TISSUE ECONOMIES

BLOOD, ORGANS, AND CELL LINES IN LATE CAPITALISM

Catherine Waldby and Robert Mitchell

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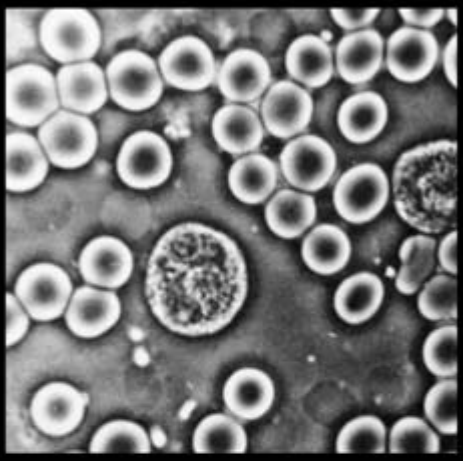

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Introduction

GIFTS, COMMODITIES, AND HUMAN TISSUES

Blood, Community, and September 11 Within hours of the terrorist attacks on the World Trade Center, the U.S. Department of Health and Human Services, the American Association of Blood Banks, and the American Red Cross issued calls for people to donate blood. Supplies were low throughout the state of New York. Four days before the attacks, state hospitals and health professionals had convened a meeting to discuss ways to improve the blood supply (Butler 2001). In the chaos following the attacks, health authorities could not estimate how many people were injured, or what quantities of transfusion blood they might need. Immediately thousands of people came forward to give blood. They waited in line for hours. The New York Blood Center, which supplies most of the city's hospitals, collected more than five thousand units of blood and fielded twelve thousand phone calls in the first twelve hours. In Washington, after the terrorist attack on the Pentagon, blood was collected at hospitals, makeshift centers, and a building next to the White House (Schmidt 2002). When the collection centers closed, many people queued through the night. At 6:30 the next morning there were already long lines outside blood banks (*Guardian*, 12 September 2001). Hospitals, already dealing with the wounded and dying, had difficulty finding enough trained staff to test donated blood, or storage capacity to accept the volume offered.

This overwhelming desire to give blood was not limited to the citizens of New York and Washington: all over the United States, similar scenes were played out. In the weeks following September 11, more than 475,000 units were collected for the victims, but only 258 units were used for them, and much of the blood had to be discarded (Schmidt 2002).

What was going on here? What can explain this response to a national disaster? Why did the citizens of the United States, after years of declining blood donation,[1] rush to give blood in the wake of the terrorist attack? To cast the question a little wider, what does it mean to give blood, and why does a national disaster elicit such a response? It is self-evident that for the people queuing, giving blood was a pragmatic means of helping those injured in the attack. They were acting on a model of the body, and of relationships between bodies, that we take for granted in the twenty-first century: one body can share its vitality with another through the redistribution of tissues, from donor to recipient, through biotechnical intervention. As the lucky ones, the healthy ones, they can give a portion of their blood, a self-renewing substance, to those who have lost blood in the violence of the attacks. A blood transfusion may mean the difference between living and dying. In this sense the donors give to victims a little of their health. In the face of a horrifying spectacle of death, the donors can give life.

It seems to us, however, that the desire to give blood in those disorienting days was driven by more than a wish to help the immediate victims of terrorism. The excessive nature of the donations—the queuing through the night, the reported reluctance to withdraw when no more storage space could be found, the continued high rates of donation after it was evident that there was far more blood available than could be used to treat the victims—this excess points to something more. It points, we argue, to the complex imbrication of giving blood with ideas and feelings about nation, citizenship and community, and the place of the body and its capacities within this constellation of concepts.

The technology of mass blood donation and transfusion has its origins in war and national defense. Blood banking methods were first developed in Barcelona during the Spanish Civil War,[2] and perfected in the United States, the United Kingdom, and Northern Africa dur-

ing the Second World War. Small blood collection networks were set up in London and other British cities in the early days of the war. Physicians in the United States collected civilian blood to send to Britain, and the Free French created a facility in Algeria to assist their forces fighting in southern France and Corsica. In each location the citizenry came forward in large numbers to give blood for the troops as a fundamental contribution to the war effort. As Starr (1998) describes it, blood was both strategic matériel in the Allied war effort, a resource, and a substance associated with the values of democracy and anti-fascism. Giving blood was a way for civilians to participate in the sacrifice made by soldiers at the front, to defend the integrity of the nation by giving part of their bodies. Starr, commenting on the Free French approach to blood collection, observes, "To them it represented a philosophy of medical care, embodying all that was both modern and humane, especially in contrast to the values of the fascist enemy. Blood donation was benevolent, voluntary and welcomed from all, French and Arab alike. Blood thus became more than a pharmaceutical; it symbolized a new social contract" (Starr 1998, 154).

Giving blood to the troops was a way to express solidarity and improve morale in the anxious conditions of world war. As Rabinow comments, the relationship between blood donation, distribution, and the war effort gave a particular cast to the systems of civilian blood banking set up after the war, particularly in the United Kingdom and France: "After the war, transfusion carried with it the mark of solidarity, of a voluntary and benevolent gesture, of a collective effort of the entire nation" (Rabinow 1999, 84).

Thus blood donation, even in the United States, where postwar blood banking and donation practices diverged markedly from the nationalized, welfarist models favored in the United Kingdom and France, is historically associated with the bonds and obligations of citizenship and the defense of the nation,[3] an idea which in turn emerges from nineteenth-century ideas equating blood with race and race with national citizenship (Foucault 1980). In a sense, the anxious queues outside blood facilities in New York in the days after the World Trade Center attacks were formed by the first volunteers in a new war effort by the United States, albeit a war profoundly different from the Second World War.[4] This was war not with the standing army of an-

other nation-state but with a globally organized, deterritorialized, and decentralized network of terrorist cells, who in attacking the World Trade Center and the Pentagon had managed to do what no national standing army had ever done—strike the mainland sovereign territory of the United States. The excessive desire to give blood was perhaps driven by a sense that the body politic was itself wounded in the attacks. Giving blood might help to heal the great visible trauma to lower Manhattan, the smoking ruins broadcast on national and international television for months hence.

The huge national mobilization of blood donors also suggests the continued currency of civic values often said to be in decline—values of altruism, citizenship, and identification with the fate of the nation over and above more segmented ethnic and religious identity. It suggests the continued currency of what Benedict Anderson famously called the imagined community of the nation-state, "Imagined because the members of even the smallest nation will never know most of their fellow members . . . yet in the minds of each lives the image of their communion. . . . it is imagined as community because, regardless of the actual inequality and exploitation that may prevail in each, the nation is always conceived as a deep, horizontal comradeship" (Anderson 1991, 6–7). For Anderson, citizens participate in fundamental acts of national imagined community when they read the national newspapers, and fight in national wars. Both acts involve citizens in a national narrative, and require them to imagine relations of solidarity with others in the space of the nation, others whom they will never meet. Blood donation too would appear to be an exemplary act of imagined community in Anderson's terms, a gift of health to an unknown other with whom one has nothing in common other than the shared space of the nation.

Numerous social theorists, particularly theorists of globalization, have argued that the kind of national imagined community posited by Anderson has fragmented irrevocably as the sovereign power of nation-states has been overtaken by deterritorialized social and political networks that characterize a globalized social order. As Urry (2000) articulates this shift, the new mobilities of people, capital, technologies, images, and ideas that characterize globalization have loosened the identification of citizens with the nation-state and diver-

sified the forms of belonging and obligation available to organize citizenship. He writes,

> Global networks and flows restructure social inequalities and transform many states into [mere] regulators of such flows. Corporations, brands, NGOs and multinational 'states' have emerged more powerful than nation-states. . . . Overall the hybrid character of many apparent societies in a post-colonial period results in a disjunctive, contested and inconsistent citizenship . . . There are many social organizations delivering different kinds of rights and duties to different kinds of citizens over very different geographical reaches. Citizenship is contested not just within a nation-state over the access of different social groups to rights such as personal property, a job or health care. There is a more fundamental contestation over what are the appropriate rights and duties of citizens living within, and moving around, the contemporary world; over what entities should provide citizenship, and over what entities should adjudicate between the different complexes of rights and duties over very different temporal and spatial scales. (Urry 2000, 163)

According to this kind of analysis, the sense of belonging within a nationally bounded imaginary community that Anderson attributes to the modern citizen has not been effaced, but only complicated and attenuated by other emerging forms of obligation and identification. The intense national identifications evident in the World Trade Center blood donations are not artifacts of a bygone era of the nation-state but coexist with these other kinds of identification in an uneasy tension, available for mobilization under particular circumstances. The specificity of the September 11 donations, the immediate responsiveness of the donors to the plight of *these* citizens and to new conditions of warfare, coupled with poor national rates of regular blood donation, is evidence of these kinds of tensions.[5] The blood supply itself has been subject to complex international pressures over the last twenty years, which have disturbed any simple equation between the borders of the nation-state and the origins of transfusion blood. This is particularly true of the blood supply in the United States, which depends upon a more decentralized and privatized system than exists in the United Kingdom and most West European countries. Moreover, as we shall examine in detail, the contamination of the blood supply with human

immunodeficiency virus (HIV) and hepatitis C virus (HCV) during the 1980s, due in part to the globalization of blood sources, has had a major impact on what blood means. The blood bank has been transformed from a source of communalized health to one of communalized risk, with parts of the population (sex workers, gay men, drug users) feared by other parts of the population as a source of contaminated blood (Waldby et al. 2004). Nevertheless, blood donation evidently retains powers of national mobilization and the power to express public health as a collective enterprise, shared among fellow citizens under particular circumstances.

Tissue Transfer and Social Order The World Trade Center attacks reminded many Americans that blood is a substance capable of being transferred between people, but in fact the disaster forced the mobilization of all sorts of body parts and biomedical technologies for their transfer and analysis. So for example, in the days following the attacks skin banks sent several square meters of allograft skin to New York City for burn victims. For many months afterward, volunteers and crisis workers searched the ruins for often tiny fragments of human remains, some identifiable remnant of the victims who were being mourned. Forensics experts used computers to analyze the fragments' DNA, sometimes even creating new software programs able to identify individuals on the basis of short single-nucleotide polymorphisms (SNPs).[6]

The medical response to the World Trade Center attacks, in other words, was closely linked to the affective significance of human tissues, their ability to represent complex ideas and feelings about human identity and community. The response also drew on extensive technical systems for the donation, circulation, analysis, and transplantation of human tissues available now, in the first years of the twenty-first century. While blood transfusion has been routinely practiced for one hundred years, other kinds of tissue transplantation are much more recent (we use "tissue" throughout this book in a generic sense, to include blood, organs, and any other kind of living matter taken from the body). Solid organ transplantation has been practiced since the late 1950s and commonplace since the late 1970s, as the refinement of tissue typing, surgical techniques, and immunological suppression

has allowed organ donors to be matched with compatible recipients (Fox and Swazey 1992). Skin, bone, heart valves, and corneas can now be banked and used in surgery (Hurley 1995). Reproductive tissue—sperm, ova, and embryos—can be donated and transplanted. Umbilical cord blood is increasingly harvested during birth procedures, stored, and used as an alternative to bone marrow in transplants. The recent development of techniques for propagating human stem cell lines derived from embryos means that embryonic tissues may become the source for a completely new range of transplantable tissues sometime in the future (Waldby 2002a). Many other kinds of tissues—cancerous material, surgical waste, saliva samples—are banked for medical research or commercial pharmaceutical production. Currently several countries, including Iceland, Singapore, Estonia, Sweden, the United Kingdom, and Canada, are setting up genetic databases that will contain DNA data about a substantial share of their populations (Kaye 2004a).

This proliferation of tissue fragments, and of medical and social technologies for their sourcing, storage, and distribution, has profound implications for health and embodiment, for civil identity and social order, and for delineating relations between the global and the local. Each new technology involves a reorganization of the boundaries and elements of the human body, the development of new kinds of "separable, exchangeable and reincorporable body parts" (Rabinow 1999, 95). What does it mean when the human body can be disaggregated into fragments that are derived from a particular person but are, strictly speaking, no longer constitutive of human identity (Rabinow 1999)? What is the legal status of such fragments? Are they a kind of property in the body? Does the person from whom they originate have defensible claims over them once they enter into social circulation? Are they experienced as fragments of the donor's self after donation, or as detachable objects (Waldby et al. 2004)? Do donors and recipients feel that some enduring relationship is created between them in the act of tissue transfer (Waldby 2002b)? How is the status of the individual (strictly speaking the in-*dividual*, he who cannot be subdivided) altered to accommodate these possibilities for fragmentation?

At the level of social relations, how might the exchange of such fragments between persons, their donation or sale, their receipt and

reincorporation, constitute relationships between them? The sharing of human tissues can be a powerful expression of communal solidarity and civil empathy, as we have already seen. However, the redistribution of human tissues can also produce injustice and exploitation, because one person makes a bodily sacrifice in favor of another's health and life. Often the transfer of tissues from one person to another follows the trajectories of power and wealth, as the poor sell their body parts to those with more wealth. The increased global mobility of people and money has seen the growth, alongside carefully regulated national systems for organ donation, of transnational black markets in human organs, sold by the urban and rural poor of the developing nations to aging, wealthy buyers in the industrialized world (Scheper-Hughes 2000). Thus the biotechnical capacity to transfer tissues immediately raises questions of just distribution. What social technologies and forms of governance are the most appropriate for this task? What complexities are introduced into all of these questions by the increasing globalization and liberalizing of the market in human tissue? Biotechnology and pharmaceutical companies are international brokers of many kinds of human tissue—stem cells, genetic material, blood products—and play an increasingly powerful role in shaping national health policy. How do these developments interact with older models of a national commitment to public health, and the free donation of tissues to fellow citizens?

The medical capacity to fragment the body and the techno-social systems that manage and distribute these fragments, in other words, raise fundamental issues about ontology, power, economy, and community, some of which we hope to address in this book. We propose to tackle these issues through a critical appraisal of the dichotomy that has organized bioethical and sociological evaluations of these issues for the last thirty years—the dichotomy of gift and commodity. Makers of health policy in the United Kingdom have favored, for the most part, a gift model for managing human tissues—that is, a model in which donation is voluntary, without financial compensation, and distribution is based on medical need rather than ability to pay. In the United States gift and commodity systems for some human tissues exist side by side—for example in reproductive material, which can be

both donated and sold—while others, for example whole organs, are circulated strictly as gifts.

Advocates for the greater commodification of therapeutic tissues generally base their arguments on the efficacy of the market as a way to increase the number of organ or blood donors through financial reward. Their arguments are pragmatic and utilitarian, advocating payment for kidneys, for example, as a way to increase supply.[7] Advocates of gift systems, however, claim a much wider ambit of social benefits. As Rabinow (1999) reports, French bioethical deliberations and legal constraints prohibit the selling of human tissues, on the grounds that the commercialization of tissues is incompatible with human dignity, a bioethical position shared by institutions in the United Kingdom and those of many other countries to a greater or lesser extent. As we have already seen, the gift of blood is historically associated with the constitution of a community-minded citizenry and a resilient nation, a claim examined in detail below and throughout the book. Correlatively, the advocates of gift systems associate the selling of human tissues with exploitation and dehumanization, the reduction of human status to the status of a thing (Andrews and Nelkin 2001; Scheper-Hughes 2000; Kimbrell 1993). Scheper-Hughes, for example, likens the commodification of organs to "a new form of late modern cannibalism": "Commercialized transplant medicine has allowed global society to be divided into two decidedly unequal populations—organ givers and organ receivers. The former are an invisible and discredited collection of anonymous suppliers of spare parts; the latter are cherished patients, treated as moral subjects and suffering individuals. Their names and their biographies and medical histories are known, and their proprietary rights over the bodies and body parts of the poor, living and dead, are virtually unquestioned" (Scheper-Hughes 2002a, 4).

Gift systems and commodity systems for managing human tissues are often cast in this way, as mutually exclusive and morally incompatible social forms. In this book we hope to complicate and disorganize the gift-commodity dichotomy, because we consider it an inadequate way to conceptualize the political economy of tissues in the modern world of globalized biotechnology. To do this we will first consider the

most eloquent theorization of the relationships between gift and commodity systems of tissue exchange and their implications for citizenship, identity, community, the body, and the body politic: Richard Titmuss's celebrated study *The Gift Relationship: From Human Blood to Social Policy*, first published in 1970. Titmuss, a great scholar and defender of the postwar welfare state, sets out a compelling set of arguments for retaining a gift model for blood donation and transfusion. We will first consider his arguments in some detail. We will then consider the impact of subsequent developments in biotechnology, commerce, globalization, and social theory on the specific content of his arguments.

Titmuss: The Political Economy of Tissues Titmuss's work is inescapable because he recognized that the material forms of tissue circulation have complex implications for the form of the polity. *The Gift Relationship*, written in the late 1960s, is a primarily comparative study of the systems of blood donation and distribution that grew up after the Second World War in the United Kingdom and the United States. These two systems served Titmuss as exemplars of the virtues of the gift over the commodity form, and of public over market models of service provision. At the time when Titmuss was writing, the British blood system retained much of the character of the wartime service. As part of the postwar creation of a comprehensive National Health Service (NHS), a National Blood Service (NBS) was set up under the jurisdiction of the Ministry of Health. Blood was treated along the lines of the nationalized health system and the postwar welfare state reforms, as a public resource to be distributed according to social principles of capacity to give and medical need. Donors gave without remuneration, as they had during the war, and a system of regional transfusion centers ensured that each hospital in a region was supplied according to need. Patients did not pay for blood received, nor were they obliged to give blood in return. The system was entirely voluntary (Starr 1998). Despite the rapid increase in demand for blood attendant on new forms of surgery, this voluntary system provided an adequate supply of blood during the years leading up to Titmuss's study. Between 1951 and 1965 almost every regional center increased the size of its donor pool (Titmuss 1997).

In the United States, in the absence of any national policy on blood management, a much more complex and internally conflicted set of arrangements grew up to supply hospitals with blood. During the war the Red Cross had been the primary coordinator of the blood mobilization effort, though small local and community blood banks had also opened to meet the demand. After the war these two forms of organization continued to coexist, despite attempts by the Red Cross to establish itself as the sole national blood supplier. The Red Cross managed a system that more closely resembled the British one, with predominantly free voluntary donation and transfusion, while the community blood banks often used a credit system according to which recipients of transfusion owed the bank a donation, from either themselves or a friend or relative. Both systems would on occasion use paid donors to supplement voluntary ones. They did so reluctantly, on the grounds that people who sold blood were more likely than voluntary donors to present a risk of hepatitis or syphilis. Unable to cooperate, the two systems divided the United States into an erratic patchwork of territories, and patients might find themselves in either a voluntary or a credit system according to where they fell ill. Excesses and deficiencies in regional blood supply could not be remedied, because neither service would share information with the other, leading to much wastage (Starr 1998).

In addition to this confusion, a parallel system of for-profit blood banks grew up alongside the voluntary sector during the 1950s, exploiting the gaps and problems in supply and demand arising from regional and organizational conflicts. In the absence of a licensing system, nonmedical entrepreneurs could set up a bank with a minimal degree of medical supervision, buy blood (often from the poor and derelict), and sell it to hospitals. During the early 1960s the worst implications of this unregulated market for blood played out in a spectacular legal battle in the Federal Trade Commission (FTC), a legal battle that strongly influenced Titmuss's thinking about the pivotal status of blood in forming social relations. In an action initiated by the for-profit blood banks in Kansas City, the FTC investigated the charge that the city's community blood banks were engaged in an illegal trade boycott of the commercial sector by refusing to purchase blood from it. At the heart of the case was this question: Was blood a commodity,

or did it have some other kind of status? At its initial hearing the FTC accepted the argument that because citrate anticoagulant was added to blood to increase its shelf life, blood was not simply a living human substance but a commodity, "something that could be bought, sold and processed like any other drug. As such it would fall subject to the normal trade laws, forbidding economic boycotts and restraint of trade" (Starr 1998, 228). The implications of this for the community suppliers were both that they would be obliged to purchase blood that they considered a public health risk and that any recipient of tainted blood (still a very real possibility under the strictest testing and hygiene regimes available at the time) could sue the suppliers for violating implied warranty. The community sector appealed, and in 1969 the FTC decided that the case, since it involved nonprofit groups, did not come under its jurisdiction. The potential to treat blood as a commodity was not restricted by the ruling, and in the late 1960s another form of for-profit blood business developed. Pharmaceutical companies set up plasma collection businesses using a technique called plasmapheresis, which enabled the collection of large amounts of plasma from paid donors, to be used in the production of blood products. Again the donor populations were predominantly the indigent and homeless, and the pooling of the collected plasma in large vats presented a serious risk of contamination.

Mindful of these developments, Titmuss set out to defend the British voluntary system of blood donation against the dangers that he saw in the quasi-commercial system of the United States. Titmuss believed that the greatest threat to the gift system was not the pragmatic example of the blood system in the United States per se but the early stirrings of neoliberal market rationalism, articulated by economists like Friedrich von Hayek and Milton Friedman. His particular target was the policies favored by the influential Institute of Economic Affairs (IEA), a neoconservative think tank,[8] which advocated introducing market forces and analysis into British health care (Fontaine 2002). Titmuss regarded its arguments as a serious challenge to the National Health Service and its philosophy of national community and distributive justice. More broadly, he saw market rationalism as imperiling the whole ethos of welfare and public provision which characterized postwar Britain and which he considered essential to social cohesion. As

Philippe Fontaine comments in his detailed analysis of the historical context of Titmuss's work, "Encouraged by Labour's return to power in 1964 . . . [Titmuss] reconsidered the orientation of social policy in connection with externalities—that is, benefits and costs that are external to the market and for which people neither pay nor are compensated. In Titmuss's view, 'socialist' social policies stimulated ethical behavior, which generates positive externalities and averts negative externalities, whereas 'private' social policies, as envisaged by the IEA, favored commercialism, which neglects positive externalities and underestimates negative externalities. . . . Titmuss could sense that economic considerations were gaining ground in official Labour circles, a trend that would lead to gradual departures from the principle of free social services in the second half of the 1960s" (Fontaine 2002, 403).

Titmuss's intention in writing *The Gift Relationship* was to demonstrate how the problems evident in the American system typified the danger of exposing essential human services like blood donation to market forces (Oakley and Ashton 1997). The book contains a thorough investigation of the size and composition of donor pools, contamination risks, and blood wastage in each system. It found that the voluntary, national system in the United Kingdom provided a donor pool drawn from all social classes, better security against infectious contamination, and little wastage of blood supplies. The system in the United States, on the other hand, drew a high proportion of its ever-dwindling donor pool from ill and indigent donors, and the fragmentation of the system produced high degrees of waste and expense. More importantly for us, Titmuss used these findings to formulate a complex and rigorous argument about the values of the social as opposed to the economic sphere of life, and the moral and civil effects of gift systems of tissue circulation, which he opposed to commodity systems. In doing so he set out a framework for thinking about tissue donation and banking that is still highly influential in bioethical and health policy arenas throughout the world.

Titmuss locates the donation and distribution of blood within a broader set of questions regarding the nature of the social contract and the power of the welfare state to produce egalitarian and communitarian relations between citizens. At the start of *The Gift Relationship*, he notes:

> [This] study originates . . . from a series of value questions formulated within the context of attempts to distinguish the "social" from the "economic" in public policies and in those institutions and services with declared welfare goals. Could, however, such distinctions be drawn and the territory of social policy at least broadly defined without raising issues about the morality of society and of man's regard or disregard for the needs of others? Why should men not contract out of the social and act to their own immediate advantage? Why give to strangers?—a question that provokes an even more fundamental moral issue: who is my stranger in the relatively affluent, acquisitive and divisive societies of the twentieth century? What are the connections then, if obligations are extended, between the reciprocals of giving and receiving and modern welfare systems? (Titmuss 1997, 57–58)

For Titmuss the management of blood is a critical nodal point in the network of civil obligations created by a democratic welfare state. If blood, as an intimate part of the embodied self, is not sequestered from market forces, then all kinds of social services—education, social security, child foster care, social work—would also inevitably be laid open to the market, because the sharing rather than selling of blood represents *the* fundamental assertion of collective values. "To give or not to give, to lend, repay or even buy and sell blood leads us . . . into the fundamentals of social and economic life" (Titmuss 1997, 124). Blood must be given and not sold, Titmuss writes, because the circulation of gifts is crucial to forming collective social relations and mutuality among citizens. He develops this argument by drawing on Marcel Mauss's celebrated anthropological study of gift relations in Melanesian, Polynesian, and Canadian Indian societies, *The Gift: The Form and Reason for Exchange in Archaic Societies*. Mauss identified the giving and receiving of gifts as the primary basis for social solidarity in these societies. Gifts are important, Mauss argues, because they create relations of indebtedness and obligation between parties. Gifts are not so much things as relationships between persons. A gift exercises a certain hold over its recipient, insofar as the recipient is bound to the giver by the obligation to reciprocate. In this sense the gift is not a simple transfer of ownership from one party to another, but instead invokes the person of the giver, even after it has been given. Mauss

writes, "What imposes obligation in the [gift] received and exchanged, is the fact that the thing received is not inactive. Even when it has been abandoned by the giver, it still possesses something of him. Through it the giver has a hold over the beneficiary . . . to make a gift of something to someone is to make a present of some part of oneself . . . [and] to accept something from someone is to accept some part of his spiritual essence, his soul" (Mauss 1990, 11–12).

Frow (1997), in his careful reading of Mauss, notes that in this traditional system of obligatory giving, receiving, and reciprocation, gifts act more like loans. They both create and mediate relationships between persons, and continue to refer to their original owner, irrespective of circulation. They create above all a demand and obligation for reciprocation, and so the circulation of gifts creates a web of indebtedness and exerts a continued pressure for reciprocity. "The gift continues to form a part of the giver even when alienated to another . . . this link is a kind of property right which persists as an obligation to return the gift, even when the gift passes through a number of hands. We are concerned here with a transaction that perhaps bears rather more resemblance to a loan than to an absolute gift or the alienation of a property right" (Frow 1997, 110).

It is this power of gifts to constitute positive social relations that Titmuss draws upon to argue for the necessity of voluntary and gratuitous blood donation. Titmuss notes that in traditional societies, strict forms of obligation and compulsion characterize gift relations. As displays of wealth, they are crucial for creating chiefly hierarchies and personal power. Gift giving in this context is not disinterested and altruistic, but rather caught up in a system of calculation and strategy. Titmuss argues, however, that the gift of blood in the modern welfare state is a different category of practice. It is free of power relationships because it is impersonal, transmitted from one stranger to another, and so lacks the element of personal aggrandizement and indebtedness. It is voluntary, not compulsory, and the recipient is under no personal pressure to reciprocate. It is given not because the giver expects a return, but as an act of voluntary altruism and social duty. Blood is both an intimate part of a person and a circulable substance that can be given to another under conditions of mutual anonymity. Hence giving and receiving blood create the conditions for imagined

community (Anderson 1991) among fellow citizens, a sense of impersonal mutuality and inclusion, in place of the personal relations of power and indebtedness described by Mauss. Rather than constitute complex forms of social hierarchy, the gift of blood, according to Titmuss's model, helps to constitute a sense of social responsibility and trust among strangers, and gratitude not toward particular persons but to the social body as a whole. As social policy, free blood donation forms an integrative system, in which "[p]rocesses, transactions and institutions . . . promote an individual's sense of identity, participation and community and allow him more freedom of choice for the expression of altruism and . . . discourage a sense of individual alienation" (Titmuss 1997, 20). Furthermore, this system promotes good public health. In a nonremunerative system, donors have no profit incentive to lie about their health. They are much more likely than paid donors, for example, to truthfully answer questions about past episodes of hepatitis or syphilis. A gift system also promotes equitable redistribution, transferring precious biological matériel from the healthy to the ill, the strong to the weak, along the same lines of economy as those associated with the welfare state. In this way the blood bank becomes a site for constituting both collective health and the best values of citizenship, where the bodies of citizens are materially indebted to each other and to the redistributive state.

So for Titmuss, organizing blood along the lines of a gift system was a way to engender socially constructive and redistributive embodied relations between citizens. A gift economy for blood, he believed, would promote the optimum form of circulation to maintain the body politic of the welfare state, by creating a particular kind of civil intercorporeality, one in which the explicit relations of indebtedness between bodies would provoke a continued round of donation, a continuing replenishment of both the population's vitality and its generosity. Titmuss explicitly contrasts this communitarian economy with the social fragmentation that he believed was produced by the marketization of blood, its exposure to pricing mechanisms. Markets, he claimed, organize oppositional relationships between buyers and sellers, and resolve this opposition through the striking of price and the completion of a transaction. Selling blood creates instrumental, nonbinding commodity relations between producers and consumers,