Function and Dysfunction in Scientific Practice: An Introduction

M.C. Amoretti*, R.R. Cuciniello**, C. Davini***

Part One of Mefisto's Focus *Function and Dysfunction: Revising, Expanding, and Questioning Two Core Concepts in the Philosophy of the Life Sciences* demonstrated that the concepts of function and dysfunction occupy a peculiarly paradoxical position in the philosophy of the life sciences: simultaneously foundational and philosophically unstable, they structure biological and medical explanation while eluding theoretical consensus. The contributions gathered there showed that this instability is not merely a residual problem for philosophical housekeeping but a productive condition, one that drives theoretical innovation, forces renewed engagement with evolutionary and organizational biology, and reveals the deep entanglement of biological normativity with human values. By systematically testing the resilience of etiological, causal-role, and organizational accounts of function against cases that strain their underlying assumptions, those papers charted the conceptual landscape with precision and critical force.

Part Two turns now from the map to the territory, as it were. If Part One asked how the concepts of function and dysfunction should be theoretically reconstructed, the papers collected here ask what happens when those concepts – however refined – are brought into contact with the material, institutional, and epistemic conditions of scientific and clinical practice. This is not a merely applied or secondary inquiry; it is, in a significant sense, the harder test. A philosophical account of dysfunction that survives logical scrutiny may nonetheless fail when it encounters the actual material conditions of clinical diagnosis, the administrative logics of healthcare provision, the irreducibly developmental and relational character of neurodevelopmental conditions, or the market forces that increasingly shape how pathology itself is defined. The contributions in this part take up that challenge, examining

* cristina.amoretti@unige.it
University of Genoa, Italy
** riccardo.cuciniello01@universitadipavia.it
University of Genoa, Italy
*** claudio.davini@unipi.it
University of Pisa, Italy

how revised conceptions of function and dysfunction shape – and are in turn shaped by – specific practical domains of medicine, psychiatry, and the pharmaceutical sciences.

Several convergent themes give this collection its coherence. The first is the inadequacy, in clinical and scientific contexts, of purely *biologicist* conceptions of dysfunction – whether of the biostatistical variety that anchors dysfunction in species-typical statistical norms or of the selected-effects variety that locates it in the failure of evolutionarily designed mechanisms. While Part One identified the philosophical limitations of such accounts from within, the papers gathered here demonstrate their practical consequences: when dysfunction is defined exclusively in terms of biological deviation from population-level norms, it systematically fails to register forms of impairment that are real, disabling, and clinically significant for the individual – while simultaneously risking the over-inclusion of conditions whose pathological status remains logically contested.

The second theme concerns the institutional mediation of dysfunction. Diagnoses are not merely intellectual judgments about biological states; they are acts embedded in – and constrained by – institutional structures, administrative protocols, and epistemic norms that determine what kinds of dysfunction can be recognized, communicated, and acted upon. Each contribution in this part reveals, in different ways, that the function-dysfunction distinction is always already shaped by the institutional contexts in which it is operationalized, and that any philosophical account which abstracts away from those contexts purchases its clarity at an unacceptable cost in realism.

A third, closely related theme concerns the epistemic dimensions of diagnostic practice itself, showing that medical institutions function as epistemic agents in their own right – privileging certain kinds of evidence, stabilizing particular symptom profiles, and marginalizing forms of dysfunction that do not conform to dominant categories. This perspective extends and deepens the normative concerns raised in Part One, revealing that the stakes of the function-dysfunction debate include not only questions of biological reality or social value but questions of epistemic justice and the recognition of lived experience.

Finally, and perhaps most strikingly, a fourth theme emerges from the collection as a whole: the constitutive feedback between therapeutic availability and disease definition. The papers gathered here converge, from different angles, on the insight that what counts as a dysfunction is not determined independently of, and prior to, what can be done about it. The availability of an effective intervention reshapes how the underlying condition is classified and understood – just as, conversely, the diagnostic label shapes which interventions become accessible. This bidirectional relationship between cure and

classification represents a genuinely novel contribution to debates in the philosophy of medicine, one that no purely conceptual theory of dysfunction, developed in abstraction from clinical and commercial practice, could anticipate.

Together, these contributions suggest that a philosophically adequate account of dysfunction cannot stop at the level of biological mechanism or evolutionary history. It must attend to the practical, institutional, epistemic, and economic conditions under which dysfunction is identified, communicated, and addressed. In doing so, the papers collected here open a line of inquiry that is both scientifically grounded and normatively consequential – showing that how we theorize dysfunction has direct implications for who receives care, whose suffering is recognized, how clinical institutions exercise their epistemic authority, and who profits from the process. The four contributions that follow exemplify, from complementary perspectives and across distinct domains of medicine and psychiatry, the depth and urgency of these implications.

The paper by Alessandro Demichelis, *Ozempic: the Medicalization and Pharmaceuticalization of obesity*, whose title directly references the pharmacological revolution of our moment, examines the rise of semaglutide – the GLP-1 receptor agonist marketed under names such as Ozempic and Wegovy – as both a clinical and a socio-philosophical phenomenon. Tracing the decades-long history of pharmaceutical research into obesity, from dinitrophenol and amphetamines to the discovery of Exendin-4 in Gila monster venom and the eventual development of semaglutide, the paper situates the current "GLP-1 moment" within broader theoretical frameworks of pathologization, medicalization, and finally pharmaceuticalization. In doing so, it engages directly with the contested question of whether obesity is a disease, examining the logical tensions in the WHO definition, the well-documented limitations of the Body Mass Index as a diagnostic tool, and the unresolved contradiction between classifying obesity simultaneously as a disease and as a risk factor for other diseases. The paper's most distinctive philosophical contribution, however, lies in its analysis of the feedback between therapeutic availability and disease definition: it argues that the approval of semaglutide for weight management has itself become a driver of the reconceptualization of obesity as a pathological condition, inverting the standard assumption that disease classification precedes and grounds therapeutic intervention. Drawing on Conrad's classical account of medicalization, Clarke's concept of biomedicalization, and Sholl's more recent distinction between pathologization and medicalization proper, the paper also examines the *memetic* dimension of semaglutide's social diffusion – e.g., through celebrity endorsements, social media, and the peculiarities of the U.S. pharmaceutical market – as evidence of a new phase of medicalization in which consumer demand, rather than top-down medical or commercial authority, increasingly sets the definitional agenda.

The contribution by Simone Cuva, Valentina Fantasia and Giovanni Valeri, *Autism Spectrum Disorders: Between the Recognition of Risk, the Acknowledgment of Neurodivergence, and the Validation of Subjective Experience*, turns to ASD as a lens through which to examine the practical and scientific limitations of static, categorical conceptions of dysfunction. Surveying the profound conceptual transformations that have reshaped the field since Kanner's original description – i.e., from rare condition to prevalent public health concern, from discrete diagnosis to dimensional spectrum, from childhood onset to lifelong developmental profile – the authors argue that prevailing diagnostic frameworks remain inadequate to the dynamic, relational, and contextually embedded nature of autistic development. Drawing on developmental psychology, clinical psychiatry, and the enactive approach to cognition, they make a case for reconceptualizing autism not as a fixed condition that an individual has but as an emergent developmental pattern shaped by ongoing interactions between a child's neurobiological profile and their social, sensory, and relational environment. The paper engages critically with the "at-risk" category in contemporary ASD research, arguing that while early identification has genuine clinical value, it carries significant epistemic and clinical risks when it presupposes diagnostic closure in the face of fluid and heterogeneous developmental trajectories, and draws an illuminating parallel with the concept of "at-risk mental states" in the psychosis literature. The authors also interrogate the productive tension between the neurodiversity paradigm, which reframes neurological difference as a form of human variation rather than a deficit, and clinical frameworks that emphasize early intervention and the amelioration of impairment. In bringing together phenomenological, enactive, and developmental perspectives, the paper proposes three guiding principles for a more integrated model: one that treats diagnosis as a fluid interpretive construct shifting in meaning across developmental stages; that replaces categorical classification with dimensional models of neurodevelopmental variation; and that places the relational and transactional dimensions of development – above all, the role of caregiver attunement and environmental scaffolding – at the center of both diagnostic reasoning and therapeutic planning.

The contribution by Pandey Pravajya, *Rethinking Dysfunction: Institutional Epistemology and the Marginalization of ADHD in Women*, pursues the most philosophically sustained engagement with the problem of institutionally mediated dysfunction in the collection. Taking as its central case the systematic underdiagnosis and misdiagnosis of ADHD in women, the paper argues that dysfunction in psychiatric contexts cannot be adequately theorized as a purely biological deviation from norms – whether in the Boorsian or Wakefieldian traditions – because both accounts leave unexamined the institutional and epistemic conditions under which claims of dysfunction are

recognized and operationalized in practice. Drawing on philosophy of medicine, social epistemology, and the literature on epistemic injustice, the paper develops a framework in which diagnostic systems are understood as epistemic agents: they privilege specific symptom profiles, stabilize particular evidentiary standards, and systematically marginalize forms of dysfunction that do not conform to dominant clinical models. In the case of ADHD, diagnostic criteria and clinical heuristics have historically been calibrated to symptom presentations more characteristic of boys and men – i.e., overt hyperactivity and behavioral disruption – while the internalized, cognitively diffuse, and emotionally dysregulatory profiles more common in women are rendered epistemically marginal. The paper traces how this structural mismatch is compounded over time through mechanisms of masking, testimonial injustice, and Hackingian classificatory looping effects, generating cumulative forms of epistemic disadvantage that are self-reinforcing and resistant to correction even as clinical awareness grows. Against this background, the paper argues for a reconceptualization of dysfunction as a relational, context-sensitive, and institutionally mediated category, and calls for epistemic humility – understood not as individual clinical virtue, but as an institutional orientation toward the revision of diagnostic norms – as a necessary condition for restoring trust and improving recognition in psychiatric practice. In doing so, it offers one of the most rigorous applications of the epistemic injustice framework to questions in the philosophy of medicine to appear in recent literature.

Finally, Mark Fedyk's paper, *The Wrong Diagnosis Can Cure You*, challenges a foundational assumption of standard philosophical accounts of diagnosis: that diagnostic accuracy is the primary determinant of clinical efficacy. Fedyk's central thesis is that diagnoses function first and foremost as tools for managing what he calls "jurisdictional risk" – i.e., the risk that a patient's pathophysiology will become invisible or administratively illegible to the institutions through which care is provisioned. Drawing on his own clinical experience and a series of richly analyzed cases, from contested cardiology referrals to the strategically renegotiated admission of an elderly patient presenting with hyponatremia, Fedyk argues that healthcare systems are not unified epistemic or administrative entities but federations of semi-autonomous clinical jurisdictions, each with its own internal culture, norms, and conditions of entry. A diagnosis, on this account, is not primarily a description of disease but an act of administrative routing: it must reconcile the patient's biological and social individuality with what Fedyk calls the "political epistemology" and "political economy" of the relevant healthcare institutions. From this perspective, the truth or accuracy of a diagnosis is of secondary importance compared to its interoperability – i.e., its capacity to be recognized by receiving jurisdictions as a valid claim on their resources. As the paper's title announces, a false

or vague diagnosis can be curative precisely when it succeeds in routing the patient through institutional structures that would otherwise remain closed to them. This argument is not a counsel of deception, but a contribution to a more realistic philosophy of medicine – namely, one that takes seriously the institutional infrastructure through which all curative action must pass, and that reveals the concept of dysfunction to be inseparable from the political and administrative logics that govern its recognition.