partly related to considerations of immigrant labour (Batchelor 1994). By breaking down assembly tasks to simple actions that required little training, the Fordist production line provided an easy entry point to immigrant workers, particularly with reduced language skills in the host nation.

We might also align mass manufacture with mass entertainment and consumption in this context. The alienated labourer working on the factory line portrayed by Charlie Chaplin in the 1936 film *Modern Times* could easily be the follow-on character from his 1917 *The Immigrant*. In his

novel, *In the Skin of the Lion* (2012 [1987]: 43), Michael Ondaatje reflects on how silent movies themselves provided accessible entertainment to a polyglot, immigrant audience in America. He was referring specifically to a scene in *Modern Times*. It is also interesting to note that Chaplin chose to make the film as a silent movie so late ('talkies' were, by the 1930s, well established). It seems that Chaplin knew his mass audience. Similarly, Walsh (2012) places mass immigration to Canada and Australia in the post-Second World War period alongside the promotion of the idea of mass markets in goods. A standardised, largely homogenous consumer culture provides a stabilising, common ground for migrants, easing their assimilation into the host nation.

A more contemporary example where something of this dynamic takes place is in the so-called 'McDonaldization' thesis put forward by the sociologist George Ritzer (2000). In many respects McDonaldization is an extension of Fordism. The latter relies on the breakdown of tasks to make them easily manageable and understandable; it involves specialist equipment to perform these tasks; it draws on the scientific management of time – tasks and outputs are rendered calculable to draw out maximum efficiency. McDonaldization is oriented more towards service delivery than manufacture, however. Its systems may be found not only in fast food outlets, but in the configuration of telephone call centres, public-facing bank operations, amusement parks and hotel chains, for example. As opposed to the Fordist system of manufacture where operatives undertake just one, repeated task, in McDonaldization they may carry out several scripted tasks that are more algorithmically organised. Workers follow a menu of commands, responding to customer preferences.

Ritzer (2000: 12–13), summarizes McDonaldization to be about efficiency, calculability and predictability both for the employee and the consumer. Its systems are predesigned to 'guide' them through a series of decisions and actions; each 'episode' in the process is carefully planned, weighing up the relationships of input and time; the range of products and services will be identical across the brand.

From the point of view of certain sectors in migration, this McDonaldization concept may be interpreted to neatly fit mobile populations and their work needs. Migrants invariably take on work that lies below their habitual skill levels (Migration Advisory Committee 2014). Just as the large-scale Fordist factories and its associated mass cultural formats provided a 'home' for migrants in the early and mid-twentieth century, so we might view McDonaldized systems as their late-twentieth and twenty-first century counterparts.

To focus back onto fast food, Eric Schlosser (2002) has pointed out that English was the second language in at least one-sixth of North American restaurant workers and about one-third of these didn't speak any English at all. Responding in part to the high proportion of migrant labour in this sector, Burger King, McDonald's and Tricon Global Restaurants (who also owned Taco Bell, Pizza Hut and KFC) collectively advocated the simplification of the design of kitchen equipment. This would ensure minimum training and allow workers to slot into jobs quickly. In this respect, the graphics of outlets involved photographs rather than text to communicate more easily to migrant workers (Schlosser 2002: 70–72).

Annual turnover of 3.5 million employees in the fast food industry in the USA has been around 300 to 400 per cent and therefore a system that involved 'zero training' has been the fast food industry's ideal (Schlosser 2002: 73). From an employment point of view, the growth of McDonaldized systems may be aligned with many other factors in addition to increased migration. Systems that

are designed to allow workers to ‘learn the ropes’ and introduce them quickly into the workplace with minimum need for training also support the prevalence of zero-hours contracts, flexible hours and irregular employment more generally.

Ultimately, we may view McDonaldised systems as extensities. First, these are often found among recognisably global brands that have relatively standardised systems of product and management. Second, this standardisation allows for easy entry points on the part of both clients and workers, in particular migrants with limited host country language skills and who are willing to undertake low-skilled, menial work that is relatively easy to learn.

Arguably, this model of extensities has consumer appeals too. In the context of an analysis of Polish migrants in the UK, Horolets (2015) suggests that the McDonaldised format provides a measure of security for mobile individuals. Extending from Augé’s notion of ‘non-places’ (Augé 1995) that are relatively easy to navigate and understand for first-time users, places like airports, motels or theme parks have a special appeal to dislocated people. They provide easily digestible environments for migrants, it is argued (Horolets 2015: 7).

It could also be that the interchange of consumerist subject positions and the reproduction of McDonaldised formats in working environments constitutes a certain disciplining into neoliberal object environments. These reinforce modes of flexibility and calculability that are the core of contemporary capitalism.

MOBILE OBJECT ENVIRONMENTS

Mobilities can also involve the easy movement of entire object environments as well. One example of this is easyHotel. Launched in London in 2005, this franchise was created for relatively small hotels of between 50 and 75 rooms. The franchising benefits are that franchisees get the brand and brand name, website and booking system, training, design and specifications manual (further discussion of the design of franchises is developed in Chapter 6). Internet booking and self check-in contribute to keeping costs down. Being part of the wider ‘easy’ brand (as in easyJet, easyMoney, easyGym etc.) gives recognisability as well as a tie-in from its other services. As a result of this, day rates for rooms in London can be half the price of a standard budget hotel room.

The easyHotel design offered ‘durable long lasting materials which are almost free of maintenance costs’ and allowed for an increase in the rooms on offer (easyHotel 2014). This was facilitated by the design of a pre-fabricated modular hotel room that could be retro-fitted or installed into new buildings. In 2001, Joel Saunders Architect in New York developed concept work for this where ‘Waterproof fibreglass, painted in the company’s signature orange, is used in wet and high traffic areas, while soft surfaces – mattresses and cushions – wrapped in durable vinyl’, meaning that ‘the entire room can be wiped clean with only a damp cloth’ (Saunders 2016). So-called ‘pod hotels’, in which pre-fabricated room units provide a homogenised offer and very low-maintenance costs, were inspired by first-class airline cabins and Japan’s ‘capsule hotels’ (Victorino et al. 2009).

Generally, the hotel industry is of a fairly conservative nature. It is also capital intensive in that investments require payback horizons of 25 years (Allegro and de Graaf 2008). However,



4.2 EasyHotel, London (Photos: Guy Julier)

the growth of the budget hotel, in which its systems and physical detailing are meticulously designed to keep costs low, forms one side of a growing split in hospitality commerce and elsewhere. Since the mid-1990s, the New Economy has produced access to low-cost brands in products, fashion, leisure and travel. At the other end, exclusive, luxury brands have also grown. In the meantime, the middle range – at least in terms of hospitality – has declined (PriceWaterhouseCoopers 2005).

We could read this as reflecting increased polarisation of wealth that has gathered pace through the neoliberal era. Or we may see it as part of a growing complexity of consumption modalities where savings made in one area (spending on an easyHotel room, for instance) can be allocated to luxury brands (shopping at an Armani store, for example). But we might also interpret this as part and parcel of a global economy of mobilities in which design figures highly to facilitate it. Mobile object environments may be the pre-fabricated pods of an easyHotel, Ibis or a Yotel room. But in the broader context of social practices, these are also ‘attached’ to other mobile object environments such as luxury brand stores and their serial replication.

Finally, it is important also to consider the workers in all this. The hospitality industry is significantly supported by migrant labour. For example, 25 per cent of employment in Ireland’s travel-related sector has been made up of migrants (Baum 2007: 1394). Hotel work involves emotional or aesthetic labour (Hochschild 2003 [1983]; Witz et al. 2003) – service with a smile, looking your best for the customer – using dispositions that are designed to make the client visitor feel at home. Migrant hotel workers, McDowell et al. argue (2007), fit easily into and are, indeed, hired for these roles.

CONCLUSION

This chapter sketches out some broad issues that produce a highly varied set of design economies in the contexts of global trade and mobilities. On the one hand, globalisation provides infrastructures, systems, devices, legal norms and connectivities that facilitate the easy movement of people, ideas and things. Containerisation has led to the integration of worldwide transport networks for goods. Style magazines or websites move trends in taste around

the globe. Highly systemised leisure and hospitality chains allow their employees and their clients to move relatively smoothly between locations – to settle in and be at home with ease. These are the extensities.

On the other hand, intensities arise. This is where localised specialisms are consolidated or developed. Motivations for these are varied. They may be straightforwardly in opposition to the environmental and cultural impacts of globalisation where attempts are made to build tighter and stronger local networks of production and consumption. This is expected to produce greater resilience in the face fluctuating global commodity prices and reduce carbon footprints; or it is done to increase stronger local identities and promote better quality of life. While these rest on the importance of locality, they are also part of global networks.

Equally, entrepreneurial activities in some localities lead to the development of tighter networks between designers and producers. Strong examples of this exist in the fast fashion industry. Rather than lead to increased distancing between design and production, the global circulation of fashion trends combined with the need to move product to market rapidly and in quick succession means that the competitive advantage of their co-(re)location is acted on. Economies of design both globalise and localise.

Ultimately, the rise of global trade and mobilities has been afforded by changing technological, legal and financial possibilities. The internet, trade agreements and the easier circulation of money across borders all underpin the New Economy and globalisation. However, this is also to do with people and their readiness to engage in this landscape. Migration creates new localities and global connections in which design economies may thrive. Infrastructures that support the daily lives and livelihoods of mobile subjects are also designed. While trade and mobilities involve the movement of physical stuff and individuals, these also require people to be able and willing to engage in their processes and implications.