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Function and Gratitude in Theology and Biology

Biological, psychological, and social accounts of gratitude seem to be in tension with theological or philosophical construals. Is there a conflict between something being *for* an instrumental end, such as evolutionary advantage, and *for* its own sake? This article explores the way in which certain debates in theology offer a model for answering a definite 'No' to zero-sum models of a relation between these two senses of 'for,' which I call the functional and the gratuitous. It is not necessarily the case that something's meaning is either in and for itself (gratuitous) or externally located beyond or subsequent to itself (functional). With an analogical ontology, something may be for its own sake and for a purpose external to itself at the same time. In the pie of 'for,' we do not have to apportion to the gratuitous only the leftovers when the functional slice has been eaten. We do not apportion one piece of the pie to theology; the whole pie is theological from the outset.

Keywords: Biology, Function, Freedom, Explanation, Naturalism, Teleology, Analogy, Grace, Metabolism, Gratitude

1. Introduction

Why do human beings experience and practice gratitude¹? The emergence of gratitude in the natural history of *Homo sapiens* is a lively area of inquiry in evolutionary biology and paleoanthropology (Nowak and Roch 2007; Stellar et al. 2017)². The importance of gratitude in fostering social cohesion and cultural collaboration has been recognized (Smith et al. 2017), and

- 1 This publication was made possible through the support of Grant 61389 from the John Templeton Foundation. The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the John Templeton Foundation. Particular acknowledgements go to Manuel Zimmermann for invaluable conversation about the ideas in this article; to the Laudato Si' Research Institute, with whom I completed the research for this work as a Fellow of the Institute in 2021; and to all the participants in the symposium on the evolution of gratitude hosted by the Laudato Si' Research Institute in May 2021.
- 2 I take 'gratitude' to encompass a spectrum of phenomena, from specific individual acts which express thankfulness or indebtedness all the way to dispositions in the family of 'wonder,' identified as 'gratitude' by, for example, William Desmond (discussed below).

abundant data in psychology indicate the importance of experiences of gratitude in mental and social health (Emmons and Mishra 2011; Emmons and Shelton 2002; Emmons and Crumpler 2000). The focus in these discourses is on identifying gratitude's *function*. What does gratitude do: biologically, for the evolutionary advantage of an organism or group, and psychologically, for an individual's or group's mental health and wellbeing?

Functional styles of analysis are typical of these disciplines as they treat the phenomena in their purview. But gratitude represents a distinctive puzzle as an object of this kind of explanatory reasoning because it seems to depend for its meaning on not being explainable *only* in terms of its function. Gratitude, that is to say, seems to have some important relationship to gratuity: to something being for its own sake. If you are grateful to me for a gift *only* in order to gain something, we have an intuitive sense that the gratitude is not authentic. If we 'explain' gratitude as existing only for a biological purpose, has it lost for us that quality which makes it authentic? It presents a particularly pronounced case of an area of general critical concern in the relationship between theology and empirical sciences: the significance to theology of naturalizing explanations of behaviors. What is the impact on the *meaning* of something for us if it can be accounted for wholly in terms of its biological function? A philosophical and theological evaluation of these explanatory platforms as they handle the emergence of gratitude provides an opportunity to refine and clarify some interdisciplinary questions.

What follows is a short intervention to adumbrate one such set of questions. What if functional modes of analysis are taken to be explanatory of gratitude – that is, they are taken to answer the question, 'Why gratitude?' What have we assumed when we seek to explain gratitude in terms of its biological or psychological function? What would be the significance of such functionality? Two key debates in twentieth-century theology are sketched and applied to illuminate the way that these styles of theological reasoning influence the interpretation of a functional explanation of the emergence of gratitude. The wider structural implications of different construals of function are explored. It is suggested that the assumption that function and gratuity are really opposed is expressive of a (tacit) spatialization of function and gratuity: a zero-sum model of their relation in which they are conceived as jostling for room in the same conceptual space.

Plotting the connection between different points on this spectrum is part of the concern in this article; I suggest that these meanings share in a notion of 'gratuity.'

In debates over explanation *qua* causation (in the modern scientific sense), accounts of divine action in terms of primary and secondary causation have gone some way towards challenging spatializing conceptions of (in Aristotelian terms) efficient causation. What is under concern in this discussion is not what accounts for something as its mechanical cause, but its teleology: what a given behavior or practice is ‘for.’ The question is *why* gratitude occurs, what it ‘does,’ considered *qua* purpose rather than *qua* origin, and what the significance of a possible answer might be. Is there a conflict between something being *for* an instrumental end and *for* its own sake? Do these kinds of explanations occupy the same space? The general perception is that there is a conflict – either something’s meaning is ‘in itself,’ or its meaning is externally located beyond itself and therefore it really lacks *intrinsic* meaning: Its significance is located outside of it. This specific inquiry into gratitude thus touches on and illuminates a concern with ramifications beyond the growing field of gratitude studies.

There is considerable literature dealing with the naturalization of biological teleology. What has received less attention is the interpretive significance of causation *qua* purpose. How are we supposed to construe totalizing accounts of biological purpose (that is, function)? How does it change the meaning of something if its purpose can be wholly naturalized by being explained exclusively in terms of its biological function? This is a neglected frontier in the public perception of theological claims. It is tempting to save gratuity by looking for phenomena whose biological functionality cannot be explained and to seek gratuity in that space. White and Attenborough do this when they refer to the ‘play’ of starlings as being biologically unexplainable and therefore somehow *particularly* meaningful or *particularly* beautiful in a way that functionally explainable behaviors are not (White and Attenborough 1998). For such a hermeneutic, increasing the reach of biological functionality *per se* decreases perceived meaning by deflecting attention from the phenomenon itself onto what it is (instrumentally) ‘for³’

3 I am addressing here the colloquial sense of ‘function.’ In philosophy of biology, there is diversity of opinion about exactly what and how biological functions ‘explain’ anything. Arno Wouters, for example, rejects any explanatory role for function in biology (Wouters 2013; cf. McLaughlin 2001). A concern in this debate is the maintenance of the extrusion of an extraneously imposed (and therefore potentially ‘designed’) ‘purpose’ from biology, itself a key organizing concern of modern biology *tout court* (eloquently interpreted in Riskin 2016). While the argument of this article might be applied to address the conversation about function within philosophy of biology, I am concerned here with the sense of function in the non-technical or colloquial sense of being ‘for’ something: For example, a primate can be understood as exemplifying gratitude-type behaviors *in order to* cement his social position within the group. The reason for this focus is that it

It is just here that the potential for conflict arises in the function versus gratitude dynamic. If gratitude is perceived as being *for* social or biological gain, that is, instrumental in immanent terms, can it also be gratuitous – for its own sake – and therefore maintain precisely its character as gratitude? Do naturalizing accounts of gratitude’s functionality push an account such as William Desmond’s ‘ontological gratitude’ into a transcendental space which touches on the immanent only in isolated instances in which biological functionality vanishes from view and so presents a total discontinuity with such functionality⁴?

In what follows, I explore the way in which certain debates in theology give something like a model for answering a definite ‘No’ to zero-sum models of a relation between these two senses of ‘for,’ which I am calling the functional and the gratuitous. Sustaining that ‘No’ requires the somewhat difficult thought, difficult at any rate in a post-Kantian age, that something can be for its own sake and for a purpose external to itself at the same time. If we have a pie of ‘explanation,’ we do not have to apportion to the gratuitous only the leftovers when the functional slice has been eaten.

Elsewhere, I have maintained my rejection of zero-sum models with regard to the meaning of nonhuman creation in relation to humanity and of creation itself: Creation is ‘for God’ and ‘for itself’ in the same moment (Grey 2020). I leave aside in the present discussion the deeper claim I would wish to maintain, that such a both-and is only enabled by a classical Christian doctrine of creation, that is, one founded in the metaphysics of Chalcedon. The ‘something else’ which things are ‘for,’ when that something is God classically conceived as a pure act, dissolves the opposition between function and gratitude.

The conclusion of this discussion is that authentic gratitude can be obligated, functionally effective, and in our own best interests, biologically, psychologically, or socially, without losing its gratitude. Ontological gratitude, a response to gratitude which is itself gratuitous in keeping with that gratitude, is therefore not at all at right angles to natural-scientific accounts of gratitude’s emergence, but pulls together with them⁵.

is in this sense that biological descriptions are recruited in the public space within and beyond debates about ‘religion.’ This sense is also at play in psychological literature on gratitude (see, for example, McCullough, Kimeldorf, and Cohen 2008).

- 4 This is a different concern from the relation between different levels of natural explanation: for example, biological versus psychological or social. What is under concern here is the category of natural function *tout court* and its relation to ontological gratitude.
- 5 The alternative would not only require us to put in place an over-strong distinction between creatures’ natures and their ends, but also between different types of disciplinary explanation.

2. Function Versus Gratitude

The Latin *gratis* means ‘free.’ Etymologically indexed to gratitude, gratitude is a free return elicited by the receipt of something. In a theological context, gratitude is conceptually connected to praise, wonder, awe, and reverence: sentiments arising from a sense of oneself as being in receipt of something beautiful, precious, astonishing, and not within one’s own power to command, which evokes and demands response. Gratitude has a normative force as a free, truthful response to the world and to one’s own existence. In this sense, it transcends function, or may even be taken as an antonym of function, because it mirrors the gratuity of the first gift to which it represents the fitting response. From this point of view, it seems to pull particularly sharply against functional accounts.

We can illuminate what is at stake here by considering the treatment of gratitude in modern Catholic philosophy, exemplified in William Desmond’s conception of what he calls ontological gratitude (Desmond 2008, 43) and the understanding of creation as gift in the thought of Kenneth Schmitz. “A gift,” says Schmitz, “is a free endowment upon another who receives it freely: *the first mark of a gift is its gratuity*” (Schmitz 1982, 44). The original gift is creation itself. In the divine act of *creatio ex nihilo*, world and gift completely coincide. Here, gift does not describe a “physics of transference” – a discrete object passing between two independent actors – but is the structure of being itself (59). Gift is what creation *is*. The act of being and the act of receiving is the same act.

For Desmond, the fundamental form of gratitude is ontological because it springs from a constantly renewed astonishment at the gratuity and plenitude of being (Desmond 2008, 43). Ontological gratitude is a spontaneous creaturely response to the world. We are grateful because we recognize, even inchoately, the goodness of the gift that is being (Desmond 2001, 170–71). We feel that we are “guests of a feast that surpasses us” (163). This goodness of being is both elemental *and* astonishing, an astonishment rooted in being’s gratuity: “One does nothing to merit it, and *no payment is exacted*, for it offers itself simply as the life of the good, a life we are to live” (220). The gift is gratuitous because it is bestowed without expectation of recompense. It is this very freedom of the gift that renders gratuity the characteristic keynote of authentic gratitude.

The deep root of gratitude in this scheme is not primarily a feeling, experience, or behavior that is explained by its utility within a finite order. It is rather an upwelling of wonder at the *for-its-own-sake-ness* of being, it is non-necessity, it is having, in fact, no function whatsoever. “With-

out a contemplative openness to the mystery of being, there can be no gratitude” (Hanby 2011, 233). A receptive wonder at being itself is originary of gratitude. This metaphysics of gratitude becomes a spirituality in the work of Thomas Merton, who writes about the spiritual life being useless (Merton 1960), or Thomist Herbert McCabe writing about the “waste of time” that is God’s own life, shared with creation (McCabe 1987, 225). Creation can have no conceivable ‘function,’ for there is no wider system for it to function in. It is not ‘for’ anything except God, who is ‘no thing’ and for whom creation ‘does’ nothing.

Where gratitude is theologized in this way, there are clear tensions with evolutionary and psychological accounts. If gratitude has been explained by its conferring evolutionary advantage, underpinning societal cohesion, or making us ‘feel good’ – that is, as promoting biological ends – this seems to evacuate it of its gratuity. The handling of altruism in the empirical sciences is an influential example of the effect this kind of explaining-downwards can have in that it causes a social or psychological phenomenon to lose its credibility, to not be what it says on the tin. In the case of altruism, what looks like other-interested action is shown to be, in fact, self-interested. If gratitude is shown to be merely functional, it ceases to be a gratuitous response to gratuity, in keeping with the freedom of the gift, and becomes utilitarian in the sense of being *for* an instrumental end. No longer a *for-its-own-sake* response to that which is *for-its-own-sake*, namely the gift of creation itself, it is just a means to an end. The gratitude I express to cement a relationship which will advantage me in the future, for example, seems different in kind and not just different in degree from ontological gratitude. After biological explanations of gratitude’s function to provide an evolutionary advantage, we may go on practicing and feeling gratitude, but with a kind of lingering irony of the sort Nietzsche observed in his critique of morality: What looks like generosity or justice is really just power disguised, and yet we have no choice but to believe in our own fictions. What looks like a sincere act of thanksgiving is really just a bid for future advantage.

The tension between function and gratuity has been pivotal in two debates which have dominated the conversation in theology over the last century. A consideration of the way this antinomy was processed in those conversations can guide a theological reception of empirical accounts of the emergence of gratitude. In both debates, one camp saw a conflict between function and gratuity, the other saw their synergy or convergence. The latter approach indicates the way to a credible theological reception of contemporary empirical sciences in their mode as explanatory discourses in general and offers particular illumination of what it would mean for

gratitude to be *both* functional *and* gratuitous. It further offers a distinctive account of what authentic theological reasoning characteristically looks like: Namely, that it overturns perceived antinomies by challenging premises, rather than simply trying to occupy and defend one territory which is defined over against another on the same plane. In particular, we see how theological reasoning can dissolve at least some perceived conflicts by resisting a creeping spatialization of the categories of function and gratuity in which they are seen as operating on the same plane and therefore as competing with one another.

3. Resisting Spatialization: Grace and Gift in Two Twentieth-Century Debates

Twentieth-century Catholic theology was decisively shaped by controversy about the relationship between created nature and God's grace. Neo-Scholastic metaphysics, which dominated the nineteenth century, identified two planes on which the destiny of a created spirit could be understood. On one plane, a 'natural' property of a created nature is to be oriented to an end (i. e., a destiny or fulfillment) that is continuous with that nature, proportionate to it, and within its power to attain. In the case of created spirits (i. e., humans and angels), superadded to this 'natural' *telos* by God's gift of redemption is a further vocation to a *supernatural* end: the vision of God. In this superadded gift, the created spirit is endowed with a destiny entirely out of proportion to its own capacities and not within its proper power to attain. This supernatural calling is endowed as an act of free donation by God and is achievable only through the operation of grace in the created spirit. The main aim was to preserve the sense that God is not obligated to give grace, but does so completely freely. Grace is defined precisely by its gratuity, its non-necessity. Only the non-continuity of grace with nature – its non-naturalness – could ensure the genuine gratuitousness of the divine gift of a supernatural destiny. On this understanding, nature and grace belong to different orders and the integrity of each requires their separation.

Jesuit theologian Henri de Lubac questioned this heritage by contesting the idea that there was such a thing as a purely natural nature which could be meaningfully understood apart from the graced ordering to the divine life. In a work published in 1946 as *Surnaturel*, de Lubac suggested that created spirits are created with a natural desire for the vision of God. De Lubac was expressing a theological reasoning in which creation and redemption, world and God, are not seen as competing alternatives.

The disagreement between de Lubac and the Neo-Scholastics was in part a disagreement about what it is to be gratuitous. Does an authentically gratuitous gift necessarily go beyond what the receiver could by its own nature demand, expect, or have capacity for? The Neo-Scholastics worried that in de Lubac's account grace would be something that we have, as it were, a right to, a just expectation of, something we could reasonably anticipate. It thus seems to make grace somehow necessary and therefore not really *grace*. Grace in de Lubac's account might seem to appear almost as an intrinsic function of nature: As though grace is one of the things, albeit perhaps *the thing*, that nature automatically implies and therefore, in some sense produces or gives rise to almost automatically (and therefore 'unfreely').

On de Lubac's understanding, however, the gratuity of God's gift is not endangered by its being anticipated by, required for the completion of, or consequent upon the being of nature. Gratuity operates within the realm of function and necessity without thereby ceasing to be gratuitous. Nature reaches for this gratuity without thereby ceasing to be functional. This functional-reaching-beyond-function is characteristic of nature itself. On this kind of account, grace is both necessary and gratuitous; it is required and freely given.

This kind of thinking opens the way to seeing how there may be a contrast, but not a contradiction, between the features of gratitude described in functional terms by evolutionary biology and psychology and the ontological gratitude characteristic of religious feelings, experiences, and dispositions. The language of paradox is often used to describe the structure of de Lubac's thinking in this regard.

In recent decades theology has been influenced by a different but related series of debates about the nature of gift. In his *Essai sur le Don [The Gift]* (1925), the French anthropologist Marcel Mauss argued that gift exchange was the fundamental glue of primitive societies, representing what he called a 'total social fact' which unified into one system of understanding and practice the realms that modern societies have compartmentalized: economics, law, religion, politics, family (Mauss [1925] 2005). According to Mauss, the giving and receiving of gifts in premodern societies was marked not by purity in the sense of independence of personal interest or intent, but by obligation. Gift exchange expressed a form of social necessity in which every gift must be met by a return gift. The exchange of gifts is not free in the sense of being disinterested and without function. Rather, it mediates the interests of the parties in establishing or maintaining a certain sort of relationship. Gifts, in Mauss' account, represent in the sense of 'making present' the giver. (The distinction between persons and property,

fundamental to Western legal systems, is not in force in archaic societies, according to Mauss.) The hard-and-fast distinction between the realms of personal and disinterested relationships versus commercial and interested ones maintained in modern Western societies does not obtain. The gift is seen to be and experienced as a 'real' gift, but also carries expectations and obligations.

Mauss' work on the nature of the gift has been influential across various disciplines, exposing as peculiarly modern the notion of a 'pure' or completely disinterested gift. Kant's understanding of moral action as being defined precisely by its *dis*-interestedness – its being wholly indifferent to the preferences or needs of the agent – fueled the presentation of a pure altruism as an ethical ideal: the capacity to disregard one's own interests. For Kant, an agent must act for and in the gratuity of the right and the good; such an act gains nothing, is *for* nothing, save itself. In the second half of the twentieth century, Jacques Derrida (1992) and Jean-Luc Marion (2002) defended the idea that a true gift is pure, lacking any ulterior motivation or agenda to elicit a return. This notion of a pure gift fuels a pessimism about the ethical capacities of human beings who, in the understanding of modern evolutionary theory, are 'programmed' to self-interest, to the point that explanations of gift-giving behavior have to be made in terms of their ultimately serving some function. On the terms of Kant and the defenders of the pure gift, then, a functional account of gratitude exposes it precisely as lacking in any gift-character at all.

A significant movement in the last few decades, exemplified by the work of John Milbank (2003) and John Barclay (2015), follows the trajectory of Mauss' ethnographic studies to contest the notion that the ideal gift is or ought to be pure. They argue that a notion of exchange still obtains in the right conception of the gift, both between human persons and between humanity and God. On this understanding, to contrast self-interest and other-interest is wrong-headed. Gifts have their meaning only in the context of exchange because a gift is meant to establish relationship in which both parties have an interest. The obligations and expectations of reciprocity arrangements among early human societies do not represent a primitive phase, an underdevelopment of the ethical instinct, but a true representation of the nature of human sociality as intrinsically and characteristically interested. In the gift-exchange characteristic of these societies, in which gratitude can be understood in terms of both general and specific forms of social reciprocity, gratitude and social function pull together and do not exist in a zero-sum competition. Gratitude's gratuity does not consist in its being free of social function or personal interest, just as grace's gratuity

does not consist in its being an alternative to the functions of created nature. Whether the Maussian account can be supported anthropologically is not germane to the present discussion. The concern here is to notice that Mauss and his theological receivers are addressing the significance of gift and gratitude as *functioning* within a social context. This significance needs to be interpreted not in a realm of high-minded altruistic disinterest, but evolved, learned, and practiced as part of a matrix of social effects and outcomes desired for the ends of, for example, survival, reproduction, social advancement, and so on.

What if the evidence of human evolution suggests that practices of gratitude are self-interested? What if the evidence of psychology suggests that gratitude is psychologically beneficial and that we should practice gratitude because it is good for us? What if the emergence of gratitude can be explained in terms of its social, biological, and psychological function? Does this evacuate it of its meaning? Two types of response to these questions dominate. Either the functional, self-interested, and natural explanation of gratitude is seen as competing with gratuitous, ontological, and theological accounts, *or* these two modes of explanation are construed as operating in explanatory spaces that never come into contact with one another. Both options can now be seen to share an underlying logic: Function and gratitude are conceived as alternatives. Something is either for its own sake and therefore 'gratuitous' or something is for some purpose external to itself and therefore 'functional.' These two options collude in a background assumption of a zero-sum model of the relationship between function and gratitude: between something being 'for its own sake' and something being for an instrumental purpose to gain some extrinsic good.

On the different logic represented here by de Lubac, Milbank, and Barclay, we do not ringfence a realm of grace, meaning, and freedom in order to protect it from the realm of nature and necessity. Psychological, biological, and theological accounts of gratitude's emergence may exhibit tensions with one another, but need not be seen as contradictory or as having nothing to do with one another. On the account represented by de Lubac, God's grace meets a genuine and innate need; grace completes nature in a way which is continuous with, while infinitely exceeding, natural exchange. On the account represented by Milbank and Barclay, the opposition between self-interest and other-interest is contingent, not absolute. Gift and reciprocity are interiorly related, all the way up as well as all the way down. Gift, therefore, does not fill a 'gap' in explanation, but characterizes the whole of creation and all the relations within it. These authors suggest, in relation to different terms, that there is no need for gratitude to challenge, cancel, or

evacuate the functions of nature. They are working from a non-zero-sum conception of function and gratuity.

Commenting on the nature of free gifts, as given or as received, one author observes that the word ‘obligate’ is related to the word *ligare* (to bind) and therefore means un-free, an unfreedom that makes a true gift impossible (Stanford 2015). We cannot be obliged to return a gift with gratitude, Stanford thinks, and certainly gratitude cannot be offered for our own advantage and still be authentic. But *ligare* is also the root of the word *religio*. To experience oneself as bound is not foreign to that right relation to the ultimate that religion refers to, a logic which has perhaps never been better expressed than by John Donne. “Take me to you; imprison me; for I, except you enthrall me, never shall be free, nor ever chaste, except you ravish me” (Donne 2008, 553). To be bound and to be free, to be given and to be gratuitous, are not, in theological reasoning, mutually exclusive; on the contrary, they are mutually implicated.

4. Two Ontologies: The Zero-Sum and its Alternative

The way in which function and gratuity are imagined to relate plays out in the way gratitude is theologically valorized. What is a truly Christian gratitude supposed to look like? In his critical history of gratitude, Peter Leithart contrasts two understandings of gratitude: an intra-mundane gratitude which occurs in circles of reciprocity and exchange with clear social functionality; and a linear gratitude in which God as the true object of gratitude overcomes and relativizes the power dynamics of intra-mundane systems of exchange and reward (Leithart 2015). For Leithart, the evolutionary conditions of gratitude’s emergence are overcome by Christian gratitude. The biological and social functionalities of gratitude are theologically – and therefore (ultimately) also morally, socially, and politically – suspect.

One could present this (to caricature) as a Protestant account of the relation between created and uncreated. The created-uncreated relation is presented primarily in the terms of contrast, as though they are moral and ontological alternatives. This type of approach is associated with a Barthian type of ontology in which created and uncreated are taken as oppositional and, from one point of view at least, mutually exclusive. Such reasoning is contested by a (to caricature) Catholic logic of grace, in what I have characterized broadly as de Lubac’s account, or gift, in what I have characterized as Barclay’s and Milbank’s account. The ontology presupposed in those understandings refuses the presentation of uncreated and created

logics as competitive. This is expressed in a natural law tradition of Catholic philosophy in which a creature's natural appetites, needs, and inclinations are construed as exhibiting a profound consistency with a shared vector towards its supernatural ends. This kind of theological reasoning is able to generate an integrated framework which encompasses moral, philosophical, and theological dimensions with natural history, empirical science, and ordinary experience.

Since one can, in practice, find both styles of thinking in both camps outlined above, one could re-parse this distinction as an analogical versus a dualist ontology. The latter tends to manifest in a competitive model of created-uncreated relation: What one takes, the other has to give. The former is what we might call a confluent model or, following Kathryn Tanner, a "non-contrastive" understanding (Tanner 1988, 46–47). The language of zero-sum captures the spatialization that is assumed in the former approach. If two objects are considered as being in three-dimensional space, then they cannot both exist in the same location; they necessarily displace one another. The pie-chart metaphor behind the language of zero-sum captures this dynamic. As long as the terms of a relation, comparison, or contrast are considered as existing, so to speak, within the same geography, the spatialization persists (cf. Milbank 1990). This is why it makes sense to frame the alternative in terms of confluence, where the two terms flow together. To refuse to spatialize function and gratuity is to resist the reign of a Newtonian cosmology of absolute extension on a single universal plane in the semantic as well as the physical domain. It is to model the relationship between, in this case, the different sorts of things something might be 'for' as analogical rather than merely univocal (competing within the same space) or equivocal (not able to enter into any meaningful relation at all; cf. Heaps 2015). If different sorts of reality or meaning have an analogical relationship, they can relate meaningfully – they have something to do with one another – but they do not inevitably collide (though they may be in tension).

The specifically theological implications of the difference between a spatializing, contrastive model and an analogical, non-contrastive model are readily apparent. In soteriology, for example, it appears in forensic and imputational versus participative understandings of the atonement (cf. Davison 2019, 260–300). In sacramental theology, the sign and the signified may be described so as to express the externality of grace and nature or their confluence. That it cashes out concretely also for politics and ethics is clear from Leithart's treatment, in which the contrast between gratuitous and interested gift-giving is employed to call Christians to transcend and ultimately contradict the social functionality of gratitude conceived in

circles of pragmatic advantage. A spatializing and contrastive conception of function and gratuity makes the biological, sociological, and anthropological analysis of gratitude's functionality in those disciplinary spheres seem to call for displacement by theology's account. Gratitude would then seem to depend for its meaning, its really gratuitous character, on its ultimately trumping and displacing natural functionality. Thus, theologizing gratitude appears to call for an effortful resistance to functional accounts rather than an exploration of the ways in which biological and social functionality might actually be construed as themselves gratuitous, so revealing the immanent teleology of creation itself.

A philosophical architecture for such an account of the biological is offered by the German Jewish philosopher Hans Jonas, who conducts a still unsurpassed critique of the prevailing modern conception of nature and its functions which sees the biological as sheer necessity, over against a putative, and increasingly denied, realm of freedom. The genius of Jonas' treatment in his classic work *The Phenomenon of Life* (1966) is to show how the fate of the biological *is* the fate of freedom and therefore of meaning itself. Freedom is a condition of meaning, and the biological is the circumstance of freedom's arising. Seeing the freedom of consciousness and intentionality as layered extrinsically on top of – rather than inhering within, implied by, or coterminous with – the biological functionality of nature forces the realm of meaning into a non-physical, non-biological space. In this move, the biological *per se* is given away to meaninglessness. Freedom is first transcendentalized and then denied altogether. For Jonas, to ringfence one from the other is to destroy both nature and freedom. Not only do we not *have to* ringfence a realm of grace, meaning, and freedom in order to protect it from the realm of nature, function, and necessity, but we urgently *must not*. If we do so, we cannot make sense of the phenomenon of life – that is, of the biological – as it really is.

5. Hans Jonas and the Biology of Freedom

Jonas' 'philosophical biology' shows that biological function is not a threat to freedom but the very circumstances of its arising. There are several planks in Jonas' argument, but we focus here only on one: an extended analysis of metabolism. For Jonas, metabolism considered as a biological function seamlessly expresses and gives rise to freedom. In this treatment he mounts a philosophical resistance to the idea that to naturalize biological teleology is necessarily a reductive procedure. For Jonas, it is not when bio-

logical functionality (materiality) vanishes from view that freedom (mind) appears, as though we search for freedom only in the chinks between the chain of mechanical necessity. Necessity and freedom, matter and mind, functionality and gratuity, are not discontinuous but coterminous in Jonas' analysis.

Metabolism is the exchange of matter and energy between an organism and its environment in which the organism's material constituents are constantly cycled through it and replaced. The living form of the organism is sustained by this exchange. In the process of exchange, the organism's form becomes distinguishable from its matter; the organism persists in its distinctive identity through the exchange of its material components with its environment⁶. If it were to become statically identical with its material components it would be dead, in the sense that its metabolism would have ceased to function. But although its form is distinguishable from its matter, the organism's metabolic character places it in a relationship of extreme dependence upon the physical environment. It is caught in a paradoxical dialectic between freedom and necessity: In the very moment of being liberated from total coincidence with form, the organism gains both sovereignty and indigence. The self-identity of the organism introduces an element of heterogeneity into the otherwise homogeneous uniformity of non-living matter; it becomes isolable from its environment, gaining a sense of singleness and distinction which it must constantly reassert in order to continue as itself. Thus, is invented 'the world' as an object, as an experienced reality that is distinct from the self, a world "in which, by which, and against which" the organism must maintain itself (Jonas 1966, 83).

The distinction of form from matter means that organismic life must be described in terms of inwardness as well as outwardness. Organisms affirm, in the sense of actively pursuing, their own existence: "[E]xistence affirmed is existence as a concern" (4). A merely mathematical-mechanical analysis of the organism "misses the decisive point – the point of life itself: its being self-centered individuality, being for itself and in contraposition to all the rest of the world" (79)⁷. Organic life is characterized by "active self-integration," which yields an ontological and not merely phenomenological

6 For a lengthy treatment of metabolism as freedom, see the essay *Is God A Mathematician? The Meaning of Metabolism* (Jonas 1966, 64–98).

7 Jonas is responding to a lineage of thought represented in his own moment by the mathematician James Jeans (see Jeans 1933), which is nevertheless representative of "a long and venerable tradition that is almost coextensive with the history of Western speculation" (Jonas 1966, 66). Jonas traces this tradition through Leibniz and Kepler all the way back to Plato.

meaning to the term ‘individual’ (used biologically) (79). As Jonas argues: “The introduction of the term ‘self,’ unavoidable in any description of the most elementary instance of life, indicates the emergence, with life as such, of internal identity” (82).

One can argue in the case of waves and similar physical event-structures that their seeming wholeness and distinctness are phenomena merely of our sensuous perception and not of their inherent being. However, in the case of a living organism, there is something else there: not just continuance through time, but active self-continuation; not just inertia, but appetitive persistence in being. An organic being is constantly involved in saying ‘Yes’ to its own existence. In the living organism,

nature springs an ontological surprise ... an entirely new possibility of being: systems of matter that are unities of a manifold, not in virtue of a synthesizing perception whose object they happen to be, nor by the mere concurrence of the forces that bind their parts together, but in virtue of themselves, for the sake of themselves, and continually sustained by themselves. ... [F]orm for once is the cause rather than the result of the material collections in which it successively subsists (79).

The language of selfhood may seem unduly loaded and anthropomorphizing. But Jonas uses his terms advisedly: For appetite and satiation to make any difference to an organism, there must be a quality of felt selfhood resulting from a living organism’s “supreme concern” with “its own being and continuation in being” (84). Organismic identity is not inertia, but “perpetual self-renewal through process”; a deliberate, sentient pursuit of continuance of self which always, even if incipiently, expresses a kind of freedom (79). We are thus compelled to speak of inwardness or subjectivity pertaining to organismic existence as such, no matter how faint.

It is through this arising of individuality in an ontological sense, the arrival of form as a real and efficacious presence on the ontological scene, that “the venture of freedom by which a form maintains its identity through the change of its matter” begins (106). Jonas’ use of the term ‘freedom’ indicates something prior to reflectivity, choice, decision, or theoretic awareness. In metabolizing, an entity comes into a relation with its body; it becomes possible for its body to become an ‘other’ to it. Freedom, therefore, really arises on the biological plane. Matter possesses mere identity. It is inertly itself without any deliberate act of self-continuation. Its duration is remaining, not reaffirmation, and its cognizability is wholly external (81). In contrast, in its acquisition of autonomous form, an organism gains an identity which is “mediate and functional” (81) through the “perpetual turnover of constituents” (82). An organism must exert itself to live. For the freedom of form with respect to matter, of self with respect to the world, is

dialectical in the sense that it is attended by a like-for-like increase in necessity. The metabolic process, while enabling the distinction of organism from material environment, also introduces it to a precarious dependence on that environment for the substance(s) necessary for life: at the most basic level, nutrition, but the dependence complexifies and intensifies with every gain in organization.

For Jonas, there is a like-for-like increase in freedom and biological function. The increase of freedom differentiates the organism from its environment and in this way places it in increasing dependence upon it. "Thus the sovereignty of form with respect to its matter is also its subjection to the need of it" (84). A metabolizing organism can never rest with the sum of stuff which makes it up but is always striving through and depending on the necessary transformations of its constitution; it suffers an "indigence" which is "foreign to the self-sufficiency of mere matter" (84). This dependence turns the organism outward toward the world in active self-concern, its needy seeking of satisfaction a direct result of its autonomy, producing "a dialectic of needful freedom" (84). This neediness of the organism, its indigence in comparison to non-living matter, indicates a certain pathos that is proper to the organic realm. Life has a poverty that the non-living will never suffer, a poverty of fragility and precariousness, of being dependent on what it can never control, which is the world outside itself. This is a poverty in which dependence and constraint increase in direct proportion to independence and freedom; there is no increase of freedom without a concomitant increase in limit and exposure.

Metabolism stimulates the arrival of "world" as "a horizon of co-reality," a meaningful, pressing, objective context of life (87). The distinction of form from matter thus results in a constant referral beyond the body to the world as something both foreign and potentially assimilable to the self; the organism's need drives it to transcend itself towards the world both spatially and temporally. The organism is thus in an inherently tensional state of both exceeding and preserving the self, producing in every form of life a horizon of transcendence. As Jonas writes:

The great contradictions which man discovers in himself – freedom and necessity, autonomy and dependence, self and world, relation and isolation, creativity and mortality – have their rudimentary traces in even the most primitive forms of life, each precariously balanced between being and not-being, and each already endowed with an internal horizon of 'transcendence' (Jonas 1966, ix).

The self-transcendence of life generates sensitivity, responsiveness, and affectivity, a range of modes of reactivity to the world, now experienced as outward and different from the self, but inalienably important to the

organism's self-continuance. The combination of inwardness and reactivity parallels the paradox of needful freedom: The organism is self-centered, appetitively preoccupied with its own continuance and satisfaction, and by this very fact driven into various modes of urgent relation with the world now perceived as external, as other to the self, impinging on it as something separate.

It is this which explains, for Jonas, "the teleological or finalistic nature of life" (86), its dynamic forward-oriented character which is caused in the first place by the independence of an organism's identity as form from its matter, rather than the result of a particular physical structure. Thus, the teleological character of life is of a metaphysical, not just a physical, nature. A teleological account of organismic structure and function is not an alternative form of description of the biological sphere. The form of an organism is its freedom and is indelibly linked to its function (81). Mechanistic interpretations of organic life reduce it to sentience and motility, neglecting that distinctive and unique property of the metabolizing – namely, need – from which arises what Jonas calls "emotion": the diverse expressions of desire, fear, and appetite which characterize metabolic existence (126). In the context of the recognition of such needs as intrinsic to organic being, the notion of purpose, and thence the proper place of the good, is retrieved as essential to the understanding of life. In this way, Jonas places freedom within the feedback mechanisms and automatization of the organic.

The point of this extended consideration is to notice that for Jonas, metabolism as a necessary function of the organism's life at the same time expresses its freedom and gives rise to it. To describe the biological function of metabolism is to describe it as meaningful; organismic activity actually coincides with freedom itself. Consciousness and the meanings that accompany it do not alight on top of the biological as a spaceship lands on the moon. Just as freedom is not compartmentalized from the biological, gratuity is not an alternative to the functional, though it may exceed it, just as the living organism exceeds the non-living but is nevertheless equally material. Freedom and gratuity come to be, for Jonas, in the midst of biological functionality itself; that functionality is precisely the organism's freedom, expressing itself moment by moment.

6. Conclusion: Uniting Function and Gratuity

In the foregoing, I have considered two theological models of what it would look like to resist an opposition between function and gratuity and, via

Jonas, an attempt to think this through philosophically in relation to the facts of biology itself. Whether or not Jonas' particular effort to give a non-reductive account of the biology of freedom is considered successful, the theological structures for refusing a contrastive, zero-sum account of meaning stand. On that trajectory, Leithart's contrast between two types of gratitude – a worldly, circular, and self-interested one (biological) and a linear one which bypasses mere functionality and so attains to a Christian gratitude – is misconceived. Ontological gratitude can be in continuity with and consistent with, while exceeding, the functional benefits of gratitude from a sociological, biological, or psychological perspective. The conception of gratitude we broadly think of as religious presents no necessary alternative to functional accounts.

Two areas for further theological and philosophical investigation open from here. Firstly, a framework which allows for continuity between function and gratitude need not deny that aspects of gratitude's emergence or expression in hominid and pre-hominid natural history require moral or theological critique. Critical interrogation of gratitude's conditions in natural history should still be undertaken. For theology and philosophy, this calls for an exploration of whether and how intra-mundane forms and functions of gratitude might be taken analogically to resemble ontological gratitude as originary (cf. Massmann 2021). Secondly, empirical studies frequently operate with culturally contingent moral antinomies, which they use to interpret the data (e.g., Hussong et al. 2019). Construals of value which are anything but empirically derived influence how empirical studies are conducted and the way the findings are presented and adjudicated. Philosophy and theology should carefully examine the kinds of moral narratives that form empirical investigations.

On the convincing articulation of a non-zero-sum model of meaning depends the credibility of theological thinking in the public sphere. The influence of the zero-sum model in the public reception of natural-scientific functionalizing explanations of life and meaning cannot be overstated. Much of contemporary atheist discourse and its satellites in wider social commentary on science has silently secured as unchallenged the assumption that the humanly meaningful occurs within that ever more contracted sphere, so that it hovers contested and unmoored, with constantly receding credibility, as a ghost over the given world of material and biological operation. Mackie's famous claim of the 'queerness' of the metaphysical is now applied to meaning and freedom more and more successfully as the explanatory reach of disciplines from evolutionary biology to psychology to neuroscience implacably extends (Mackie 1977). If the zero-sum model is

assumed, theology will take ever smaller pieces of the pie. As soon as it has accepted just one piece of that pie, it has surrendered the claim – which must be characteristic of theology – to the theological character of the pie as such.

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