

Original Article

Ethical consequences for professionals from the globalization of food, nutrition and health

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Globalization is the process of increasing interconnections and linkages, within societies and across geography, due to improved communication and expanded world trade. It limits the differentiation wrought by human cultural evolution, and homogenizes health practices, diet and lifestyle. There are both beneficial and adverse consequences of the globalization process. Globalization also presents a challenge to the development of ethics for practice and advocacy by food and nutrition professionals. Among the related terms, 'morals', 'values' and 'ethics', the latter connotes the basic rules of conduct for interactions within society and with the inanimate environment; rules based on recognized principles (ethical principles). The application of these principles is to resolve ethical dilemmas that arise when more than one interest is at play. Recognized ethical principles include autonomy, beneficence, non-maleficence, justice, utility and stewardship. These can be framed in the context of issues that arise during advocacy for material and behavioural changes to improve the nutritional health of populations. Clearly, at the global level, codes of good conduct and the construction of good food governance can be useful in institutionalizing ethical principles in matters of human diets and eating practices. Ethical dilemmas arise in the context of innate diversity among populations (some individuals benefit, whereas others suffer from the same exposures), and due to the polarity of human physiology and metabolism (practices that prevent some diseases will provoke other maladies). Moreover, the autonomy of one individual to exercise independent will in addressing personal health or treatment of the environment may compromise the health of the individual's neighbours. The challenges for the professional in pursuit of ethical advocacy in a globalized era are to learn the fundamentals of ethical principles; to bear in mind a respect for difference and differentiation that continues to exist, and which should exist, among individuals and societies; and to avoid a total homogenization of agriculture and food supplies.

Key words: Chronic disease, diet, ethics, globalisation, nutrition.

The principles

Globalization

Although the size of the earth is unchanged, its habitation by humans and the degree of human intercommunication has increased. During the evolution of hominids to humans, various parts of the world became inhabited, and groups adapted to resources in specific niches. Life was tribal in the formats of hunter-gathers and pastoralists. Only with the advent of agriculture, some 9000–10 000 years ago,^{1,2} did food supplies become secure. At the same time, it also became less diverse. Food security allowed for aggregation beyond nomadic tribes; this led to fixed settlements, to civilization, to organized religion and to scholarship. With civilization came conquest and colonization, conducted over adjacent lands through antiquity, then later by sea. It was the seafaring cultures of Europe that encountered the populations of the Americas and Asia in the fifteenth and sixteenth centuries, of Oceania in the eighteenth century, and of Africa in the nineteenth century. With the industrial revolution came a communications revolution. Sails gave way to steam on the sea. On the land, horse-drawn wagons on trails gave way to railway cars on rails pulled by steam

engines. The internal combustion engine replaced the horse with the automobile, and powered flight emerged in 1903.

An interesting semantic distinction can be made between 'reach' and 'impact'. The former concerns the extent of the dissemination of an idea or action; the latter connotes its degree of influence for change. The communication of messages was once linked to the travel of people. However, the invention of the telegraph allowed words to travel in advance of people; this phenomenon accelerated through the inventions of the telephone, radio, television and finally the Internet. The world became an easier place for both people and messages to move across, and easier movement of goods and services and of concepts and ideas developed in parallel. Distance, tariffs, language and cultures are among the domains in which barriers have fallen with huge advances in

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travel and message communication. The result has been a phenomenon called globalization.

Globalization emerges not only into a world shrunk by advances in communication, but a world simultaneously expanding in terms of demography. The most recent demographic projection, released by the United Nations (UN) in October 2001, describes the population of the world as expanding to 10.5 billion human inhabitants by the year 2050, a 70% increase over the present six billion. The UN expressed concern over the implications for the quality of human life, as well as for the implicit pressures on natural resources and the habitats of the remaining natural flora and fauna on the planet. The world has evaded the Malthusian equation over the 300-plus years since Malthus first formulated his prediction; however, going forward, the constraints of land and resources, and the consequences of contamination and environmental deterioration wrought by attempts to feed, clothe and shelter 4.5 billion more individuals through the next half century, will become a real concern.

Globalization has consequences for food, nutrition and health. Some implications are familiar to us and globalization merely increases their scope and extension. Other consequences are new or novel, resulting from new interactions and complexities, and still others are not yet evident, and can only be voiced now as a matter of speculation and conjecture.

Eugenio Diaz Bonilla has been quoted as saying: 'Part of the problem in assessing the pros and cons is that globalization means different things to different people'.³ Globalization begins with the globe. The following quote outlines a confluence of views on the meaning of globalization.⁵

For some, globalization refers to the multiplication and intensification of economic, political, social, and cultural linkages among people, organizations, and countries at the global level. For others, it means a tendency toward universal application of economic, political, social, cultural, institutional, and legal practices...a third notion is that globalization means the increased importance of significant worldwide effects caused by the behaviour of individuals and societies. These effects include global warming, financial crises, and the spread of HIV/AIDS (Anon.)

In food and nutrition terms, an expanding population must be fed in such a way that will support adequate nutrition for each of its members, bringing them through the risk of early death from infection.⁴ Moreover, the survivors must eat in such a way as to promote productivity and reduce the risk of chronic disease, emphasizing foods with protective factors and minimizing foods with disease-promoting properties. Finally, for sustainability for future generations, and out of respect for the thousands of other species of flora and fauna that share the planet, global feeding (as well as sheltering, clothing and transporting) of the human population must proceed in ways that minimize ecological damage to the environment.⁵

In effect, globalization portends the convergence and amalgamation of cultures into one, dominant 'superculture'. In the past, regional and ethnic cultures represented islands of unique dialects and customs, barriers to the free-flow of,

and 'cross-contamination' with, other ideas. The migrations and conquests of antiquity produced some co-mingling of folkways, with civilizations civilizing the uncivilized, and with hordes of barbarians moving things the other way, but with a modest exchange of ideas and culture.

Sharing among cultures is the first step to amalgamation. Improved transportation and communication has led to increased sharing of ideas and customs among cultures. Two centuries ago, a European might experience Mediterranean cuisine by taking the Orient Express to its terminus on the Bosphorus. In the early part of the last century, a European might be introduced to Mediterranean cuisine by dining with a neighbour family of Mediterranean origin. Recently, one has been able to go to a Mediterranean-style restaurant to enjoy this style of cuisine.

Beyond sharing comes dominance of the cultural amalgam, where assimilation of the 'common' norms becomes the imperative. This is best exemplified in situations where a government creates an official national language. The dominant language of the Internet (English) is becoming a 'super-tongue' across the worldwide web. Food-ways, and to a lesser extent, health-ways, are converging globally.

Dietary change can arise abruptly out of relief situations. In Ethiopia and Eritrea, the dietary staple formerly was *teff*, a nutritious grain high in mineral content. During the civil conflict, relief agencies introduced commodities such as refined wheat flour. The newly acquired practice of using wheat to make traditional bread has persisted in these countries, with the dual disadvantages of dependence on imports and a lower nutritive value for the dietary staple. Alternatively, insidious progression of dietary change, 'mimicry creep', can arise out of free-trade and multinational franchising. The principle of open-markets for seeds, edible commodities and processed foods, has been another route to the convergence and amalgamation of food-ways across cultures, with a tendency toward supplanting of the indigenous food system by the acquired. Carbonated beverages and fast-food restaurants are an example of this insemination of countries worldwide with a common food idiom. Assuming that cultural/evolutionary adaptation between traditional lifestyles and food-ways had developed over centuries or millennia of interaction, an abrupt undoing by sedentary habits and western cuisine is likely to have detrimental effects on human physiology.

One result of globalization is the reduction of diversity and options at all levels. For example, monetary unification on regional bases, such as the Euro across Europe and the 'dollarization' of currencies in Latin America. The International Monetary Fund and regional lending banks normalize national financial planning modes. Another example is that ways of land cultivation, which evolved over the past 10 000 years in ways that (perhaps) brought harmony to delicate and distinct ecological niches, are not adequate to supply increases in demand for cultivated food, brought on by population expansion. Some indigenous autochthonous practices are intrinsically destructive of the environment (e.g. slash and burn clearance), but the generalization of cultivation practices, from broad fertile plains of temperate

grain-belts to tropical climes, is also inherently risky to the environment. A similar analogy would be the move from family and tribal fishing methods to intensive fisheries, causing disruption of fish stocks and an imbalance in natural aquatic and marine food chains.

This conference has explored the reach and impact of globalization on food, nutrition and health; the purpose of this presentation is to explore the ethical implications of our respective professions' advocacy of changes to improve the condition of each of the aforementioned areas. When we as professionals, either practitioners or investigators, call for policies and programmes to change food-procurement and dietary practices, there are always ethical considerations. Now that these policies and programmes are played out on a global stage with a background of freer trade in seeds, commodities, foods and technologies, how are the ethical issues to be addressed? As with all ethical issues, it is not the certainty of answers, but the opportunistic nature of the questions, that is important.

Of human ethics

Ethics is a discipline within the humanities, which is derived from philosophy. However, ethicists themselves would admit that the term has a broader connotation than that of an

academic discipline. For example, Comitas suggests that a semantic hurdle is to distinguish among 'ethics', 'morals' and 'values' (Table 1).⁶ For the purposes of this presentation, I have accepted the definition of ethics as related to social rules. According to Graber *et al.*,⁷ ethical theory has two tasks: '(i) for those situations in which we already know, what is right and what is wrong, it should help us explain why the one choice is right and the other wrong; (ii) for those situations in which it is not obvious, what is right and what is wrong, it should guide us to discover what is the right thing to do'.

The quantitative philosopher and ethicist, Kluge, delineated four ethical assumptions in an essay on allocation of health-care resources.⁸ This is particularly relevant to public policy in diet and health interventions (Table 2). From a more conventional perspective, Roth-Yousey wrote a comprehensive chapter on ethical principles for the practicing dietician.⁹ A modified and expanded version of Roth-Yousey's roster of ethical principles is shown in Table 3, serving as an orientation to the topic at a globalized level. The principles have a differential, but interlocking, relevance to the ethics of professional advice and advising in a globalized world, and following the intertwining of the two systems, provides a template for understanding the principles.

Table 1. Definitions of ethics, morals and values (Lambros Comitas, 2000)⁶

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- Conventional wisdom holds that the words *ethic*, *ethics* and *ethical* pertain to rules of conduct recognized in certain aggregations of categories of human society, rules ultimately rooted in culturally conditioned concepts of justice.
 - On the other hand, *moral*, *morals* or *morality* pertain to character or disposition, considered as good or bad, or to the distinction between right and wrong in relation to the actions.
 - Finally, *value* and *values* are the acts, customs, and institutions regarded or ranked by the individual, the group or a people in a specific, usually favourable, way.
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Table 2. Kluge's ethical assumptions for care allocation (adapted)⁸

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- The principle of equality: all persons, considered as persons, are equal to one another.
 - The principle of justice: justice consists in balancing competing rights and obligations and in fulfilling those, which on balance, are superordinate.
 - The principle of autonomy: everyone has the right to self-determination subject only to the equal and competing rights of others.
 - The principle of impossibility: the existence of a duty presupposes the ability to carry out that duty. (Alternatively: all other things being equal, one cannot have a duty to do what is impossible under the circumstances that obtain.)
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Table 3. Principles of ethics for global nutrition professionals, (modified and expanded from Roth-Yousey)⁹

Principle of autonomy

Individual has the right of choice and self-determination.

Principle of beneficence

Individual should do good and act for the benefit of others.

Principle of non-maleficence

An individual should not do any harm to others with his or her actions: *primum non nocere*.

Principle of justice

Equals should be treated equally, and those who are unequal should be treated differently to compensate for their differences.

Principle of utility

Actions and the use of resources should do the greatest good for the greatest number, but no one should be left out.

Principle of stewardship

Actors should exercise social responsibility and moral judgements and respect for property and good use of common resources.

Principle of autonomy

At the same time as the exploration of the New World as a new frontier, mature European societies of the seventeenth century began to emerge beyond a sense of being in a wilderness. With this change came the enunciation of the principle of autonomy, that is, that individuals have the right of choice and self-determination, along with free will, which should be exercised in society.

The expression of individualism, which was undoubtedly a maladaptive luxury within primitive societies, became a moral imperative for philosophers from the period of the Enlightenment to the epoch of classical Liberalism to the recent era of Neoliberalism. The span from the 1700s to the end of the twentieth century represents an apogee for the individualistic, and a nadir for the collectivist, within the collectivism–individualism polarity. Principal among the autonomy advocates was John Stuart Mill and his 1859 treatise, *On Liberty*.¹⁰ Within this worldview, imposing the will of the majority on the rights of the minority is an anti-ethical stance. This is embodied in the Bill of Rights of the USA Constitution. In the recent neoliberal ascendancy, acting in one's own interest and that of one's family was the imperative; for the 'good of others' was constraining, and systems that link one to one another were 'inefficient' in terms of the rational exploitation of resources.

The principle of autonomy is central to the commentaries of Kluge,⁸ in medical anthropology, and of Shils,¹¹ in medical ethics. The principal of informed consent derives from this autonomy principle. Shils recognized that: 'The term *autonomy* signifies the right of the competent individual to make choices freely about medical care and denoted the obligation of the healthcare provider to communicate effectively with the patient and solicit those decisions'.¹¹ However, Shils draws on the contrast of authority (or authoritarianism). The traditional non-maleficent and beneficent physician of antiquity (and up until the last several decades) was expected to impose his will 'for the good of the patient'. In the modernization of medical ethics, Shils waxes nostalgic for the recent-past approach to a more authoritative assertion of the physician's medical opinion to guide the health-seeking behaviours of the patient.¹¹

Speaking with respect to applied anthropology, Silverman commented: 'The processes covered by that term [globalization] are not entirely new to anthropology, but what globalization has changed for us is the range of "stakeholders" with claims over our work and our place in the power balance among them'.¹² This is the sense in the anthropological community that there is less admiration for paternalism. However, it is the 'cult of individualism' related to autonomy that inspires discussion among anthropological ethicists. As stated by Comitas:⁶ 'For example, it is widely held that science has its own ethic of code of conduct...Anthropological variants of this generic scientific code sometimes include or infer aspects of the Hippocratic dictum of doing no harm. In its sociological sense, the English word *ethic* and its variations pertain to collectivities, not individuals'.⁶ A variant on this consideration comes from

Hakken¹³ who comments: 'In thinking ethically, we should not look for invariant rules for individual behaviour. Also, rather than [sic] asking how *one* should live, we should be asking about making shared, thick ethical constructs with which to talk about how *we* should live'.¹³ Much less prominent in medical ethics, but still present, is a dissenting voice that questions autonomy as specific to the individual; in commenting on genetic research and medical ethics, McIver Gibson comments:

Americans of Anglo-Saxon and Western European heritage worship at the altar of autonomy. For us, rights and duties repose in individuals, and we are forever struggling to understand and establish connections and relationships with other rights-bearing individuals. Such individualism drives our approach to communication, and informed consent, in its philosophical, legal, clinical, and research manifestations, provides us a paradigm, if not a caricature, of how meaning is created and expressed – though not necessarily shared – through soliloquy and monologue.¹⁴

Again, borrowing from the discussions in the anthropological community, it can be seen that there is a growing recognition of the 'globalization of ethics' in a discipline that has been international from its inception. Fluehr-Lobban comments: 'Globalization has become a key concept in multiple economic and political arenas, but there has been a lag in its application to international social science research. The global context of anthropological research is demonstrably present, but the international dialogue regarding its political conditions, its professional constraints, and its moral consequences lags behind this trend'.¹⁵ The two fundamental aspects of ethical behaviour relate to (i) the exercise of free will; and (ii) informed choice. The behaviour induced should not come either by coercion or by subterfuge or deception, whether the unit of recognition is the individual or a collective such as a community.

Principles of beneficence and non-maleficence

The principles of beneficence and non-maleficence are closely related, and are derived from the contexts of social interactions. In the past, there was the luxury of the autonomy principle, people lived in the 'wild', subject to the imperatives of 'nature'; formats for the hunter-gatherer and pastoralist were tribal. Survival was a precarious endeavor for an individual, for any given clan or tribe, and in a larger sense, for *Homo sapiens* as a species. A premium was placed on collective struggle, in which the whims and idiosyncrasies of individuals were suppressed by a culture of collective action and interaction. Even late into the agricultural age, whenever the 'man against the wilderness' setting was on stage, collectivism trumped individualism.

The principle of beneficence is about doing the greatest good for the greatest number; but perhaps its most important feature is the primacy of individuals seeking to be kind and supportive of others in society. Individuals should do good and act for the benefit of others. In so doing, the social forms and institutions created should also be dedicated to the collective well-being. Clearly, the beneficence principle is

often in conflict with the autonomy principle, producing ethical dilemmas in public policy.

As intimated by McIver-Gibson, the focus on autonomy in ethics has been a product of European thought.¹⁴ Most societies have remained closer to the tribal ethos, even with the coming of industrialization and urbanization. The relationship of population density to resources in modern agrarian and industrialized societies may be an essential impetus for ascending the curve back toward collectivism. Both the need to provide and distribute goods and services, and a defence against the degradation of the physical environment, are impetuses for looking to collective actions for the preservation of health of individuals in a world that contains six billion inhabitants, on the way to 10.5 billion.

Non-maleficence is easily recognized as the cornerstone of medical ethics, or at least the ethics of medical practice.^{12,16} An individual should not do any harm to others with his or her actions: *primum non nocere*.

Principle of justice and equality

Justice is seen variously as being about resolving and balancing issues, when there are competing rights, and about providing equal treatment and standards, or even compensatory treatment to compensate for disabilities and disequities, and to produce equivalent results.

Nutrition as a human right

An assumption of Cohen-Almagor, in the context of medical ethics, is that a society has an obligation to meet the health-care needs of its members so as to minimize health-based interpersonal differences.¹⁷ In the public-health domain, this obligation extends to preventive and prophylactic measures. Cohen-Almagor continues: 'A publicly funded health care system is society's attempt to meet this obligation. It follows that a public funded health care system must start from the premise that health care is a right and not a commodity'. Clearly, this principle extends to advocacy for changes in conditions and behaviours toward preserving health and preventing disease.

In 1966, the UN International Covenant on Economic, Social and Cultural Rights stated that everyone should have an adequate standard of living, including adequate food, clothing and housing, and the 'fundamental right to freedom from hunger and malnutrition'. Thirty years later, in 1996, the Food and Agricultural Organization-convened World Food Summit of heads of state reaffirmed 'the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and fundamental right of everyone to be free from hunger'. Clarified in 1999 by the UN Committee on Economic, Social and Cultural Rights, this 'right to adequate food' meant that every human being should have physical and economic access to food that is culturally and nutritionally acceptable. Eide Asbjorn places these developments appropriately in an ethical framework: 'But, if respect for life is fundamental to ethics, the guarantee of adequate food is among the top priorities in the hierarchy of human values'.¹⁸

The road to implementing rights-based strategies, moreover, is based on the assumption of advocacy, messages of advice and behavioural change. Gillespie, espousing capacity development with a rights-based approach to nutrition interventions, states: 'The failure – or limited achievements – of many large-scale nutrition programs is very often a function of insufficient sustainable capacities within communities and organizations responsible for implementing them. The principles behind successful community-driven nutrition programming...include direct action in the form of community-based nutrition programs, backed by supportive or enabling sectoral policies and programs'.¹⁹ He goes a bit further, weaving what is clearly a social and collective impetus with aspects that harken to Millsian autonomy: 'A concrete, rights-based programming process demands a focus on individuals as subjects – not objects – and thus on their inherent capacity. Inclusion of stakeholders in the process of preparing a project or program – right from the initial problem assessment to the design of appropriate actions – is one of the most important capacity development tools'.¹⁹ Hence, the principles of ethics, as rules of interpersonal behaviour, mandate that we respect the free will of the individual, while refraining from producing actions that would produce more harm than benefit, in a context of a moral obligation to act to assure nutritional well-being across the globe.

Principle of utility

What is essentially a corollary at the interface of the beneficence and justice principle is the principle of utility. It assumes that in societies there will be resources to be exploited and partitioned. It seeks to assure that actions and the use of resources should follow the principles of beneficence, that is, to do the greatest good for the greatest number, but no one should be left out. Issues of food and health are concrete and based on the assumption of demands on resources. In many ways, this is an overriding principle for the present considerations of the globalization of food, nutrition and health.

Principles of stewardship and impossibility

The final principles of stewardship and of impossibility are the furthest from abstractions, and move directly into the policy arena. Stewardship is about the exercise of social responsibility and moral judgements, and respect for property and good use of common resources. In contemporary ecological terms, questions of natural resource management for the production of food and the disposal of industrial waste, as well as in the promotion of genetic biotechnology to augment the food supply, the stewardship principle takes centre stage.

Kluge's impossibility principle for ethics interacts with all of the other principles.⁸ It is a sort of a generic disclaimer or 'escape clause'. As stated: 'The existence of a duty presupposed the ability to carry out that duty. (Alternatively: all other things being equal, one cannot have a duty to do what is impossible under the circumstances that obtain)'.⁸ It

is intuitive that, if there are not enough resources, equivalent distribution might devolve not to 'spreading the wealth', but rather to 'redistributing the poverty'. Ethical dilemmas that might occur around the principle of justice, for example, include the question of a temporal versus a permanent assumption in the application of the impossibility principle. Does a human right cease to be a human right if it is impossible to guarantee it? Or, does it remain in effect as a 'right deferred'? This juxtaposition of the definitional aspects of ethical principles clearly provides expectations of conflicts and dilemmas in their mutual adherence.

Practice and paradoxes

Ethics of behaviour-change advocacy, and its global(ized) implications

The principles of ethics come into play for nutritionists in the context of providing advice or counsel for individual or collective actions toward the improvement of nutrition and diet for better health. Although ethics are about rules across the entire society, specific professional disciplines have codified their own ethical rules, tailored to types of situations encountered in the pursuit of professional mandates. Examples that can serve the understanding of nutritionists come from the medical profession (medical ethics) and the field of anthropology (anthropological ethics).

Ethics of prevention

What are the ethical issues and consequences of not advocating preventive action, by making appropriate preventive recommendations upon detecting a situation of potential nutritional or diet-related chronic disease risk? What are the good Samaritan principles in global advocacy? In theory, when there is evidence that a group is at risk, along with evidence-based measures of effective redress, the option not to act (or not to recommend appropriate action) is not viable; such a stance violates the principle of beneficence. However, the skill of knowing the true nature of the adversity and the risk/benefit assessment of the recommendable action is what can vary among nutritionists as professionals, especially when acting on a global stage.

Ethical dilemmas and their resolution

At the end of the day, ethics, unlike morals, do not provide absolute answers, but rather provide guidelines for avoiding or resolving ethical dilemmas that arise when apparently conflicting ethical principles are at play. In the 1970s, the autonomy of commercial action on the part of the infant-formula industry collided with the beneficence and justice principles, which were in support of exclusive breast-feeding as the preferred and sustainable mode of feeding infants. This was resolved by a Code of Good Practice initiated by UN agencies,²⁰ which imposed strict curbs on promotional activities for infant formula by industry. In fact, codes of conduct are common ways to operationalize ethical behaviour. Examples of selected codes for ethical professional conduct are illustrated in Table 4.

Food governance

The advent of globalization has brought with it efforts to define and then to effect a certain type of 'governance' on a global scale, which would impose a common set of rules on all parties, guided by the ethical principles of justice and equity. Walt²¹ has stated:

Globalization means different things to different people; a general definition is the increasing movement of information, material and people across borders. It can be considered in terms of five conflicting but interrelating themes, economic transformation; new patterns of trade; an increasing poverty gap associated with widening health inequalities; the revolution in electronic communication; and the growing role of non-state actors, such as non-governmental organizations and transnational corporations, in global governance.²¹

I first heard the term 'governance', as applied in the parlance of discussions associated with the ethics and values of food production and marketing in a globalized economy, in the councils of the recently formed World Health Policy Forum, which met in Camogli, Italy in 2000. Governing has been the activity that governments effect at the level of municipal, provincial (state), and national legislation and normalization. However, when issues have gone beyond nation-state borders in a global context, the governance of

Table 4. Selected examples of dictates from professional codes of conduct (adapted after material reproduced in full in Roth-Yousef)⁹

From the Code of Ethics for Dietetic Practitioners

The dietetic practitioner...

- No. 1. Provides professional services with objectivity and with respect for the unique needs and values of individuals.
- No. 5. Remains free of conflict of interest while fulfilling the objectives and maintaining the integrity of the dietetic profession.
- No. 7. Practices dietetics based on scientific principles and current information.
- No. 10. Provides sufficient information to enable clients to make their own informed decisions.
- No. 15. Presents substantiated information and interprets controversial information without personal bias, recognizing that legitimate differences of opinion exist.

From the Congressional Code of Ethics for Government Service, for the USA

Any person in government service should...

- No. 4. Seek to find and employ more efficient and economical ways of getting tasks accomplished.
 - No. 7. Engage in no business with the government, either directly or indirectly, which is inconsistent with the conscientious performance of government duties.
 - No. 9. Expose corruption wherever discovered.
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Table 5. Actors and interested parties in issues of 'food governance'

Industrialists (agribusiness, food industry)
International agencies (United Nations)
Government officials (regulatory, executive)
Professional communities (clinical nutrition, public health nutrition, dietetics, food science, food technology, agronomy)
Civil society at large (consuming public, advocacy groups)

processes becomes an issue that relates to decisions that are taken and actions that are imposed by the stakeholders (Table 5). Stakeholders vary in their intrinsic empowerment, from the final consumers of food (the public), to those who attend to its design (seed makers, breeders), its capture (hunters, fishermen or production (agroindustry, agriculturists), its international distribution (trade organizations), its innovation (investigators), its processing, commercialization and marketing (food industry, restaurants, vendors), its safety (regulatory agencies, governments), its local distribution (markets, welfare agencies), and public education (educators, advocates). Creating new tastes and preferences in food drives out the traditional diet with sometimes disastrous health consequences. There are also consequences for the lifestyle of the agrarian sector within the country producing traditional-diet produce. A related impact occurs on the environment of the production and processing of food, and the disposal of its remains. Environmental degradation has an impact not only on the target population consuming food, but also on the region of food cultivation. The consequences of transgenic agriculture on the environment must be considered along with the consequences of transgenic foods on health.²²

As stated, food governance is about the interaction among stakeholders. Chopra, in a discussion of public-private partnerships, has provided one of the first analytical discussions of the topic.²³ He states: 'For the sake of brevity, governance will be considered under the following three themes: representation, accountability, and setting of standards'. On a geographical basis, low-income countries must be represented in the international bodies that deal with food and environmental policy; at the local level, all strata of society need to have representation and a voice. Accountability is a major issue in a globalized world, as sanctions are often hard to apply. Only in the instance of infant formulas has a 'code with teeth' been proposed,²⁰ and many would say that even this code has been edentate for much of its history. The issue of food standards is interesting. If standards are set too high in the name of food quality and safety, it places the less technical players (e.g. low-income-country producers) at a competitive disadvantage compared to countries of greater means. Those who define the standards determine who enters the arena.

I share with Chopra the premise that values (rather than ethics) are the primary considerations in the discussion of food governance.²³ However, as individuals and social groups are in contraposition, ethical dilemmas will arise in the resolution of such interactions. For this

discussion, the advice that professionals provide to stakeholders at positions of the food-governance web have ethical implications. Finally, the benefits of transgenic agriculture to the food-agriculture business and to stakeholders need to be balanced, and regarded as a bottom-line consideration in any adverse effects on health and the environment.

Case examples of ethics and ethical dilemmas in food and nutrition along a globalizing continuum

Ethicists have taken a leaf out of the didactic and analytical styles of law schools and business schools by choosing the case-study method to illustrate dilemmas and wrestle with ethical solutions. Our focus is food and nutrition, our issue is the ethics of advocacy and our context is a globalizing scale of considerations. Just as law schools and business-administration schools use the case method for teaching, having their students evaluate and discuss cases, ethics follows a similar procedure. To continue our journey from principles to practice and from abstract to concrete, the following sections present a series of case examples across a globalizing continuum.

One Man's Poison is Another Man's Savings Studies in upstate New York in the 1950s indicated that the amount of fluoride naturally occurring in municipal water supplies was a determinant of caries resistance and oral health.²⁴ A civic and public health movement for the fluoridation of municipal water supplies developed from these studies, which, in turn, led to a counter-movement against the measure. This case provides a parable about contrasting rights in nutritional advocacy. The proponents of fluoridation argued, correctly, that adding fluoride to the public water supply would reduce caries and improve oral health, especially for children, with long-term savings in dental care and benefits for overall well-being. The opponents felt that fluoride was a double-edged sword and argued, correctly, that only a sub-segment of the population (i.e. children) would be beneficiaries. Others in the population would not benefit and may even be placed at risk of fluorosis. Individualized dental application of fluoride and oral supplementation was the solution proposed by opponents. This case is a confrontation between the ethics of collective good and of individual free will. As a matter of historical fact, pro-fluoridation forces won the battle on most battlegrounds. However, it is notable that there was a clash of advocacy forces with most municipal decisions.

Healthy People 2010: a national blueprint for change

The federal government of the USA has an obvious mission to promote the health of its population, with a constellation of agencies ranging from agriculture to health to environmental protection to food and medicine safety. Every decade, a joint panel of federal agencies develops a Healthy People programme, which serves as a template for the actions of the federal machinery to preserve and improve the health of the nation.²⁵ Its vision statement is 'Healthy People in Healthy Communities', with the goals of (i) increasing the quality and years of healthy life; and (ii) eliminating health disparities. Sixteen out of 25 goals can be related to diet and energy utilization. The 10 presented in capital letters in Appendix I are heavily interactive with the diet, whereas the other six diet and energy utilization goals have a more minor relationship.²⁵ One of the Healthy People 2010 goals, is specifically Nutrition and Overweight.

In terms of ethics, Healthy People 2010 raises issues around the selection of targeting of emphasis, as well as those of advocacy for behaviour change, per se. Table 6 provides a breakdown of the 17 subgoals under the Nutrition and Overweight goal,²⁵ which is illustrative of what the consensus of concerns within the USA federal agencies are. The emphasis is on obesity control and chronic-disease prevention. The issues of food insecurity and undernutrition are clearly minority issues in nutrition concerns for the USA; these issues only emerge in 19-4 (growth retardation) and 19-12 to 19-14 (iron deficiency and anaemia). The homeless, the unemployed, Native Americans and others whose social deprivation may produce the conditions for deficiency states and undernutrition are basically off the radar-screen of the national health blueprint in the USA.

Since we only live once, to indulge at the high end of the hedonistic scale would seem to be the sentient (if not the logical) aspiration of all humans. However, what is the cost within societies and across regions? This is the domain of what might be called 'human' (or 'social') ethics of advocacy for behavioural change. Accepting that combating excess weight and chronic disease is the dominant emphasis of Healthy People 2010, the nature of the message and advocacy for appropriate behaviours are combined.

The new golden rule: nourish thy neighbour as thyself

To what extent is coercion and imposition, beyond mere advocacy, an issue in public health policy? This issue has historically trod the delicate interface with religious freedom. Courts have intervened to compel antibiotic therapy for followers of Christian Science and blood transfusions to Jehovah's Witnesses, at least when the health of dependent minors has been a concern. This is paternalism over autonomy at the level of specific individuals. When smallpox was a worldwide scourge, vaccination was required for attendance at school. Those with religious objections resisted their child's immunization at the peril of penalties for school nonattendance. This was an issue of the collective interest over individual will.

In the nutritional domain, the specter of a similar scenario has been brought to the fore by the research of Beck and Beck *et al.*, where, in a series of elegant studies in rodents, it has been demonstrated that inducing certain nutrient deficiencies (deficiencies of specific antioxidant nutrients) and then inoculating the animals with normally non-virulent strains of pathogens may render the microbe-host interaction lethal.^{26,27} Normally benign microorganisms can behave as if they are pathogens in malnourished hosts. However, the

Table 6 Topical breakdown of the categories within theme 19 (Nutrition and Overweight) of Healthy People 2010 (USA)

Weight status and growth
19-1 Healthy weight in adults.
19-2 Obesity in adults.
19-3 Overweight or obesity in children and adolescents.
19-4 Growth retardation in children.
Food and nutrient consumption
19-5 Fruit intake.
19-6 Vegetable intake.
19-7 Grain product intake.
19-8 Saturated fat intake.
19-9 Total fat intake.
19-10 Sodium intake.
19-11 Calcium intake.
Iron deficiency and anemia
19-12 Iron deficiency in young children and in females of childbearing age.
19-13 Anemia in low-income pregnant females.
19-14 Iron deficiency in pregnant females.
Schools, worksites and nutrition counseling
19-15 Meals and snacks at school.
19-16 Worksite promotion of nutrition education and weight management.
19-17 Nutrition counseling for medical conditions.

Note: the stated goal of theme 19 is 'promote health and reduce chronic disease associated with diet and weight'.

seminal finding from this model is that mutations of microbes have occurred in their passage through deficient hosts. The organisms cultured from these dietary-restricted animals emerge as virulent pathogens capable now of infecting and killing nutrient-replete animals. There is little doubt that a human analogue of this scenario will be found in the future. Then emerges the ethical dilemma of either allowing our neighbours to (mal)nourish themselves as they will, making them the culture-medium for the virulent transformation of organisms, or of insisting that no one in the community becomes nutrient deficient, so as to protect ourselves from the emergence of virulent strains of pathogens. Society becomes the keeper of one's brother's (and sister's) menu.

The breast-feeding imperative: a mine-field of caveats

Perhaps nowhere are ethical issues of advocacy and action more complex and intense as in the area of infant feeding. Clearly, until the age of analytical science, nutritional physiology, food technology and hygiene and refrigeration, no safe format for artificial feeding was available. Maternal milk was the only appropriate food for children up to 4 months of age. The early stages of globalization were reflected in the worldwide marketing of infant formula products, which put pressure on low-income mothers in developing countries to reduce the prevalence and duration of exclusive breast-feeding. This led to action by the UN to establish Code of Good Practice, in order to dissuade aggressive marketing of commercial milk-substitutes.²⁰

The long-standing recommendation on breast-feeding has been to provide 4–6 months of exclusive breast-feeding to infants, and to continue to provide maternal milk during a long period of transitional complementary feeding toward eventual weaning.²⁸ The lactation process in humans, as in all mammals, is an evolutionary compromise for survival of the species in which the protecting nutrition reserves of the mother are pitted against providing the nutrients for infant survival. What resulted was optimal in terms of the species, but undoubtedly did not optimize the situation for either member of the dyad at the expense of the other. Major benefits in avoiding allergic and infectious diseases are conferred by exclusive breast-feeding,^{29,30} but growth in both weight and length is lower in exclusively breast-fed infants in developing-country settings,³¹ and iron deficiency is an early consequence of exclusive nutrition with maternal milk.³²

To some extent, the issue has been a battleground between exponents of two conflicting rights. One is that of the mother to choose the form of feeding for her infant. The other, as advocated by some,^{33,34} is an inalienable right of the infant to be breast-fed. The emergence of HIV/AIDS has added new advocacy dimensions in the area of infant feeding. Mother-to-infant (vertical) transmission of the HIV virus was found to occur *in utero*, during the birth process, and from milk during lactation. Public health experts weighed two factors in the early advocacy plan, and calculated that safe artificial feeding would be impossible in low-

income settings; infants would suffer malnutrition and recurrent infection from formula-feeding in developing countries, while the economic burden on households would be enormous. Moreover, since HIV infection often stigmatizes a mother, and failing to breast-feed is a clear marker of an individual's HIV status, adding social discrimination insult to the injury of AIDS was considered to be a cruel dual penalty. Moreover, underlying this was a suspicion that the availability of accessible infant formula might weaken the promotion of exclusive breast-feeding for the HIV-negative mothers in the communities. Hence, the first approximation, before 1997, was an imposed resolution to persist with the dictum that breast is best, even for HIV-positive women.

However, the inherent paternalism of the proposition that the World Health Organization knows best, and the recognition of the discarded autonomy of mothers, changed this posture in international advocacy in 1997. A set of principles that proposed truly informed-choice advocacy for mothers were evolved.³⁵ Science has advanced in the interim, with studies in Africa that suggest: (i) the best approach to avoiding vertical transmission is either formula-feeding or strict exclusive breast-feeding, but mixed feeding is associated with high rates of conversion in infants;³⁶ and (ii) from a randomized comparison of bottle- versus breast-feeding in poor Kenyan HIV-positive mothers, maternal mortality was threefold higher in mothers selected to breast-feed.³⁷ These are eloquent, thoughtful and poignant testimonies to the dilemmas faced in the trenches of community advocacy in HIV-endemic communities.^{38–40} Perhaps nothing could be more situational, and less subject to worldwide globalized generalizations, than the national specifications for breast-feeding promotion in HIV-endemic settings.⁴¹

The integration of new information into advocacy: whither scientific and technical paradoxes? The advocacy for specific regular consumption of alcoholic beverages and fish as a dietary measures for cardio-protection provide illustrative cases through which the caveats and pitfalls for globalized advocacy can be viewed.

Drink some – but not too much – alcohol Several constituents of common alcoholic beverages, such as beer and wine, including ethanol, flavonoids and other polyphenolic compounds have been shown to be hypocholesterolemic and antithrombotic.^{42,43} Epidemiological studies also suggest that abstainers from alcohol have higher stroke and myocardial ischemia rates than those who consume moderate amounts of alcoholic beverages.^{44,45} Such is the weight and consistency of the evidence that some have made daily consumption of ethanolic drinks a firm recommendation to reduce cardiovascular risk.⁴⁶

Let us apply some common sense issues of ethical analysis to the issue of advocacy for ethanol consumption on a worldwide basis. One constraint is that, for issues of all-cause malignancies, a zero tolerance for alcoholic drinks is most consistent with results of research.⁴⁷ What prevents one chronic ailment may promote another. Moreover, the

number of units of alcoholic drinks that is maximally protective varies greatly from one society to another. It requires twice the number of drinks to prevent cardiovascular disease in the UK, as compared to the USA.^{45,48} A final caveat for the globalized advocacy of modest daily alcohol intake has to do with religious taboos or secular customs of many groups that promote an absolute prohibition against (abstinence from) ethanolic beverages.

In this situation the principle of utility applies regarding the greatest good, but this abuts with that of non-maleficence insofar as some are injured by the same dose of a substance that is beneficial to others, in the face of apparently wide inter-individual susceptibility and tolerance variance. This same principle applies in terms of the social discord of promoting drink against the cultural norms or religious mores of a society. Here we can see Kluge's principle of impossibility helping the resolution.⁸

Eat one to two servings of fish per week The situation of fish consumption is another case in point. The most recent general dietary guidelines for a healthful diet from the American Heart Association recommend: 'Eat at least two servings of fish per week'.^{49,50} This recommendation is based on the content of n-3 fatty acids, which are cardio-protective, epidemiological evidence of lower vascular risk in populations that have high levels of fish consumption, and probably a substitution effect against the noxious effects of the red meat that would be replaced by fish in the diet. In the USA, there are 280 million potential fish consumers. Adherence to this recommendation would require preparation of 29 billion fish portions per year for this market. Extended to the whole world, this would require 642 billion annual servings. Even if one were to restrict the recommendation to adults, this would only reduce the projected consumption by approximately half. Global compliance with the USA American Heart Association recommendation for regular fish consumption would risk the fish supplies of the world, and the ecological balance of aquatic and marine habitats. This is a case of conflict between beneficence and utility principles and the principle of stewardship. This recommendation is pro-people, but strongly anti-environment.

You can't win for losing

Even in terms of inherent human biology, there are situations in which there are intrinsic conflicts of simultaneously doing good and doing harm by the same intervention measure.

Table 7 provides a series of situations in which studies have demonstrated both benefits and risks from the same conduct.⁵¹⁻⁵⁶

The promise

Globalization begets global considerations in ethical advocacy and advice: epilogue

Whatever the situation of food availability, food access and dietary choice in a given locality, there is likely to be room for improvement of nutrient adequacy and consistency in terms of dietary prevention of chronic diseases. Hence, nutrition and health professionals in any region may be called upon to analyse their local situation and provide advocacy. The very fact of globalization of the food trade and of universalization of dietary information may change the risk of both nutrient deficiencies and chronic-disease risk.

The ascending curve of mutualistic responsibility

It may be argued that a world of 6 billion people, heading toward 10.5 billion, represents a new population-density disequilibrium. The concept of autonomy and free-will is compromised by the enormous size and density of populations, and an increasing fragility of habitats, for humans and other species. Ecology and the environment will impose some of the constraints on advocacy for behavioural change. The classical precepts of social ethics, for example, 'your right to swing your fist ends where my nose begins' and 'freedom of speech does not include the right to cry "Fire" in a crowded building', will be reflected in issues of diet and healthy diet. In this context, successful advocacy for behaviour change can perhaps be measured by the degree to which we are 'achieving a favourable risk-benefit ratio for whatever intervention of commission or omission is to be recommended; and respecting the individual's autonomy and free choice'.¹⁶ The autonomy and free choice of an individual can become relative when the nutritional status of one's neighbour infringes on the health of oneself.

Risk assessment and population variation in globalized recommendations

One fly in the ointment of globalized advocacy policies is the biologically robust, but policy confounding, fact of variation and heterogeneity, both within and across regional populations. In commenting on prevention in the context of one-on-one clinical practice, I have said in the past: 'Perhaps the

Table 7. Examples of paradoxes for globalized advocacy

Beta-carotene supplementation in pulmonary disease
Beta-carotene supplementation improves ventilatory function for asbestos-exposed individuals, ⁵¹ but also produces excess mortality from lung cancer in high-risk groups. ^{52,53}
Maternal supplementation to improve birthweight
Low birthweight predisposes to increased infant mortality, ⁵⁴ but increased interuterine growth increases risk of obstructed labour and maternal mortality. ⁵⁵
Interventions for osteoporosis and osteoarthritis
The risk factors for osteoporosis are protective factors against osteoarthritis and vice versa. ⁵⁶

most difficult aspect of preventive practice – relevant to ethics – is the reality of a truly heterogeneous population'.¹⁶ When the assumption is public health prevention in a globalized context, this inter-individual variation becomes an important confounding element. We now observe an increasing technical capacity and sophistication for probing individual genetic susceptibility to diseases using genomic biomarkers. This capacity presents challenges to policy options related to mass intervention (public health) strategies versus individualized (clinical) solutions. A case-study analysis of the paediatrician-geneticist, Holtzman, provides some insights, particularly his comments on average risk in a population.⁵⁷ A one in 100 000 average risk could exist because one individual in 100 000 has a standard risk. However, it could also exist if 20 in one million have a 100-fold higher risk, balanced by 20 in one million having a 100-fold lower risk of a certain disorder. The public policy strategies for such a situation are challenged the more we approach the technical capacity in which mass-screening to detect genetic predisposition advances in the post-genomic era.

Globalization as the antithesis of protective cultural differentiation

In the same ointment there is another fly, in terms of the fact that differentiation and diversity across ethnic groups and populations may represent an essential protective mechanism for *Homo sapiens*. Different groups live in distinct niches. Cultural norms codified as different food ways may be derived from social and biological evolution within such niches. The human race survives, even if one or another microcosmic system becomes vulnerable to famine or plague. The dietary danger of the future, in the face of food free trade, may be that of feast (not famine), with over-consumption of energy-dense foods in sedentary conditions being more detrimental to people evolved with active folkways. As to plagues, unsafe foods contaminated with necrotizing *Escherichia coli* or intoxicating *Salmonella* species, can now move widely to a greater extent from a single source and reach more populations.

Of ethics and entropy

The fact that a global playing field may be too big and too risky for a monolithic convergence of diet or lifestyle has its reflection in ethics as well. If indeed ethics represent a set of agreed-upon rules, a global playing field may be just too big to faithfully embrace such a concept, at least not of universal ethics. The various geographical elements of the world are diverse in their values, customs, social relations, dietary patterns and health risks. In fact, we should embrace and encourage this diversity. Perhaps the paramount tenet of a global (globalized) ethics would be to insist on an understanding and representation of local conditions and local ethical standards when transnational changes or interventions are to be encouraged.

Regarding Kluge's principle of impossibility,⁸ we can deal with some hypothetical scenarios. The per capita gross domestic product of Hong Kong for its several million

inhabitants is \$US21 700. Let us suppose that this were generalized to the 1.2 billion inhabitants of Hong Kong's parent state, the People's Republic of China. What would it require in terms of exploitation of living (fish, livestock, grains) and inanimate (petroleum, copper, iron, wood) resources to sustain the lifestyle that this could purchase? and what would be the bill to be paid for the chronic disease morbidity and disability that the predicted change in diet and adoption of a sedentary lifestyle that such generalization of wealth would generate? This seems to present an ethical choice. Do we seek, (i) the most opulent life quality that money can buy? or (ii) the healthiest life quality that the natural and physical environment can sustain? Nutritional science teaches us that it is the energy expenditure rates and macronutrient distribution of the current rural Chinese ('backward peasant') lifestyle and diet that conserves the traditionally low rates of chronic disease in that country.

The ultimate challenge of the globalization of advocacy returns to our values and our dominance of ethical principles, as we face the horns of many of the dilemmas that arise for nutritionists. What model do we use for such terms as 'development', 'progress' and 'prosperity'? Are they global or particular? Are they ecologically friendly and sustainable, or catastrophic to the environment? To the extent that there is still diversity and variety in values about these terms, the bases for not-so-globalized advocacy in diet and health will be sustained. Although communication and transportation modes have shrunk the globe, a concomitant convergence of dietary practices and preventive-health systems seems to be too risky an accession to the imperatives of the technology.

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Appendix I

Healthy People 2010 (USA)

Twenty-five concerted goals of USA federal agencies to improve the health situation of the population.

Vision: healthy people in healthy communities

Goals: Increase quality and years of healthy life and eliminate health disparities.

Focus areas

Diet-related

2. ARTHRITIS, OSTEOPOROSIS and CHRONIC BACK CONDITIONS.
 3. CANCER.
 5. DIABETES.
 10. FOOD SAFETY.
 12. HEART DISEASE and STROKE.
 14. IMMUNIZATIONS and INFECTIOUS DISEASE.
 16. MATERNAL, INFANT and CHILD HEALTH.
 19. NUTRITION and OVERWEIGHT.
 21. ORAL HEALTH.
 22. PHYSICAL ACTIVITY and FITNESS.
 4. Chronic kidney diseases.
 6. Disability and secondary conditions.
 8. Environmental health.
 13. HIV.
 18. Mental health and mental disorders.
 25. Vision and hearing.
- 'Neutrals' or 'generics'
1. Access to quality health services.
 7. Educational and community-based programs.
 9. Family planning.
 11. Health communication.
 15. Injury and violence prevention.
 17. Medical product safety.
 20. Occupational safety and health.
 23. Public health infrastructure.
 24. Respiratory diseases.