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Nutritional Sovereignty and the Commercial Determinants of Child Health: A Developmental Bioethical Analysis

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Abstract

Bioethics has extensively examined autonomy, consent, and beneficence, but less attention has been paid to the legitimacy of commercial authority over the conditions shaping children's nutritional development. This article develops *Nutritional Sovereignty* as a normative framework that brings commercial determinants research, capability theory, and children's rights into a common assessment of that authority. It argues that commercial arrangements must be evaluated in terms of their effects on present nutritional outcomes and choices, as well as their capacity to preserve the material, informational, and social conditions through which children develop, exercise, and revise meaningful nutritional capabilities.

The framework distinguishes three judgments. These are: scrutiny where credible concerns about developmental significance arise; proportionate preventive intervention where potential restrictions warrant action; and developmental nutritional injustice where a materially significant restriction is credibly attributable to an arrangement and inadequately justified. The 2025 Public Eye and International Baby Food Action Network investigation of Nestlé's infant cereals illustrates the framework's application to reported differences in product formulation and disclosure. The analysis distinguishes grounds for scrutiny from evidence of lasting developmental harm or injustice. It concludes by identifying proportionate responsibilities for corporations, regulators, health professionals, and researchers.

1. Introduction: The Developmental Problem

Children's food environments are shaped by commercial practices that include product formulation, marketing, labelling, pricing, and distribution. These practices can affect which foods are available, how their nutritional characteristics are communicated, and which options are realistically accessible to caregivers. Where affordability constrains alternatives or nutritional information is incomplete, commercial influence may become especially consequential. The ethical question extends beyond the effects of commercial practices on children's health to the justification of commercial power when it shapes the conditions of nutritional development.

The 2025 Africa-focused investigation by Public Eye and the International Baby Food Action Network (IBFAN) examined nearly 100 Cerelac infant cereals sold in 20 African countries. Public Eye reported that more than 90% of the sampled products contained added sugar, averaging close to six grams per serving; the highest reported amount was 7.5 grams per serving in a product sold in Kenya. The investigation also reported that the specific comparable products it examined in Switzerland and major European markets were sold without added sugar (Public Eye, 2025). Separately, Dumbili, Bwalya, and Osborne (2025) reported that 106 of 114 Nestlé products examined contained added sugar and that 21 of 29 commercial milk formula products marketed for children aged 1–3 years contained added sugar. These figures refer to different product categories and analyses and should not be treated as a single sample.

Existing analyses have examined Nestlé's product and marketing practices through the commercial determinants of health framework (Dumbili et al., 2025). This paper develops a complementary normative question: what makes commercial authority over the conditions of children's nutritional development legitimate?

Nutritional sovereignty provides a normative framework for evaluating the legitimacy of commercial authority over the conditions of children's nutritional development. Its contribution lies in organising insights from commercial determinants research, capability theory, and children's rights around a common question: under what conditions is the power to shape nutritional possibilities adequately justified, particularly during their development?

The framework draws on the capability approach's distinction between substantive opportunities and the resources or arrangements that may enable or constrain them (Sen, 1999; Nussbaum, 2011). Capability theory helps establish whether children and caregivers possess meaningful opportunities to pursue nutritionally adequate lives. Commercial determinants research identifies the practices and political-economic structures through which commercial actors shape those opportunities. Children's rights provide relevant protections and grounds for institutional responsibility. Nutritional sovereignty brings these perspectives together by making the legitimacy of consequential authority over nutritional conditions the organising object of assessment.

This authority is normatively significant when commercial decisions systematically structure the options available to caregivers, influence the information they can reasonably access, or shape the material conditions under which children's nutritional capabilities develop. Its legitimacy depends on the nutritional benefits a product provides and the choices it makes available, alongside the extent to which the arrangements shaping those benefits and choices are adequately justified, accountable, and open to meaningful scrutiny and contestation. Commercial influence may be legitimate when its exercise is defensible in light of children's interests, caregivers' decision-making opportunities, realistic alternatives, relevant risks, and reasonable safeguards.

The developmental dimension adds a further consideration. Children depend on caregivers for present nutritional decisions, while the capabilities through which they will later understand, exercise, and revise nutritional practices are still forming. An assessment must therefore consider both the opportunities available now and the conditions through which future nutritional agency may develop. This does not imply that children should be insulated from commercial or cultural influence, or that any change in food preference represents harm. It directs attention to whether commercial arrangements unjustifiably narrow the material, informational, or social conditions needed for meaningful nutritional capabilities to develop and remain revisable.

Consider two hypothetical products that provide comparable nutritional benefits and are similarly affordable. One is accompanied by clear information and is available alongside realistic alternatives. The other is promoted in a context where caregivers have limited access to nutritional information and few practical alternatives. An assessment focused solely on nutritional composition may not adequately

distinguish the arrangements. A nutritional-sovereignty assessment asks whether the authority exercised through the second arrangement is justified and whether its informational and material conditions materially restrict meaningful nutritional agency.

The first arrangement may warrant scrutiny without necessarily justifying preventive intervention or a finding of injustice. The second could warrant preventive action if the informational deficit and lack of realistic alternatives create a credible and sufficiently serious risk to meaningful nutritional capabilities or their developmental conditions. A finding of developmental nutritional injustice would require a further judgment that the restriction is materially significant, credibly attributable to the arrangement, and inadequately justified. The comparison illustrates how nutritional sovereignty differentiates the grounds for inquiry, preventive action, and a finding of injustice, while leaving the application of each threshold to the evidence concerning the specific arrangement.

Framework	Primary evaluative question	Contribution to the present analysis
Commercial determinants of health	How do commercial systems and practices affect health and equity?	Identifies the practices and structures through which commercial power shapes nutritional environments.
Capability approach	What substantive opportunities do people have?	Clarifies the meaningful nutritional opportunities available to children and caregivers.
Children's rights	What protections and duties are owed to children?	Establishes relevant interests, protections, and institutional responsibilities.
Nutritional sovereignty	Under what conditions is authority over nutritional possibilities legitimate?	Integrates authority, capability formation, and future revisability within a single normative assessment.

This comparison serves as an analytical aid, acknowledging that existing frameworks already address authority, development, and accountability. The proposed contribution lies in bringing these concerns together through a normative assessment of the legitimacy of commercial authority over the conditions shaping the development of nutritional capabilities. Nutritional sovereignty is intended to complement, rather than replace, the empirical, theoretical, and legal frameworks on which its assessment depends.

The framework's contribution is thus a particular normative orientation rather than a claim to replace existing approaches. It asks who exercises consequential power over nutritional possibilities, what justifies that power, how it can be scrutinised and challenged, and whether its effects compromise the conditions of children's present or future nutritional agency.

Section 2 develops nutritional sovereignty’s normative and developmental dimensions; Section 3 examines developmental adverse selection; Section 4 applies the framework to the Nestlé case; Section 5 considers regulatory and human-rights implications; Section 6 establishes thresholds for scrutiny, prevention, and injustice and derives stakeholder duties; Section 7 concludes.

2. Nutritional Sovereignty and Developmental Agency

2.1 The Normative Framework

Nutritional sovereignty concerns the legitimacy of authority over the conditions through which nutritional possibilities are constituted. It distinguishes between nutritional capability—the substantive opportunities people have to pursue nutritionally meaningful lives—and the justification of the arrangements that shape those opportunities. Nutritional adequacy and substantive capability alone cannot establish the legitimacy of the arrangements sustaining them. An arrangement may provide useful products or expand nominal choice while also exercising consequential power over information, affordability, availability, or the alternatives realistically accessible to caregivers.

Commercial authority may operate without direct command, through product formulation, pricing, marketing, labelling, distribution, or the organisation of available options. Such influence becomes normatively significant when it systematically shapes the conditions under which caregivers make feeding decisions or children develop nutritional capabilities. Since commercial influence is unavoidable in complex food environments, the central question concerns the justification of its consequential forms.

Three considerations guide this assessment. Justification asks whether the arrangement can be defended in light of children's interests, caregivers' decision-making opportunities, relevant risks, and realistic alternatives. Accountability concerns whether consequential decisions and their effects can be scrutinised and whether responsible actors can be required to explain or correct them. Contestability concerns whether caregivers, affected communities, and relevant public institutions have meaningful opportunities to question, challenge, or seek revision of the conditions created. These considerations are related: an arrangement that cannot be adequately justified may be particularly concerning when those affected lack the information or practical means to challenge it.

This account allows for legitimate commercial authority, recognises that nutritional choice need not be maximised, and distinguishes unequal outcomes from injustice. It evaluates consequential power in context, considering its effects, the interests at stake, available alternatives, the distribution of risks and benefits, and the safeguards protecting affected parties.

Applied to childhood, nutritional sovereignty has a developmental dimension. Children depend on caregivers for present nutritional decisions, while the capabilities through which they will later understand, exercise, and revise nutritional practices are still forming. The assessment must therefore consider present nutritional opportunities alongside the extent to which developmental conditions enable future agency and remain open to revision.

2.2 Developmental Nutritional Integrity

Developmental nutritional integrity concerns the conditions through which children's meaningful nutritional capabilities develop and remain open to future exercise and revision. It prescribes neither a preferred diet nor maximal dietary variety, and it does not require freedom from social or cultural

influence. Its focus is the preservation of enabling developmental conditions against unjustified restriction by commercial or institutional arrangements.

Three related interests must be distinguished. First, caregivers require present opportunities to make informed and practically feasible feeding decisions. These opportunities depend on access to understandable information, affordable options, and the material circumstances of the household. Second, children have developmental interests in adequate nutrition and in the conditions supporting their health and development. Third, as their capacities mature, children have an interest in developing meaningful opportunities to understand, exercise, and revise nutritional practices. These interests are connected but not interchangeable. A failure to disclose material nutritional information may undermine caregivers' decision-making even when no lasting developmental restriction has been demonstrated. Conversely, a developmental concern may warrant investigation before a child can meaningfully express or exercise independent choice.

The relevant conditions can be organised into three dimensions:

Dimension	Ethical question
Material conditions	Are meaningful nutritional options practically accessible, given affordability, availability, and household circumstances?
Informational conditions	Can caregivers obtain and understand the information needed to make reasonably informed feeding decisions?
Developmental conditions	Do children retain meaningful opportunities to develop, exercise, and revise nutritional practices as their capacities mature?

Revisability is a substantive opportunity, extending beyond formal permission. The relevant standard is whether children and caregivers retain meaningful opportunities to pursue nutritionally adequate practices and adapt them as circumstances, needs, and understanding evolve. A culturally coherent diet may be relatively narrow without diminishing agency, while a nominally wide product range may offer little meaningful choice under severe material constraints.

Nutritional capability, food preference, dietary diversity, nutritional practice, and future revisability are related yet distinct. A preference for a particular food does not, in itself, demonstrate compromised agency or developmental injury. Concern arises when the conditions shaping exposure and practice materially restrict meaningful nutritional opportunities, rather than merely influencing children's tastes. Developmental nutritional integrity therefore protects neither predetermined dietary outcomes nor unrestricted choice, but the conditions necessary for meaningful nutritional capabilities to develop and remain open to revision.

2.3 Developmental Time and Evidentiary Standards

Early feeding experiences can influence the development of food preferences, making childhood nutritional environments relevant to later practices (Ventura & Worobey, 2013). The World Health

Organization identifies free-sugar intake as a public-health concern because of its association with unhealthy weight gain and dental caries (WHO, 2015). These findings establish the relevance of early nutritional environments without demonstrating that a particular commercial practice produces lasting developmental restrictions.

The distinction between added sugars and free sugars is important. The product analyses discussed in this article report quantities of added sugar. The WHO guideline addresses free sugars, which include sugars added by manufacturers, cooks, or consumers, as well as sugars naturally present in honey, syrups, and fruit juices and concentrates. The terms describe distinct categories, and the amount of added sugar per serving does not directly represent a child's total daily free-sugar intake.

Three levels of evidentiary claim help discipline the analysis:

Level	Meaning	Example
Established	Supported by relevant empirical evidence	Early feeding experiences can influence the development of food preferences.
Plausible	Consistent with existing evidence but not established in the specific context	Repeated exposure to particular taste profiles may influence later preferences, depending on exposure, context, and accessible alternatives.
Hypothesized	A proposed relationship requiring further investigation	A particular commercial arrangement materially restricts the later exercise or revision of nutritional capabilities.

Evidence that early exposure influences preferences does not establish that a particular product causes lasting restriction. This judgment depends on exposure patterns, the wider feeding environment, household circumstances, realistic alternatives, and the practical significance of resulting preferences. Changes in preference do not necessarily diminish agency, and a developmental pathway alone cannot establish materially restrictive or unjustified effects.

The framework therefore supports investigation of credible developmental pathways without treating a hypothesized mechanism as an established outcome. The strength of the conclusion must remain proportionate to the evidence: evidence of a nutritional risk may justify scrutiny or preventive measures, while a finding of developmental nutritional injustice requires evidence of the materially significant and inadequately justified restriction specified in the framework.

2.4 The Canonical Definition

Developmental nutritional injustice occurs when a commercial or institutional arrangement unjustifiably restricts children's meaningful nutritional capabilities or materially compromises the conditions through which those capabilities develop and remain open to future exercise and revision.

3. Commercial Determinants, EAST, and Developmental Constraint

3.1 The Commercial Determinants Framework

The World Health Organization defines commercial determinants of health as "private sector activities impacting public health, either positively or negatively, and the enabling political economic systems and norms" (WHO, 2021). Gilmore and colleagues define them as "the systems, practices, and pathways through which commercial actors drive health and equity" (Gilmore et al., 2023). The framework identifies key commercial practices—marketing, political influence, scientific practices, supply chain arrangements, financial practices, and reputational management—through which commercial actors shape population health (Kickbusch et al., 2016).

As Modi and Hanson observe, considering these effects on infants and children is particularly urgent because "infants and children are particularly vulnerable" and "health in early life establishes trajectories for adult and population health" (Modi & Hanson, 2024, p. 1).

3.2 Ecological Adverse Selection and Developmental Nutritional Agency

Ecological Adverse Selection Theory (EAST) provides a structural lens for examining how commercial food environments may shape children's developing nutritional capabilities (Chingarande, 2026b). In its original formulation, EAST examines how systems organised around implicit assumptions about capacities favour some people or patterns while disadvantaging others. Applying this account to nutrition requires identifying the relevant selection mechanism rather than assuming that findings from one institutional setting transfer unchanged to another.

In commercial food environments, selection operates through the pathways of nutritional exposure and practice that arrangements make easier or harder to follow. Product formulation, pricing, promotion, labelling, availability, and distribution can systematically favour some pathways over realistic alternatives. Such asymmetries may reflect commercial priorities, regulatory conditions, household resources, or their interaction. Their existence alone, however, establishes neither developmental harm nor injustice. Commercial success, unequal access, and differences in food preference are insufficient evidence of compromised agency.

Developmental adverse selection describes a structural mechanism through which commercial or institutional arrangements systematically favour particular pathways of nutritional exposure and practice over contextually realistic alternatives, potentially constraining the development or exercise of meaningful nutritional capabilities. Its significance depends on three conditions.

First, the arrangement must systematically favour one pathway over realistic alternatives. Assessment must account for affordability, availability, household circumstances, cultural practices, and the information accessible to caregivers. An alternative that a household cannot reasonably obtain or use provides no meaningful basis for comparison.

Second, a credible mechanism must connect this asymmetry to a developmentally relevant process, such as repeated exposure, consumption patterns, nutritional learning, or the capacity to establish and revise feeding practices. Product formulation or marketing differences alone cannot establish this connection.

Consider two families with similar feeding needs. For one, sweetened infant cereals are affordable, widely available, and prominently promoted, while information about added-sugar content is difficult to access and less-sweet alternatives are expensive or scarce. For the other, caregivers can readily compare nutritional information and obtain affordable alternatives. The first environment systematically favours a particular pathway of nutritional exposure. Repeated exposure might influence feeding practices or preferences, but establishing this effect requires empirical investigation. The comparison illustrates a possible mechanism, not proof of lasting preference or developmental harm.

Third, the pathway must plausibly produce a materially significant restriction of nutritional capabilities or compromise the conditions for their future exercise and revision. Differences in exposure or preference are insufficient without evidence of their developmental significance. Assessment must establish how the structural asymmetry affects actual feeding practices, how those effects relate to relevant developmental processes, and whether the resulting restriction is material. This requirement distinguishes influence from injury: preferences may change, commercial influences may be benign, and commercially favoured practices may leave agency intact.

The mechanism can therefore be assessed through four elements:

Element	Analytical focus
Object of selection	Pathways of nutritional exposure, learning, and practice
Structural mechanism	Arrangements that systematically favour some pathways over realistic alternatives
Relevant baseline	Feasible alternatives within the material, cultural, and informational circumstances of affected households
Developmental consequence	A materially significant restriction of nutritional capabilities or of the conditions for their future exercise and revision

Evidence that commercial arrangements do not systematically alter exposure or access, that differences in exposure do not affect relevant developmental processes, or that resulting effects do not materially restrict nutritional capabilities would weaken the proposed explanation. Substantial variation across household contexts, evidence of reversibility, or access to meaningful alternatives might instead require a more context-specific account.

The Nestlé case examined below raises questions about formulation and disclosure differences that warrant scrutiny. These differences alone, however, do not establish developmental adverse selection. That conclusion would require evidence of systematic asymmetry relative to realistic alternatives, a

credible developmental pathway, and a materially significant effect on nutritional capabilities. EAST therefore functions here as a proposed explanatory mechanism within nutritional sovereignty, helping to identify what requires investigation rather than predetermining the ethical verdict.

4. The Nestlé Case: An Illustrative Normative Application

4.1 Documented Practices

Public Eye's 2025 investigation found that more than 90% of the nearly 100 Cerelac infant cereals examined across 20 African countries contained added sugar, averaging close to six grams per serving and reaching 7.5 grams in one product sold in Kenya. The investigation contrasted these findings with comparable products examined in Switzerland and major European markets, where the products were sold without added sugar (Public Eye, 2025). In a separate analysis, Dumbili, Bwalya, and Osborne (2025) found added sugar in 106 of 114 Nestlé products examined and in 21 of 29 commercial milk formula products marketed for children aged 1–3 years. They also reported that labels examined in Ethiopia, Nigeria, and Senegal highlighted vitamins, minerals, and other nutrients without disclosing added-sugar content.

These findings raise questions about differences in product formulation and nutritional disclosure across markets. Such differences matter because product composition and labelling shape the information available to caregivers when comparing feeding options. Their significance, however, depends on the products and markets examined, the applicable regulatory requirements, and the alternatives realistically available to households. The findings cannot establish that all products sold in African and European markets differ in the same way, or that every reported difference is unjustified. Product-composition and labelling evidence alone also cannot demonstrate lasting developmental harm, corporate intent, or a breach of binding law in every relevant jurisdiction.

Nestlé's reported position on compliance with applicable requirements and its efforts to expand products without added sugar form part of this context. Legal compliance is relevant to the assessment, although it does not by itself establish the ethical adequacy of a commercial practice. Equally, differences in formulation do not automatically establish wrongdoing. The central question for nutritional sovereignty is whether consequential decisions about product composition and disclosure are adequately justified in light of children's interests, caregivers' decision-making opportunities, relevant nutritional risks, and the availability of realistic alternatives.

4.2 Applying the Framework

The case raises three questions under the nutritional-sovereignty framework.

Commercial authority and informational conditions. The reported formulation differences and labelling practices are relevant because commercial actors influence both the products offered and the information through which caregivers assess them. Where added-sugar content is not clearly disclosed,

caregivers may have less information with which to compare products. Whether this asymmetry materially limits decision-making depends on the wider context, including the information otherwise available, affordability, accessibility, household circumstances, and realistic alternatives. The initial normative question is whether caregivers retain a meaningful opportunity to make informed and practically feasible feeding decisions.

Developmental significance and evidentiary limits. Early feeding environments are relevant to the development of food preferences, and the WHO identifies free-sugar intake as a public-health concern. These considerations provide grounds to investigate the nutritional significance of the reported practices. They do not establish that the products examined cause lasting restrictions in nutritional capabilities. That conclusion would require evidence linking the relevant commercial arrangement to a developmentally significant pathway and showing that its effects materially compromise nutritional opportunities or the conditions for their future exercise and revision.

Legitimacy of market differences. Reported differences between products sold in African and European markets raise a question about the justification of materially different formulations and disclosure practices. A nutritional-sovereignty assessment asks whether the differences are supported by transparent, publicly defensible reasons in light of relevant risks, affected interests, realistic alternatives, and reasonable safeguards. Differences between markets are grounds for inquiry, not proof of discriminatory intent or injustice. The assessment must consider the specific products, the applicable standards, the information available to caregivers, and the practical conditions in which those products are used.

4.3 What the Case Establishes—and What It Does Not

The reported findings provide grounds for scrutiny of formulation differences, added-sugar content, disclosure practices, and the information available to caregivers. These concerns are sufficient to justify closer assessment under the proposed framework because they raise credible questions about the conditions under which feeding decisions are made.

Whether the evidence also justifies preventive intervention depends on the seriousness and credibility of the potential risk, the consequences of delay, the availability of reasonable safeguards, and the proportionality of the proposed response. Preventive action need not await proof of lasting developmental injury, but it should be supported by a credible pathway and calibrated to the evidence.

A finding of developmental nutritional injustice requires a stronger conclusion: the arrangement must unjustifiably restrict children's meaningful nutritional capabilities or materially compromise the conditions through which those capabilities develop and remain open to future exercise and revision. The evidence must support the alleged restriction, its attribution to the relevant commercial or institutional arrangement, and the conclusion that the arrangement is inadequately justified in light of affected interests, realistic alternatives, relevant risks, and reasonable safeguards.

The sources discussed here provide insufficient evidence, on their own, to establish lasting developmental harm in the populations concerned, an intention to exploit developmental vulnerability, or every element of developmental adverse selection. They also fall short of independently demonstrating violations of binding legal obligations across all relevant jurisdictions.

The case therefore illustrates the function of nutritional sovereignty without independently validating the entire framework. It identifies questions warranting scrutiny, specifies the evidence needed to assess developmental significance, and distinguishes a reason for investigation from a justified preventive response or a finding of injustice. Its contribution is to demonstrate how the framework structures normative judgment under conditions of incomplete evidence, not to predetermine the verdict on every practice under examination.

5. Regulatory Context and the Normative Contribution

5.1 The WHO Code and Complementary Foods

The International Code of Marketing of Breast-milk Substitutes, adopted in 1981, represents the most comprehensive international normative instrument in this area (WHO, 1981). The Code is an international normative instrument; the scope and legal enforceability of its provisions depend on subsequent World Health Assembly resolutions and national implementing measures. The Code primarily addresses the marketing of breast-milk substitutes. The present case study centres on complementary infant cereals and products for young children. The relevant regulatory provisions cannot simply be transferred from breast-milk substitutes to all infant and young-child foods.

What follows for the products under consideration: Some concerns—such as the promotion of breast-milk substitutes—fall within existing regulatory instruments. Other concerns—such as the formulation and labelling of complementary foods—depend on national food-labelling, marketing, and consumer-protection rules. Some concerns—such as whether material differences in formulation across markets can be publicly justified—remain ethical questions not fully resolved by current requirements.

The 2026 WHO/UNICEF status report assesses national implementation of the Code and subsequent World Health Assembly resolutions through legal measures across 194 countries (WHO & UNICEF, 2026). The WHO's 2023 guidance on regulatory measures aimed at restricting digital marketing of breast-milk substitutes addresses both products within the Code's scope and certain foods for infants and young children that are not breast-milk substitutes (WHO, 2023).

5.2 Human Rights Frameworks

The UN Convention on the Rights of the Child affirms multiple rights relevant to nutritional sovereignty: the right to life and development (Article 6), the right to health including access to nutritious food (Article 24), the right to access information and protection from harmful information (Article 17), and the principle that the best interests of the child shall be a primary consideration (Article 3). Scholars have

argued that a standalone right to adequate nutrition exists in international law as the sum of these and other rights (Fanzo et al., 2019).

These provisions provide a strong foundation for the framework, while leaving the legal status of a distinct right to nutritional sovereignty unresolved. The existence of several relevant rights does not, by itself, establish a standalone right to adequate nutrition. Nutritional sovereignty therefore remains a proposed normative framework whose relationship to existing rights requires explicit justification.

5.3 Regulatory Implications

The proposed contribution lies in bringing children's developmental interests into a unified assessment of the legitimacy of commercial authority over nutritional environments. Nutritional sovereignty evaluates the justification of that authority, caregivers' opportunities to make informed decisions, and the extent to which childhood nutritional development remains open to future revision.

This analysis identifies a potential gap in how existing frameworks integrate developmental interests with the legitimacy of commercial authority. It makes no general claim about deficiencies in existing law. The paper's principal contribution is normative and therefore rests on articulating this integrated framework, rather than demonstrating comprehensive regulatory failure.

6. Developmental Nutritional Justice and Institutional Duties

6.1 Three Judgments, Not a Single Threshold

Nutritional sovereignty distinguishes the threshold for scrutiny from the threshold for preventive intervention and the threshold for a finding of developmental nutritional injustice. These judgments serve different purposes and therefore require different levels and kinds of justification.

Judgment	Relevant considerations	Appropriate conclusion
Scrutiny	Consequential authority over an important condition of nutritional life and a credible reason to suspect developmental significance	The practice warrants investigation or closer assessment.
Preventive intervention	Credibility and seriousness of the potential restriction, consequences of delay, available safeguards, and proportionality	Protective action may be justified before injury is established.
Developmental nutritional injustice	A materially significant restriction, credible attribution to the relevant arrangement, and inadequate justification	A finding of injustice is warranted to the extent supported by the evidence.

A practice warrants scrutiny when it materially shapes an important condition of nutritional life and there is credible reason to suspect that it may affect the development or practical exercise of meaningful

nutritional capabilities. Scrutiny is not a presumption of harm or wrongdoing. It identifies a question that warrants further assessment.

Proportionate preventive action may be justified where the potential restriction is sufficiently serious, the developmental pathway is credible, and reasonable safeguards are available, even if the causal pathway remains incompletely established. The appropriate response should reflect the strength of the evidence, the seriousness and likelihood of the potential consequences, the consequences of delay, and the feasibility and costs of intervention. The framework does not require regulators or institutions to wait for established injury, but neither does it treat every plausible concern as sufficient grounds for restrictive action.

A finding of developmental nutritional injustice requires a stronger judgment. The arrangement must unjustifiably restrict children's meaningful nutritional capabilities or materially compromise the conditions through which those capabilities develop and remain open to future exercise and revision. The alleged restriction must be materially significant and credibly attributable to the relevant arrangement. Its justification must then be assessed in light of children's interests, the distribution of benefits and burdens, realistic alternatives, relevant risks, and reasonable safeguards.

This finding does not invariably require proof of lasting developmental injury. An unjustified material compromise of the conditions through which meaningful nutritional capabilities develop may itself be significant. However, the evidence must support the particular restriction alleged; a general concern about commercial influence cannot substitute for that assessment.

The framework also distinguishes an authority-related concern from developmental nutritional injustice. A practice may raise concerns about transparency, accountability, or contestability even when a material developmental restriction has not been established. Conversely, a developmental restriction may arise through a wider institutional arrangement involving multiple actors, requiring careful attribution rather than automatic assignment of responsibility to one company.

Finally, remediability informs the nature and extent of corrective duties; it does not determine whether the original restriction was unjust. The three judgments thus allow ethical and institutional responses to be proportionate to the evidence while preserving a meaningful distinction between grounds for inquiry, grounds for prevention, and grounds for a finding of injustice.

Worked illustrative example: Sweetened infant cereal in a constrained food environment

Consider a hypothetical market in which a manufacturer sells a sweetened infant cereal that is affordable, widely distributed, and prominently promoted. Its packaging emphasises added vitamins and minerals, while information about added-sugar content is difficult for caregivers to locate. Less-sweet alternatives exist, yet they are substantially more expensive or unavailable in many local shops. Caregivers facing these constraints repeatedly purchase the readily accessible product.

Suppose preliminary evidence establishes the differences in price, availability, and disclosure. Research also suggests that repeated early feeding experiences can influence food preferences, although evidence linking this particular product and market arrangement to lasting changes in children's nutritional capabilities remains limited.

Applying the three judgments

Judgment 1

Scrutiny

The arrangement warrants investigation because product availability, affordability, promotion, and disclosure shape caregivers' practical feeding options. Evidence that nutritional information is difficult to access raises a further concern about informed decision-making. Research should establish how frequently the product is used, what alternatives households can realistically obtain, and whether the arrangement affects feeding practices.

Conclusion: Scrutiny is justified. This judgment establishes a reason to investigate, rather than proof of harm or wrongdoing.

Judgment 2

Preventive intervention

Suppose further evidence indicates that the product contains a substantial quantity of added sugar, that exposure is frequent, and that caregivers have limited access to meaningful alternatives. Clearer labelling, restrictions on misleading promotional claims, or improved access to affordable alternatives may then be justified, depending on the evidence, applicable law, and proportionality of each measure. Such action need not await proof of lasting developmental injury.

Conclusion: Proportionate preventive action may be justified if the potential risk is sufficiently serious, the developmental pathway credible, and the proposed safeguards reasonable.

Judgment 3

Developmental nutritional injustice

Suppose subsequent evidence establishes that the commercial arrangement systematically restricts caregivers' meaningful nutritional options, contributes to a sustained pattern of exposure, and materially compromises children's opportunities to develop or revise nutritionally adequate practices. Suppose further that the restriction is attributable to the arrangement and cannot be adequately justified in light of children's interests, realistic alternatives, relevant risks, and reasonable safeguards.

Conclusion: A finding of developmental nutritional injustice may be warranted, to the extent supported by the evidence.

The third judgment would remain unwarranted if the evidence established only that the product was widely sold, contained added sugar, or influenced children's preferences. Those facts may justify scrutiny and, depending on the risk, preventive measures. They do not independently establish a materially significant restriction of nutritional capabilities.

What the example demonstrates

The three judgments differ in their evidentiary requirements and normative purposes. Scrutiny responds to a credible concern; prevention addresses a sufficiently serious potential risk; and a finding of injustice requires a materially significant, attributable, and inadequately justified restriction. The progression is therefore neither automatic nor inevitable: further evidence may strengthen the case, weaken it, or show that the relevant concern lies primarily in caregivers' present decision-making opportunities rather than children's developmental capabilities.

The example also clarifies that nutritional sovereignty evaluates two connected questions: whether caregivers can make meaningful, informed feeding decisions now, and whether the conditions shaping childhood nutrition preserve children's future nutritional capabilities. A failure in the first area can warrant ethical or regulatory attention even when developmental restriction remains unproven.

Finally, the example is illustrative, not an empirical finding about any named manufacturer. Applied to the Nestlé case, the same reasoning requires the documented formulation and disclosure differences to be distinguished from evidence of developmental effects and from the further normative judgment that any established restriction is unjustified.

The canonical definition

Developmental nutritional injustice occurs when a commercial or institutional arrangement unjustifiably restricts children's meaningful nutritional capabilities or materially compromises the conditions through which those capabilities develop and remain open to future exercise and revision.

6.2 Obligations for Corporations

These are proposed ethical duties derived from the nutritional sovereignty framework. Their legal status depends on applicable national law and relevant international instruments as implemented.

Corporations have preventive, procedural, and corrective duties proportionate to their influence, the risk their practices create, and the evidence of their contribution to developmental constraint.

Preventive duties: Assess and mitigate credible, material risks of developmental adverse selection. The required assessment should be proportionate to the severity, likelihood, and reversibility of the potential

harm.

Procedural duties: Provide meaningful information, contestation, and review proportionate to the exercise of power. This includes clear disclosure of added sugar content, honest labeling that does not obscure material information, and accessible mechanisms for caregivers and civil society to raise concerns.

Corrective duties: Address established, unjustified restrictions. The relevant principle is equivalent protection against unjustified nutritional risks across markets, not identical formulations. Equivalent protection requires comparable protection against unjustified nutritional risks; sufficiently clear disclosure of material nutritional information; transparent and publicly defensible reasons for material differences in formulation; and appropriate safeguards for children and caregivers in different regulatory environments.

6.3 Obligations for Regulators

These are proposed policy recommendations identifying measures that governments or institutions should consider adopting.

Three regulatory tasks must be distinguished:

Task	What it involves
Code implementation	Enforce the Code and subsequent relevant resolutions for products and practices within their scope.
Complementary-food regulation	Strengthen applicable nutrition, labelling, marketing, and consumer-protection rules for products outside that scope.
Developmental assessment	Consider whether existing assessment mechanisms adequately capture material informational and developmental risks.

Develop developmental nutritional impact assessments: The assessment should integrate developmental considerations into existing regulatory processes. The depth of assessment should be proportionate to the developmental significance of the practice, the severity and likelihood of the potential effects, the vulnerability of those affected, and the availability of reasonable safeguards. An assessment would examine: the practice and the population affected; the nutritional information and realistic alternatives available to caregivers; the plausible developmental pathway and the quality of evidence supporting it; the distribution of risks and benefits; and feasible safeguards or corrective measures. Potential triggers include: marketing or product practices directed at particularly young children; material gaps or discrepancies in information about nutritional composition; credible evidence that a practice exploits developmental vulnerability; substantial differences in protection across markets that lack transparent justification; and credible evidence that a practice could materially restrict meaningful nutritional capabilities. These are proposed triggers for further assessment, not automatic

findings of wrongdoing. The assessment is proposed as a mechanism for integrating developmental considerations, not as a fully validated instrument.

Require adequate and comparable disclosure of material nutritional information across markets

Regulators should ensure that caregivers can identify nutritionally significant ingredients and assess products on a meaningful basis. Material differences in formulation and disclosure should be supported by transparent, publicly defensible reasons and assessed against applicable nutritional standards and the availability of reasonable alternatives.

Prevent conflicts of interest and undue commercial influence

The tobacco-control precedent is relevant, but a blanket extension to all food-industry engagement is not self-justifying. The more defensible general position is to prevent conflicts of interest and undue commercial influence, with stronger restrictions where the relevant legal and policy framework warrants them (Gilmore et al., 2023).

6.4 Obligations for Health Professionals

These are proposed professional responsibilities, to be exercised within the scope of clinical competence and applicable institutional policies.

Health professionals and clinical institutions should adopt evidence-based procurement and counselling policies that minimise inappropriate promotion of foods for infants and young children, prioritise nutritionally appropriate options, and address added sugars in accordance with relevant guidance. Such policies should not stigmatise caregivers or imply that commercial products are inherently unethical. Safe, appropriate breast-milk substitutes can be essential where breastfeeding is unavailable, contraindicated, or insufficient.

Health professionals should document and report suspected violations of the WHO Code and national regulations through applicable reporting channels, where appropriate and within their competence and institutional remit.

6.5 Obligations for Researchers

These are proposed research priorities identifying evidence needed to assess the framework's proposed mechanisms.

The research community should:

- Conduct longitudinal and mechanism-focused studies examining how early feeding environments, commercial practices, household resources, and access to alternatives interact to shape nutritional learning and later dietary practices.

- Develop and validate measures of developmental adverse selection, adapting EAST's constructs for nutritional contexts.
- Investigate corporate practices using the commercial determinants framework.
- Engage in community-based participatory research that centers affected populations.

7. Conclusion

Nutritional sovereignty provides a developmental bioethical framework for evaluating the legitimacy of commercial authority over the conditions shaping children's nutritional capabilities. Its contribution lies in organising questions of substantive opportunity, commercial power, accountability, and future agency around a common normative concern: the justification of the arrangements through which nutritional possibilities are constituted.

This perspective extends bioethical attention to the material, informational, and social conditions through which children develop, exercise, and revise nutritional capabilities. It recognises that commercial influence is an ordinary feature of food environments, while requiring closer scrutiny when that influence systematically constrains caregivers' meaningful decision-making or compromises children's developmental opportunities. The relevant concern is neither conformity to a predetermined dietary ideal nor freedom from influence, but the preservation of conditions that enable meaningful nutritional capabilities to develop and remain open to revision.

Nutritional sovereignty therefore directs ethical scrutiny towards the legitimacy of the power shaping nutritional life. Consequential commercial authority must be adequately justified, accountable, and open to contestation, with due regard for children's interests, caregivers' decision-making opportunities, realistic alternatives, and relevant risks. Its ultimate normative demand is that the commercial organisation of nutritional environments remain compatible with children's developing capacities to exercise and revise meaningful nutritional practices.

AI Use Statement

ChatGPT was used during the development of this manuscript for language editing, structural organisation, and iterative revision of the argument. The author reviewed, revised, and approved all substantive content. The author remains fully responsible for the manuscript's arguments, evidence, and conclusions.

Declarations

Author Contribution

GRC wrote the main manuscript and the revisions.

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