Digital Duplicates and Collective Scarcity

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Abstract: Digital duplicates reduce the scarcity of *individuals* and thus may impact their instrumental and intrinsic value. I here expand upon this idea by introducing the notion of *collective* scarcity, which pertains to the limitations faced by social groups in maintaining their size, cohesion and function.

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1. Introduction

A Digital Duplicate (hereafter DD) of an individual is a digital, often AI-enabled, representation or simulation of that individual created using data such as voice, appearance, behaviour or preferences. A prominent example in recent discourse is DDs of particular persons created through large language and multi-modal models.[1]

In a recent article in this journal, Danaher and Nyholm (2024) explore whether DDs diminish the value of individuals by reducing their scarcity. They introduce two forms of scarcity: *intrinsic scarcity*, based on individual uniqueness, and *instrumental scarcity*, based on a person's limited capacity to contribute to external goals. They argue that DDs may reduce *instrumental* scarcity by allowing individuals to overcome spatial and temporal limitations via high-tech, interactive representations of themselves. However, since there is only one 'original' of each person, DD may not reduce *intrinsic* scarcity; instead, they argue, the real or perceived value associated with an individual's uniqueness may even be increased.

In what follows, I expand on Danaher and Nyholm's argument by developing the notion of *collective scarcity*, a dimension emphasising the limitations of groups, and considering how DDs will impact it. I argue that there are intrinsic and instrumental forms of collective scarcity and that they are impacted by DDs.

Here is the plan. In Section 2, I introduce the notions of intrinsic and instrumental collective scarcity. I then consider how DDs may impact the collective scarcity of a group and, with it, the group's value. Next, I consider how the individual and collective versions of intrinsic and instrumental scarcity are related. I conclude in Section 3.

2. Groups and Collective Scarcity

Danaher and Nyholm examine how DDs could extend an individual's value into the world. I want to focus on how DDs might impact *collectives*, or groups. To this end, I introduce the concept of

[1] See Gabriel et al (2024) on advanced AI assistants.

collective scarcity, which I distinguish from the notion of *individual* scarcity, whether intrinsic or instrumental.

Collective scarcity refers to the constraints faced by groups in sustaining their size, cohesion and function. Unlike individual scarcity, which centres on personal contributions and uniqueness, collective scarcity concerns the shared capacities and relational dynamics of social groups.[2]

Katherine Ritchie's (2015) account of social groups can further refine the notion of collective scarcity. Ritchie distinguishes between Type 1 and Type 2 groups:

> **Type 1 Groups**: Organised entities like sports teams or committees, which depend on roles and collaboration for their existence.
>
> **Type 2 Groups**: Attribute-based groups, such as racial or cultural communities, defined by shared features and societal constructions.

For Type 1 groups, scarcity arises from functional dependencies – e.g., a sports team needs players to fill specific roles. For Type 2 groups, scarcity stems from misrepresentation and threats to cultural identity.

Based on this formulation of collective scarcity, we can say that the intrinsic value of a group emerges from its cohesion, shared identity, and mutual trust, while instrumental value relates to its ability to fulfill practical goals and functions.

We can then formulate intrinsic and instrumental collective scarcity in line with Danaher's and Nyholm's argument as follows:

> **Intrinsic Collective Scarcity**: Limitations to a group's cohesion, identity, and shared intentionality and trust – qualities that underpin the group's intrinsic value. For example, a cultural community (Type 2 group) may derive its intrinsic value from its shared traditions and relational authenticity.

[2] Porsdam Mann et al. (2024), pp. 36–7, allude to this idea when mentioning preservation of cultural and group-specific writing styles that could be considered instrumentally or intrinsically valuable.

Instrumental Collective Scarcity: Functional limitations of a group, such as constraints on its ability to achieve shared goals due to resource shortages or insufficient role fulfilment. For instance, a sports team (Type 1 group) relies on filling functional roles, such as those of players or coaches, to operate effectively.

Let us now consider how DD may impact intrinsic and instrumental collective scarcity and thereby the value associated with a group. I think that DDs influence these dimensions in distinct and sometimes conflicting ways, depending on whether the group is a Type 1 group (an organised entity like a team or committee) or a Type 2 group (an attribute-based community such as a cultural or racial group).

In Type 1 groups, such as sports teams or boards, intrinsic value is rooted in collaboration and the shared intentionality necessary for effective functioning. DDs undermine this by reducing opportunities for meaningful human interaction and collaboration. For example, an online video game team of duplicates might lose the sense of camaraderie and trust that makes its collective efforts intrinsically rewarding, even if the team continues to function instrumentally.

For Type 2 groups, such as cultural or identity-based communities, intrinsic value derives from the authenticity and relational dynamics that sustain the group's identity. DDs might pose a risk to this value by misrepresenting group identity, as their artificial nature cannot capture the genuine shared intentionality or lived experiences that bind these groups together. For instance, using DDs to preserve or expand cultural traditions may inadvertently dilute their meaning or disconnect members from the relational dynamics that sustain the group's cohesion. The result is an amplification of intrinsic collective scarcity, as the group becomes less cohesive and its identity more fragmented.

DDs have the potential to alleviate instrumental collective scarcity by filling functional gaps or providing substitutes for absent members. For Type 1 groups, this can enhance a group's operational capacity. For instance, a board missing key members for deliberation could use DDs to ensure that decisions are made and operations continue smoothly. Similarly, in an online sports team, DDs could temporarily fill roles to maintain performance levels. However, an overreliance on DDs risks diminishing the group's instrumental value over time. As DDs flood functional roles,

they may undermine the genuine contributions and creative collaborations that give the group its distinctive capacity to achieve goals.

For Type 2 groups, instrumental value might initially benefit from DDs through broader representation or accessibility. For example, DDs could allow a cultural community to spread its practices more widely. Yet this comes at a cost: as DDs take on more instrumental roles, the group risks losing its deeper relational and cultural significance, as authenticity and trust – the backbone of its intrinsic value – may erode.

In the context of groups, DDs thus need to navigate a delicate balance between enhancing instrumental functionality and undermining intrinsic meaning. While DDs might alleviate constraints related to group size or operational reach, they may simultaneously exacerbate qualitative challenges by eroding the trust, authenticity and shared intentionality that define a group's intrinsic value. For both Type 1 and Type 2 groups, the long-term impact of DDs on the group's value depends on how effectively their integration balances these opposing forces. Overuse of DDs risks a profound devaluation of what makes groups meaningful and cohesive, even as their immediate functional contributions seem to address collective scarcity.

A few remarks on the conceptual distinctness of individual and collective scarcity. Individual scarcity refers to a person's unique attributes, such as their spatiotemporal limitations or their irreplaceable consciousness and personal identity. It reflects how the uniqueness of singular entities contributes to their intrinsic and instrumental value. For instance, a person's ability to be physically present in one location at a time underscores their finite capacity to form relationships, complete tasks or influence the world. In contrast, collective scarcity arises in the context of social collectives, focusing on the limitations that constrain their size, cohesion or function. A group's collective value does not primarily derive from the singular attributes of its members but from their interactions, interdependence and shared identity.

Table 1 below contrasts individual and collective scarcity of both types (intrinsic and instrumental) to contextualise these features and implications.

Table 1.

Scarcity type	Definition	Effect(s) of DDs on scarcity	Implications for value
Intrinsic individual scarcity	A person's unique identity and non-replaceable consciousness.	Cannot replicate unique consciousness but may enhance perceived individual uniqueness by comparison.	May indirectly enhance individual uniqueness and irreplaceability.
Instrumental individual scarcity	A person's limited capacity to achieve multiple goals or contribute to a large number of projects simultaneously.	Enhance external personal engagement and influence but risk oversaturation and loss of authenticity.	Expand personal influence and productivity but risk diminishing personal value through oversaturation.
Intrinsic collective scarcity	Limitations on a group's cohesion, shared identity and cultural integrity.	Risk undermining group cohesion and identity by commodifying or misrepresenting shared values.	Risk commodifying or misrepresenting group identity.
Instrumental collective scarcity	Constraints on a group's achieving shared goals due to limited size, unfilled roles or missing resources.	Fill gaps in membership or resources but may erode trust, shared intentionality and collaboration.	Support group functionality and may initially broaden representation or access; overreliance on technologies risks undermining trust and collaboration.

The relationships among these four kinds of scarcity are nuanced. Individual intrinsic scarcity shapes collective intrinsic scarcity because the unique contributions of key individuals often underpin a group's identity and cohesion. Similarly, alleviating individual instrumental scarcity, such as through digital duplicates increasing a person's output, might address some functional gaps within a group. Yet such a strategy risks intensifying collective instrumental scarcity over time by eroding trust, collaboration and shared intentionality. Thus, while individual and collective scarcity are interconnected, resolving scarcity at the individual level – whether intrinsic or instrumental – does not automatically address the qualitative and relational challenges that define collective scarcity, and may even exacerbate them.

3. Conclusion

The emergence of digital duplicates redefines our understanding of scarcity and value at the level not only of the individual but also of the collective. By complicating the dynamics of group cohesion, shared identity and functional collaboration, DDs force us to reconsider the foundations of collective value and authenticity.

References

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