Trade Policy and Public Health

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Abstract

Twenty-first-century trade policy is complex and affects society and population health in direct and indirect ways. Without doubt, trade policy influences the distribution of power, money, and resources between and within countries, which in turn affects the natural environment; people's daily living conditions; and the local availability, quality, affordability, and desirability of products (e.g., food, tobacco, alcohol, and health care); it also affects individuals' enjoyment of the highest attainable standard of health. In this article, we provide an overview of the modern global trade environment, illustrate the pathways between trade and health, and explore the emerging twenty-first-century trade policy landscape and its implications for health and health equity. We conclude with a call for more interdisciplinary research that embraces complexity theory and systems science as well as the political economy of health and that includes monitoring and evaluation of the impact of trade agreements on health.

INTRODUCTION

In the modern era of economic globalization, tensions exist between the goals of trade liberalization to generate global and national wealth and the protection and promotion of health and health equity. Proponents of trade liberalization maintain that there has been a net positive effect, with increased average per capita incomes and a global diffusion of knowledge, services, and technologies that have consequently improved health, labor, and other living conditions (8, 88, 141, 142). Others argue that the attendant gains in income, goods, and services have been uneven, with net negative impact on social welfare and population health (4, 13, 71, 79, 121, 124, 126, 127).

Health concerns relating to trade agreements have tended to focus on two areas: the protection of multinational intellectual property rights (IPRs) and the implications for access to essential medicines; and the privatization of health care and health-related services (13, 72). As the scope and depth of trade agreements have expanded over recent decades, two further areas have been receiving greater attention: the reach and influence of investment liberalization and trade agreements in domestic policy and regulatory regimes—referred to as behind-the-border issues (72); and trade and investment in health-damaging commodities (particularly tobacco, alcohol, and highly processed foods and the raw materials that make them; e.g., corn specifically for high-fructose corn syrup) and the associated global diffusion of unhealthy lifestyles (33, 72, 82).

A coherent, integrated approach to policy formulation and implementation in the trade–health space needs to address the many links that operate indirectly and dynamically through economic, social, and health systems. Combining health, trade, and other relevant policy domains and aiming to understand the whole system's behavior will help elucidate key leverage points or places to intervene most effectively (45, 116).

This article aims to provide an overview of the modern global trade environment to illustrate the pathways between trade and health and explores the emerging twenty-first-century trade policy landscape and its implications for health and health equity. In conclusion, we suggest future priorities for research in this area.

THE EVOLVING TRADE LANDSCAPE

The Twentieth-Century Trade Trajectory

The modern era of trade liberalization has its roots in the post–World War II Bretton Woods Agreements, which aimed to rebuild the global economy by introducing an international system for cooperation in trade, finance, and development. In relation to trade, this objective manifested with the signing of the General Agreement on Tariffs and Trade (GATT) in 1947. The GATT was intended to liberalize trade in goods by reducing tariffs, eliminating quantitative restrictions, and introducing the principle of nondiscrimination between trading partners or between national and nonnational products or services (44).

Following the Uruguay rounds of multilateral trade talks in 1994, the GATT was subsumed into the World Trade Organization (WTO), which was established to consolidate the evolving system of trade rules and principles. WTO goals included encouraging freer trade by reducing tariffs (or customs duties) and import bans; creating predictability through binding and transparency so that stable investment and trading environments were established; and requiring that trade be conducted without discrimination by applying the national treatment rule (treating foreign traders and locals equally) and the most-favored nation rule (prohibiting the application of discriminatory trading rules between trading partners). Since the establishment of the WTO, tariff rates in many countries have reached all-time lows, trade flows have increased, and goods production

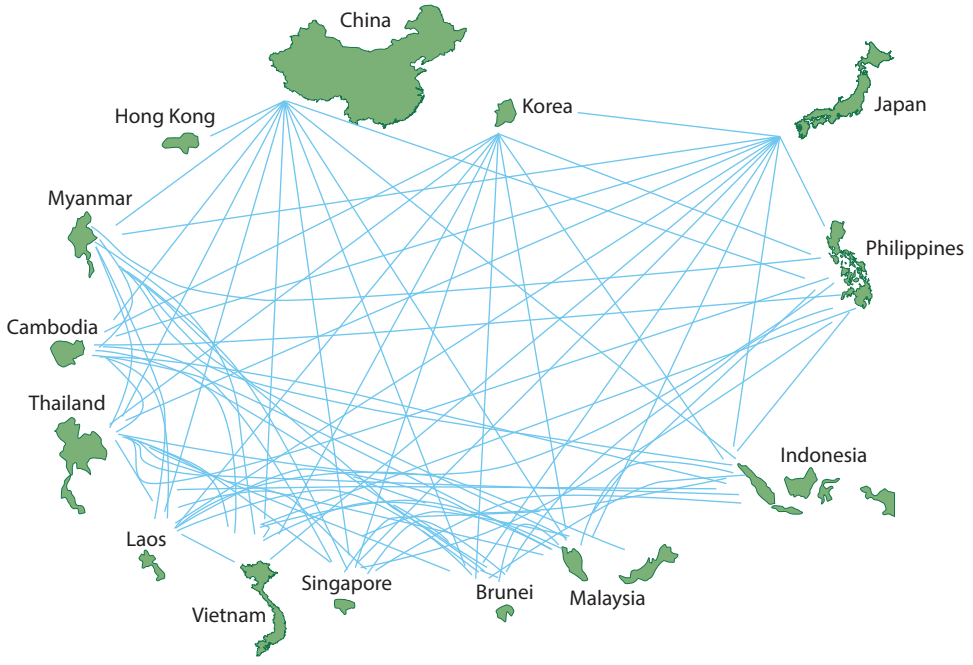

Figure 1

The East Asian Noodle Bowl (6). The map of the Asian free trade agreements (FTAs) were signed or under negotiation in January 2006. East Asia is defined as the ten ASEAN (Association of Southeast Asian Nations) member states, China, Japan, and Korea. Printed with permission from Wiley & Sons.

has experienced major reorganization and integration globally (146). The WTO presides over 24 multilateral trade agreements covering a wide range of binding obligations on issues including the General Agreement on Trade-In Services (GATS), Trade Related Aspects of Intellectual Property Rights (TRIPS), Technical Barriers to Trade (TBT), the Agreement on Agriculture, and a dispute settlement system (147).

The WTO acknowledges that health is a legitimate policy goal and provides an exception rule that is contained in most trade agreements, which allows member states to introduce health-related policy measures provided they are deemed necessary to protect human or environmental health and safety and are not introduced to act as a barrier to trade (85). Even still, these exceptions are ambiguous in many areas, causing some trade agreements to be problematic for health.

The Broadening of Scope and Reach in Twenty-First-Century Trade Policy

Multilateral trade talks have stalled since the Doha Round in 2001 (93). In its place, a second approach to trade, regionalism, has gained momentum, which has resulted in a proliferation of bilateral or regional free trade agreements (RTAs) [see **Figure 1** for an example of free trade agreements (FTAs) across Asia] (133). Regionalism can range from informal arrangements to more institutionalized agreements, such as the European Union (EU), the North American Free Trade Agreement (NAFTA), the Southern Common Market (MERCOSUR) in Latin America, and the Southern African Development Community (SADC).

RTAs have moved beyond traditional WTO trade barriers to address and extend nontariff barriers to both trade and investment. A recent analysis of 97 RTAs found that more than one-third

of the agreements contained provisions that were not related to tariffs and that extended the minimum obligation of member states beyond that required by the WTO (6, 7, 108). RTAs sit outside the traditional WTO multilateral system because they do allow for discrimination between member states and often contain different tariff schedules, exclusions, implementation periods, rules of origin, and customs procedures that arguably undermine progress toward a more open, transparent, and uniform rules-based multilateral trading system—a key WTO trading principle (19). These WTO-plus provisions effectively extend the control of investors behind the border to shape states' competition policies (47% of all agreements), the movement of capital (39%), IPRs beyond the TRIPs agreement (37%), and investment liberalization (31%) (7).

The extended scopes of these agreements have public health implications. They can limit access to affordable medicines and shape other domestic health and social policies by allowing private investors to challenge public laws in nondomestic fora (36). Compounding these concerns is the fact that not all regional FTAs include the WTO exception provisions, which allow member states to implement policies that protect human and environmental health (3, 35).

TRADE AND HEALTH: PATHWAYS AND ISSUES

Trade policies are powerful drivers of the distribution of power, money, and resources, which affect people's daily living and working conditions, their health-related preferences and behaviors, and ultimately their health outcomes (78). The sidebar, Living with Trade Liberalization, illustrates how trade can influence peoples' health in various direct and indirect ways.

Trade liberalization done well can improve economic growth by increasing export and investment opportunities. In theory, economic growth and increasing state wealth help alleviate poverty and are beneficial to human health because they provide opportunities for work and improved living conditions through greater income security; improved labor standards; better access to health care, including affordable medicines; and good nutrition (34, 60, 90, 124, 125, 144). However, when done poorly, evidence indicates that trade policy and agreements can exacerbate imbalances in power, money, and resource distribution between and within countries, resulting in harms to health and health equity (13, 22, 39, 41, 47, 55, 73, 75, 77, 79, 107, 121, 139).

LIVING WITH TRADE LIBERALIZATION

It is not unusual to start the day with generic vitamins produced locally without a patent protection while munching cereal that passed strict package labeling control, only to spend lunch-break at the dental clinic. At the clinic, a Filipino dental technician works with an X-ray machine imported from Germany, while the dentist prescribes a medication imported from the USA where it is produced under the patent protection. You return to the office while smoking a cigarette from a packet labeled with health warnings. On the way home, you stop for a Swedish massage (by a Swedish therapist) to improve circulation. Arriving home, you find last week's medical results (and a bill) that were transcribed and processed in India. You try to remember if your health insurance provided by an Australian-owned insurance company provides 75 or 80 per cent coverage. Settling down after dinner to watch a news program on cable television, you catch an advertisement for reducing weight while being pampered in a luxurious resort and spa in Thailand. Immediately afterwards, the news begins with details about several more cases of avian 'flu and you cannot help but think how your government is unable to protect you from this disease.

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Investment Liberalization

Today's global economy is characterized by the use of global value chains (GVCs), a process by which different stages of the production process are conducted across different countries (104). GVCs are typically coordinated by transnational corporations (TNCs), and cross-border trade of inputs and outputs takes place within their networks of affiliates, contractual partners, and arm's-length suppliers designed to maximize profits (e.g., labor costs). TNC-coordinated GVCs account for some 80% of global trade (133).

New-generation RTAs, including the major Trans-Pacific Partnership (TPP) agreement under negotiation at the time of this writing (134), are aimed explicitly at supporting GVCs and TNCs. They typically provide stronger investor protections; enable greater industry involvement in policy making; and can require changes to domestic policies to enable, for example, regulatory coherence, transparency, trade facilitation, and harmonization. These behind-the-border regulatory controls on government increasingly limit the policy space or "the freedom, scope, and mechanisms that governments have to design, choose, and implement public policies in order to fulfill health-related priorities and aims" (69). The most recent and well-known example of such an attempt to control domestic policy is the Australian Tobacco Plain Packaging case: The Australian Parliament introduced laws that required the plain packaging of cigarettes in the interests of the public as a matter of public health. Philip Morris (PM) and other tobacco companies first challenged this measure in the Australian High Court, and after losing the case there, PM lodged a dispute to be determined at international arbitration utilizing an investment dispute clause found in a bilateral investment treaty signed by Australia and Hong Kong (69). Others have argued that the inclusion of investment protection clauses such as investor-state dispute settlement (ISDS) chapters act to preference private rights over public interests and the sovereignty of the member state to regulate investors or to introduce social and health policies that may be considered by the state as necessary to protect public and environmental health but are considered by investors as barriers to trade (27, 32, 47, 70). The potential for health protection measures to attract lengthy and costly trade disputes, via ISDS provisions found in many trade agreements, can lead to "policy or regulatory chill," discouraging governments from moving forward with policy measures or new legislation or encouraging them to hesitate while they await the outcomes of trade disputes (84, 138).

Unhealthy Commodities

The rise in FTAs that include demands for behind-the-border alterations of domestic policy and regulatory regimes has correlated with an increase in trade and investment in health-damaging commodities (particularly tobacco, alcohol, and highly processed foods) and the consequent global diffusion of unhealthy lifestyles (33, 72, 82).

Highly processed foods. Trade liberalization and associated global market integration over the past half-century have contributed to the rapid rise in rates of obesity and diet-related noncommunicable diseases (NCDs) worldwide over the past few decades. This disease burden is attributed to a global convergence in food consumption patterns toward the typical Western diet (rich in energy-dense animal products, plant oils, and sugars) and away from traditional diets rich in staple cereals, pulses, and vegetables. The greatest dietary shifts have been seen in the populations of low- and middle-income countries (LMICs), where rates of obesity and NCDs are now approaching, or in many instances exceeding, those seen in high-income countries (5, 110). At the same time, in many LMICs, high rates of obesity and NCDs coexist with persistently high rates of undernutrition and micronutrient deficiency.

There have been three important changes in global food systems over this time: (*a*) the opening of domestic markets to international food trade, leading to large increases in volumes of trade in agricultural inputs and food products and facilitating the global diffusion of food products that are harmful to health (40, 75); (*b*) the increased entry of transnational food companies and greater foreign direct investment (FDI) in the primary production, food processing, and retail sectors of these markets; and (*c*) intensified global food marketing and promotion driving shifts in cultural expectations and dietary preferences (54, 114).

Not only has the volume of food products traded internationally increased exponentially in the past few decades, but the composition of food has also changed. Volumes of trade in traditional cereals have declined relative to higher-value products such as seafood, meat and dairy products, high-value fruits and vegetables, and processed foodstuffs (112). Production of a handful of globally dominant cereal (wheat, rice, maize, and barley) and oilseed (particularly soybean) crops has increased, whereas production of other minor cereals (such as millets, rye, and sorghum) and starchy root crops (such as cassava, yams, and sweet potato) has declined dramatically (67).

These changes in the food system are keenly observed in Mexico, where NAFTA enabled significant US agribusiness investment across the full spectrum of the food supply chain, creating challenges for local agriculture production and changing the focus of production from domestic to export cash crop production. The price of maize, a staple of the Mexican diet, has also experienced upward pressure owing to the use of corn for ethanol fuel and animal feed (20). Overall, the shift in agricultural production arising from NAFTA has had major effects on the local availability, nutritional quality, price, and desirability of foods (38, 55), including significant increases in the production and availability of processed foods (67). Similar reductions in barriers to investment have led to an expansion of highly processed food markets in Central America (56, 131) and have also resulted in the imposition of lower regulatory standards on food industry manufacturing, retailing, and advertising by governments in Asia (41). For example, in 2006, Thailand proposed the introduction, on public health grounds, of a traffic-light labeling system on the front of snack food products marketed to children (53). However, the Thai government abandoned the traffic-light system and implemented a monochrome guideline daily amounts label (122) after claims from the United States and other countries that the health policy contravened the TBT agreement (148). Many of the snack foods were introduced to Thailand by US-owned TNCs.

Tobacco. Tobacco-related disease kills nearly six million people each year, with populations in LMICs increasingly at risk (137). These health challenges will continue to grow rapidly as tobacco companies push aggressively into developing countries with young populations, growing incomes, and often relatively weak political systems (31). Trade liberalization has increased both the imports of tobacco products into countries worldwide and the levels of FDI by the tobacco industry. These events have led to increased competition in tobacco-product markets, reductions in the relative prices of these products, and increases in their advertising, promotion, and consumption (30, 46, 81, 120, 129, 135). In the former Soviet Union countries, for example, tobacco consumption increased by ~56% in countries that received major tobacco industry investment, whereas a 1% drop in consumption was recorded in those countries that did not receive any such investment (46, 94).

The Framework Convention on Tobacco Control (FCTC) compels parties through both binding commitments and voluntary guidelines to implement a set of evidence-based tobacco control policies and practices, including tax increases on tobacco products; smoke-free policies in public places and work environments; bans on tobacco advertising, promotion, and sponsorship; large and graphic warning labels on tobacco packaging; and mitigation of tobacco industry interference in health policy making. The FCTC may be used to interpret international trade and investment

agreements, making those agreements more sensitive to tobacco control (31). However, the provisions set out in the FCTC have been repeatedly challenged under international trade law (84).

Australia's plain packaging tobacco legislation provides a useful example. Following the passage of the Tobacco Plain Packaging Act of 2011 (Commonw. Aust., Act No. 148), all manufactured tobacco products must be sold in government-prescribed brown packages with the brand name only in small, plain script. Tobacco companies have accused the Australian government of breaching its trade obligations under three different legal instruments (66, 84, 97): the Australian Constitution, which protects rights to tangible and intangible property; the WTO TBT and TRIPS agreements; and the Australia–Hong Kong Bilateral Investment Treaty of 1993. With regards to trade, the push toward including stronger IPRs for investors in trade agreements and the use of ISDS mechanisms present a particularly significant threat to tobacco control measures (65, 66, 117). Legal challenges such as Philip Morris's challenge of the Australian government's introduction of plain packaging laws impose significant time, cost, and resource burdens on governments, which can produce a chilling effect on the development of similar laws by other states. Countries such as Thailand, New Zealand, and Ireland are all awaiting the outcome of Australia's trade dispute with Phillip Morris Hong Kong before moving forward on proposed plain packaging legislation of their own. The fact that a legal clause in a trade agreement can limit the power of a state to protect the public from a product that kills if used in the manner for which it is produced is an example of the weakness of the system's protective architecture, which consequently exacerbates the adverse effects of the global political determinants of health.

Alcohol. Alcohol accounts for 3.8% of global mortality and 4.6% of the global burden of disease (115). As with tobacco, alcohol control measures seek to reduce access, raise prices, and restrict advertising and promotion to reduce consumption and mitigate associated health and social problems. However, under current and pending international agreements, governments and alcohol corporations may challenge these protections as constraints on trade (150, 151).

The operation of trade and investment agreements that affect alcohol-related health risks is similar to that for tobacco-related health risks. The liberalization of alcohol trade and investment increases availability and access, lowers prices through reduced taxation and tariffs, and increases the promotion and advertising of alcohol (11, 151). Trade liberalization has facilitated greater availability and access for alcohol companies: In April 2006, the Distilled Spirits Council of the United States reported that since the "conclusion of the Uruguay Round of WTO in 1994, US exports of distilled spirits have increased 86%, growing to $743 million in 2005" (140, p. 254).

Just like tobacco and many foodstuffs, most product brands of spirits, beer, and increasingly wines are global, bearing globally recognized imagery. Alcohol production and trade are controlled by TNCs, which for the past two decades have engaged in processes of consolidation and expansion; thus, the global alcohol market is now dominated by a handful of large corporations (17). The International Center for Alcohol Policies reported that in 2005 the top 10 producers accounted for 66% of the global market share for beer, 59% for spirits, and 16% for wine. Leading alcohol transnationals, Diageo, Pernod Ricard, and SAB Miller, all claim double-digit growth in sales in LMICs (98).

The alcohol industry seeks to influence agreements and can be expected to work through trade agreements to reduce tariffs, increase market access, and restrict effective domestic regulations, including restrictions on alcohol advertising (49, 151). In January 2010, Thailand notified the WTO Committee on TBT of its intention to introduce a new alcohol warning law under its Alcohol Beverage Control Act. It proposed to prohibit any words on alcoholic beverage packages that would mislead the consumer into believing that (*a*) alcohol can improve health or that (*b*) one

alcoholic beverage is less toxic than another. It also proposed that all alcohol beverage packages include the warning, "Sale of alcohol beverages to persons under 20 years old is prohibited." The final requirement was that all alcoholic beverage packages carry one of six graphic warnings. These proposals by Thailand are a technical regulation and have been challenged on TBT grounds by numerous countries, including Australia, which was simultaneously implementing stricter alcohol controls within its own borders (101).

Health Services

Among the multilateral trading rules, the GATS and the TRIPS agreement are particularly relevant to the health care services sector because they regulate health-related services as well as the trade and production of medicine. More recently, bilateral and regional FTAs have tended to increase the restrictions imposed on countries with regard to trade in health services.

Access to medicines. Pharmaceuticals are the most important health-related products that are traded, accounting for 55% of all health-related trade. In 2006, the pharmaceutical market was valued at US$650 billion, of which the generic market contributed less than 10% (US$60 billion) (123). The World Health Organization (WHO) defines access to medicines as access to a minimum of 20 of the most essential drugs that are available and affordable and are physically accessible to the patient (80). Affordability is cited as the most common reason for inadequate access to medicines in developing countries (80).

Governments have their own regulations to help achieve access-to-medicines policy objectives, but clauses within FTAs can shape that regulation and thus impact the availability, affordability, and geographical accessibility of medicines. For example, intellectual property (IP) provisions broadened in RTAs beyond those required under TRIPS—commonly referred to as TRIPS-Plus provisions—not only enhance the protectionist monopoly privileges afforded to a few corporations, but also defeat the notion of market competition. These actions, in turn, cause medicine prices to remain artificially high and consequently limit some populations' access to medicines (48). The extended TRIPS-Plus provisions include the following:

- Definition of patentability criteria, extending patentability beyond what may be defined at a local level (this item has also been linked with the use of ISDS provisions);
- Data exclusivity, which prevents data collected to establish the efficacy and safety of a drug to be used by generic companies, leading to delays in the manufacture of generics and thus increasing the price of medicines;
- Limits on parallel importation and compulsory licensing, which are both tools that have been used most commonly by developing countries to address major public health issues, including HIV/AIDS;
- Evergreening, which involves granting an extension or a new patent for a drug that has previously been patented but has undergone a minor modification or is being offered for a new use; and
- Application of border enforcement measures that could block international trade in generic medicines when they are suspected of infringing on patents in the countries through which they transit (132).

A 2012 joint report from the WTO, the WHO, and the World Intellectual Property Organization describes the impact of TRIPS-Plus provisions—particularly data exclusivity provisions—dictated by trade agreements in Costa Rica, the Dominican Republic, Colombia, and Jordan, as increasing the expenditure on medicines by tens of millions of dollars (149). An examination of the

availability of certain drugs in Guatemala found that the Central American free trade agreement (CAFTA) IP rules reduced access to some generic drugs already on the market and delayed new entry of other generics (119). The extension of IP protections in FTAs acts as a barrier to the generic pharmaceutical industry's ability to manufacture and distribute cheaper medicines sooner and, thus, acts as a barrier to affordable, timely access to medicine (86).

Despite assertions by the pharmaceutical industry that market monopolies are needed to bolster the research and development of new drugs, the WHO has suggested that the current IP incentive structure is inadequate, demonstrated by it having had no effect on increasing new-drug production or vaccines for priority health problems, such as Dengue Fever and Chagas disease, in developing countries for the past 60 years (80, 99, 123). The inclusion of TRIPS-Plus provisions in trade agreements has provided an increasing private reward to pharmaceutical companies while decreasing the sovereign ability of member states to limit the impact of those measures on public rights to affordable medicines (14).

Health care personnel. Trade-in services have grown rapidly under the auspices of the GATS. The GATS addresses four modes of service delivery: cross-border supply of health services, consumption of services abroad, FDI, and movement of health professionals (147). International trade-in services are thought to provide benefits such as new technologies, increased capital, and reductions in the burden on government resources with commensurate reallocation of those public resources where they are most needed (92). However, examining the costs and benefits of trading in health services is difficult, given that there is no systematic collection of data on the quantity of trade or impact of trade on the health system (91). On the contrary, available data show that the movement of health professionals from the least-developed countries—those that have scarce human resources for health but have the greatest health needs—to the richest countries with the most resources, a process known as "brain drain" and "cream skimming," is exacerbating issues of access to health care services in countries that already have extremely limited access to already limited services (102).

Compared with TRIPS, GATS offers a more flexible approach to accommodating legitimate noneconomic health policy goals of members (23). Article XIV allows countries to carve out areas over which they wish to retain national sovereignty, including universal health care (109). However, as discussed previously, experiences with various regional and bilateral trade agreements indicate that the protections offered by carve-outs and general exceptions do not always provide the anticipated safeguard of domestic policies. Of the 35 times in which WTO members have attempted to use the GATS Article XIV exception or the GATT Article XX exception to defend a policy measure, only one attempt succeeded (111).

A new regional FTA, the Trade in Services Agreement (TiSA), is currently being negotiated (26). It sits outside the WTO agreement and the GATS, and academic and public health advocates are concerned that many of the flexibilities and protections of national policy space that exist in the GATS will be removed under the TiSA (111).

Working Conditions

Adults with better jobs enjoy better health (16, 100, 21, 89). Of concern, therefore, is the global growth, especially since the financial crisis in 2007–2008, in job insecurity and precarious employment arrangements (such as temporary work, part-time work, informal work, and piece work), job losses, and a weakening of regulatory protection of working conditions (1, 59, 61). These changes in the labor market have been accompanied by declining job control, growing financial insecurity, less work-hour flexibility, and less access to paid family leave (12, 61).

Trade and investment liberalization are closely linked to international and domestic labor markets, affecting job creation, wage and labor standards, and protections (77, 96, 126). There are winners and losers when it comes to jobs and trade liberalization. Trade liberalization appears to increase unemployment in the sector competing against imports and reduces unemployment in the export sector; the impact on domestic unemployment per se is ambiguous (113). However, the quality of jobs that are created and those that are lost is not the same. Simulations have shown that as many as one-fourth of existing "good jobs" (those with above-average wage) may be destroyed through trade liberalization (24). Some argue that trade liberalization can lead to inequalities in domestic labor markets via wage differentials, where wages for highly skilled workers in globally competitive industries rise and those for lesser-skilled workers fall (51). The work by Ranjan supports this argument, showing that intersectoral wage inequality is likely to increase as a consequence of trade liberalization (113).

The increased focus of trade on investment liberalization brings some additional nuance to these discussions. Within host countries, foreign-owned firms pay higher wages than do domestically owned firms, and some evidence indicates that foreign-owned firms pay more for a worker of a given quality. However, local firms may be forced to contract or close down (87). In addition, pressures on costs from global buyers often mean that GVC-related employment can involve poor working conditions, increasing risks including occupational safety and health. Also, employment in GVCs can be precarious, as fluctuations in demand are reinforced along value chains (133).

The inclusion of labor provisions in trade agreements has increased significantly in the past 2 decades, with ~40% of trade agreements including conditional labor provisions. Failure to comply with agreed labor standards can incur an economic sanction (60). Although these provisions in trade agreements are often contested as being protectionist, there are a number of reasons to include them that are important for health and human rights (18). One concern is that trade liberalization, without the necessary safeguards included in these provisions, may lead to a race to the bottom and a consequent reduction in core labor standards[1] articulated in the ILO 1998 declaration on fundamental principles and rights at work (58). In addition, adequate social policies that provide social safety nets and economic policies that provide flexibilities to accommodate countries' varying development levels and productive capacities can help alleviate tensions in domestic labor markets that inevitably follow trade and investment liberalization (74, 118).

Environmental Effects

Although modern ways of living have greatly improved average levels of health, asymmetric economic growth, unequal improvements in daily living conditions, and unequal distribution of technical developments have perpetuated and/or exacerbated health inequities (22). In creating a global marketplace that depends on ever-increasing volumes of production and consumption, the same economic trajectory has led to increasing overexploitation of finite natural resources, energy scarcity, and an overload of natural environmental systems (2, 43, 52).

This human activity has increased the atmospheric levels of greenhouse gases, particularly CO_2, methane, and nitrous oxide, to a near-critical state that now threatens an environmental

[1] Core labor standards are (*a*) freedom of association and the effective recognition of the right to collective bargaining; (*b*) the elimination of all forms of forced and compulsory labor; (*c*) the effective elimination of child labor; and (*d*) the elimination of discrimination with respect to employment and occupation.

crisis as the world warms, parts of it becoming unusually wetter and subtropical regions becoming drier (62). Various implications include the diverse impacts of sea level rise, disrupted agricultural productivity, displacement of people, and loss of livelihoods (63). These climate changes will negatively affect health, predominantly owing to the exacerbation of existing health conditions, including infectious diseases and malnutrition. Climate change may also increase the risk of NCDs and mental ill-health both directly, via increasing frequency and intensity of extreme temperatures and weather events, fires, and air pollution, and indirectly, via changes to food and water security. The distribution of health impacts will be inequitable: The most vulnerable communities, in rich and poor countries, will experience the worst effects (43, 63).

The effects of specific international trade agreements on environmental conditions, as well as the aggregate effect on global climate, will affect global health in ways that we are only beginning to understand. Trade may affect health by magnifying unsustainable patterns of economic activity, exacerbating problems of pollution, resource depletion, and environmental degradation (15). Changes in trade and foreign investment policy can affect the environment by expanding the scale of economic activity, by altering the composition of economic activity, and by bringing about a change in production techniques (50).

Trade and environmental policies are therefore inextricably linked, but often climate policy and environmental protection priorities, as with health policies, are seemingly trumped by the need to protect and expand the flow of trade and investment. Despite the establishment of the exemptions under Article XX of the GATT, which allow for the introduction of domestic law and policy measures that provide for public health and environmental protection when it is "necessary to protect human, animal or plant life or health" (Article XXb) or are "relating to the conservation of exhaustible natural resources" (Article XXg), as outlined in the general exceptions of Article XX, the onus rests on those countries seeking to introduce environmentally protective measures to prove that the measures are not applied in a manner that would constitute "a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail" and that they are not "a disguised restriction on international trade." The GATT also led to the development of the Agreement on Agriculture (AoA). The preamble notes the nontrade concerns raised by members about the AoA, including food security and the need to protect the environment.

Similar to the general health concerns arising in new regional and bilateral agreements, trade agreements that reach deep behind national borders and constrain national governments' ability to achieve environmental sustainability are highly problematic. There are many examples of environmental policies that were successfully challenged in international arbitration with regard to international investment, including in agricultural chemical use and water protection. Again, provisions within the investment agreements limit the power of the state to regulate chemical and pesticide use and other agricultural by-products that can damage air, soil, and water quality. The cost of this damage is ultimately borne not by the private investor, but by the public through the loss of these shared resources (32).

ACTION TO ENSURE POLICY COHERENCE

The WHO and the WTO, the two main institutions responsible for governing international trade and health, operated in virtual isolation of one another throughout the early post–World War II decades. There have been incremental moves toward greater cooperation (83), as seen in the Declaration on the TRIPS Agreement and Public Health adopted at the WTO Ministerial Conference in Doha in 2001 (145); the joint report released by the WTO and the WHO in 2002, *WTO Agreements and Public Health* (139); and the adoption of a resolution on international trade and health at the 59th World Health Assembly in 2006, which called for greater coherence

between trade and health policies (136). However, the current and emerging trade policy focus of economic integration and investor protections sitting outside the rules of the WTO suggests that trading relationships and commerce continue to be prioritized over health concerns and indicates a gap in governance processes that can facilitate coherence between trade and health policy (33).

The *Lancet*–University of Oslo Commission on Global Governance for Health recently published research that identifies how the current global political architecture perpetuates a democratic deficit, weak accountability mechanisms, and weak or absent protective institutions that allow for the adverse effects of the global political determinants of health to persist (106). For example, sovereign states may recognize the cost to health by agreeing to the inclusion of TRIPS-Plus provisions in trade negotiations, but in practice, weaker actors may find that they have limited ability to reject the TRIPS-Plus proposal if they are faced with the competing interest of gaining greater share of the stronger actor's international agricultural market (106). This dilemma highlights how the present system of global governance is generally structured to promote and protect the interests of the most powerful agents at a cost to the health of the world's most vulnerable people (57).

Addressing these system dysfunctions requires, arguably, an examination of the political economy of health beyond a reliance on elite policy forums and technocrats to include other groups, vehicles, and mechanisms that are usually excluded from policy discussions (25). For example, the realization of the rights and freedoms noted in the International Bill of Rights has been impeded and subjugated by the rights of corporations established in FTAs. A reliance on a human rights framework and a requirement that trade agreements include a human rights safeguard clause are mechanisms that could be utilized to restore balance (64).

Additionally, Drahos, Sell, and Odell have all advocated for the use of soft forms of power by weaker states that include seeking engagement from a broader range of actors (29, 103). Their model proposes the formation of lobby groups that represent the interests of not only marginalized nation-states and community organizations but also competing sections of industry that are trying to pursue public health priorities and potentially to occupy a counter-hegemonic position within the global trading system. They propose developing circles of consensus to build the political and technical capital of less powerful countries, which would allow them to establish and maintain a broader international coalition that could tackle the hegemonic powers of groups such as Big Pharma and the WTO (29). However, Drahos warns that "the informal coalition of developing countries and NGO actors that brought the Doha declaration into being on access to medicines may prove ineffective at managing a longer term campaign, like securing a global patent regime that better services public health goals," because informal groups lack a formal structure that monitors and develops the policy knowledge needed to negotiate a complex international agreement (28).

FUTURE RESEARCH IN THE TRADE AND HEALTH FIELD

The Need for an Interdisciplinary Approach

The integration of health and trade policies and goals, and the establishment of a formal structure to monitor and develop that policy knowledge, requires substantial input from the economic, international relations, legal, and health communities (68). The health sector's early struggles in this field are at least partly the result of not sufficiently engaging the existing economic, political, and legal frameworks and actors. The complexity of the issues—and particularly the fact that

the different sectors often lack meaningful understanding of the others—suggests that resolving these policy challenges is very difficult. However, researchers from a range of disciplines including population health, political science, international relations, and law have been working together to advance approaches to assessing and monitoring the multiple direct and indirect pathways by which trade affects health (for examples, see 13, 42, 54, 76, 85, 105, 117, 130, 143).

Understanding the Political Economy of Health

Collaboration has been increasing among researchers seeking to understand the struggles between different interest and power relations, politics and governance, norms, policies, and practices that arise from transnational interaction and the ways in which they shape the social conditions that affect health and health inequity: the global political determinants of health. Likewise, when trying to understand the international economic policy–domestic health regulation dynamic, the concepts of issue framing and issue networks can help us understand how ideas become policy or standards of practice and are diffused within and across countries. This type of research can contribute to the study of the intersectoral challenges of developing and implementing health policy by focusing on the ideas, interests, discourse, and behaviors of policy actors.

Complexity and Systems Science

Related to the issue of interdisciplinary research and intersectoral working is the recognition that addressing the trade–health nexus requires a systems approach. To date, when tackling a complex problem such as trade and health, the tendency is to simplify the problem and the causal pathways and, therefore, the policy domains that give rise to outcomes of interest. However, the many variables in each of these systems interact with each other often in a nonlinear way, with many interdependencies and both balancing and reinforcing feedback loops, and the outcomes of interest (in this case, pursuit of trade goals and health goals) emerge from the system as a whole. A coherent, integrated approach to policy formulation and implementation in the trade–health space needs to address the many links that operate indirectly and dynamically through economic, social, and health systems. Combining health, trade, and other relevant policy domains and aiming to understand the whole system's behavior will help elucidate key leverage points or places to intervene most effectively (45, 116). There is, however, an almost complete lack of analytic tools available to study, clarify, and communicate these linkages. Complex system thinking, which has been receiving growing attention in the public health field, offers considerable potential to address this gap (10).

Measuring, Monitoring, and Evaluation

Generating political priority for health as an important trade policy concern has been hampered by the limited empirical investigation of these links and the lack of in-depth understanding of the multiple ways by which these pathways operate (37). Recent interdisciplinary research by Stuckler and colleagues has begun to introduce quantitative approaches to demonstrate the link between trade agreements and NCD risk factors (128). Similarly, the systematic monitoring and evaluation of the impacts of trade policies and agreements on health are essential to help inform the development of effective, coherent trade, health, and social policy approaches capable of mitigating the adverse effects of trade liberalization and maximizing its positive effects on health. Health impact assessments (HIAs) and human rights assessments (HRAs), which are not yet systematically

undertaken or reported in any country (although HIAs are sometimes incorporated as part of environmental impact assessments in the United States and HRAs in the European Union) (42), offer important tools for objectively evaluating the potential impacts of proposed trade agreements. Another example of a potentially useful tool is the recently developed approach by INFORMAS (International Network For Obesity Research/Monitoring and Advocacy Support) to ongoing systematic monitoring of the impacts of trade agreements on food environments (42).

FINAL COMMENTS

This article argues for a shift in how we understand and act to improve global health equity. We have demonstrated that although trade liberalization can bring about health benefits, some health risks can nevertheless be mitigated only by changing specific terms included in or excluded from trade agreements and by preserving the policy space of member states to protect public health. But steps must also be taken to encourage and empower state and nonstate players to counter the forces of powerful business elites and to assist in improving the economic, social, environmental, and political determinants of health that affect the realization of the human right to the highest attainable standard of health.

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