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Political economy of knowledge production in capitalist academia: Challenges and opportunities for socio-ecological transformation

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Political Economy of Knowledge Production in Capitalist Academia: Challenges and Opportunities for Socio- Ecological Transformation

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Political Economy of Knowledge Production in Capitalist Academia: Challenges and Opportunities for Socio-Ecological Transformation

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Abstract

Western societies face unprecedented interconnected crises—climate change, democratic instability, rising inequality, and growing science scepticism—that demand fundamental socio-ecological transformation within a compressed timeframe. However, current university systems, shaped by neoliberal restructuring and historically patriarchal logics, are structurally inadequate to support the critical research and societal engagement necessary for this transformation. This diminishes academia's relevance, exacerbating the post-truth crisis. We examine how competitive evaluation mechanisms, economic incentives and academic culture in contemporary academia hinder research conducive to socio-ecological transformations while perpetuating existing power structures and knowledge hierarchies.

Through critical analysis of academic structures and knowledge production systems, drawing on existing literature across relevant fields, we build upon the concept of academic capitalism but extend it. We identify four interconnected pillars of what we term "capitalist academia": commodification of knowledge, publish-or-perish logic and competitization, social homogenization, and entrenched hierarchies. These structural features lead to a prioritization of individual competition over collaborative problem-solving, favor incremental research over transformative inquiry, and systematically exclude diverse perspectives essential for addressing complex socio-ecological challenges. Our analysis reveals how these structures of knowledge production not only fail to contribute meaningfully to societal transformation but actively contribute to reproducing the very systems that perpetuate ecological and social crises.

We propose replacing these problematic pillars with four alternative principles—the "4Ds": Dialogue, Decommodification, Diversification, and Democratisation. This framework represents a pathway toward emancipatory academia that can meaningfully engage with socio-ecological transformation challenges while preserving scientific integrity. We also provide examples of existing initiatives and ideas where principles of the 4Ds are already in place, demonstrating practical pathways for reform and critically reflect on the adaptability of the current system of knowledge production. This research contributes to ongoing debates about academic reform while offering concrete directions for aligning higher education with

sustainability imperatives and building the consensus needed for emancipatory socio-ecological transformation.

Keywords: socio-ecological transformation, academic capitalism, scientific knowledge production, competitization, science scepticism

Author Summary

We are living through multiple interconnected crises—climate change, rising inequality, democratic instability, and declining trust in science—that require urgent and fundamental changes in how our societies operate. Universities should be at the forefront of developing solutions to these challenges, yet we found that the current academic system is actually hindering rather than helping this crucial work. Our research reveals how universities have been transformed by market-driven reforms and competitive pressures that prioritize individual achievement over collaborative problem-solving. We identified four key problems with today's academic system: the treatment of knowledge as a commodity to be sold, intense competition between researchers that discourages cooperation, lack of diversity in perspectives and backgrounds, and rigid hierarchies that silence important voices. These problems prevent universities from engaging meaningfully with the challenges facing society. We propose four alternative principles—Dialogue, Decommmodification, Diversification, and Democratisation—that could transform universities into genuine partners in addressing global crises. Our work also highlights existing initiatives where these principles are already being put into practice, showing that change is possible. By restructuring how universities operate, we can help restore public trust in science and create the collaborative research needed to navigate our current crises and build a more sustainable and equitable future.

Table of Content

1. Introduction.....	1
2. Concepts: Socio-Ecological Transformation (SET) and Capitalist Academia.....	3
2.1. <i>Multiple Crisis and Emancipatory SET.....</i>	<i>3</i>
2.2. <i>Capitalist Academia: Beyond the Managerial Turn and Commercialization of Universities.....</i>	<i>6</i>
3. Cornerstones of Capitalist Academia and the Implications for Knowledge Production.....	8
3.1. <i>Publish or Perish and Competitization.....</i>	<i>9</i>
3.2. <i>Commodification and Managerial Turn.....</i>	<i>13</i>
3.3. <i>Social Homogenization.....</i>	<i>16</i>
3.4. <i>Hierarchical Structures and Capitalist Academic Culture.....</i>	<i>20</i>
4. 4Ds for a Critical Academia that Can Support Transformation.....	24
4.1. <i>Dialogue.....</i>	<i>26</i>
4.2. <i>Decommodification.....</i>	<i>28</i>
4.3. <i>Diversity.....</i>	<i>30</i>
4.4. <i>Democratization.....</i>	<i>32</i>
5. Challenges for the 4Ds.....	34
6. Conclusion.....	36
Acknowledgements.....	37
Literature.....	38

1. Introduction

Over the past decades Europe has witnessed multiple crises that caused major disruptions of social, economic and political structures. Particularly, the consequences of the climate crisis are increasingly becoming apparent, necessitating fundamental transformations within current Western societies. Because recent research shows that decoupling environmental degradation and economic growth is unlikely to occur at a pace or extent sufficient to address the climate crisis (Haberl et al. 2020), profound societal changes will be necessary within a rather short period of time in order to mitigate the negative impacts of global warming and biodiversity loss. Which is why authors such as Blühdorn (2022; 2020) argue that societies as a whole are currently in a time of “great transformation” (ibid, p. 32), that encompasses structural, cultural and societal change.

Against this backdrop there is a growing number of scholars that demand that science should actively engage in supporting this transformation process (see for example Stein 2024; Shrivastava et al. 2024; Diana et al. 2024). At this critical juncture, however, academia and science are experiencing a war on science with authoritarian forces censoring scientific knowledge production (e.g. Lewallen 2024; Taylor 2022). There is a point to be made that these consequences with respect to science scepticism are partly self-inflicted – while higher education institutions experience an external threat, the disembedded ivory-tower-eske nature of academia inhibits meaningful engagement with societies and societal struggles. Academia's demise in reputation and relevance must be understood as one symptom of the current system of scientific knowledge production often discussed under the label of academic capitalism (Münch 2014; Jessop 2018; O’Brady et al. 2025): structural changes within the academic system act as barriers to a modus of knowledge production and societal engagement that can meaningfully contribute to the resolution of societal struggles

while at the same time preserving scientific integrity. Meta-perspectives on replication, relevance, responsibility and accountability of science have been a long-debated issue particularly in science and technology studies and have gained even more attention against the backdrop of recent developments of science scepticism. However, while these meta-perspectives provide fruitful insights in the epistemic structures of science and problematic path dependencies in this respect, the framework conditions, institutional structures and not least working conditions of scientific knowledge production are rarely at the spotlight of research. As is the case in other contributions analysing academia's contribution to further socio-economic transformations: Stein (2024) emphasises the need of universities to engage in sustainability efforts in order to maintain relevance with regard to climate change as a wicked problem. Diana et al. (2024) and Shrivastava et al. (2024) call for more inter- and transdisciplinarity in training and scientific inquiry to confer to the resolution of interconnected poly-crisis. On an institutional level, Musselin (2018) emphasises the ever-evolving dynamics with regard to competition in academia resulting in an increasing competitization in the field. Fleming (2021) in his widely received book meticulously scrutinises the neoliberalisation of the higher education sector and its consequences for staff and students.

Our paper enriches these debates and fills a gap in the literature by examining why the current university science system and its inherently competitive evaluation mechanisms are in many areas unsuitable to play a supportive role in the transformation towards sustainable societies, and why they provide the wrong (economic) incentives for transformative research. Specifically, our contribution argues that current university systems, that are the result of neoliberal restructuring and historically patriarchal logics, provide inadequate conditions for critical societal transformation research and have negative implications on innovative knowledge production. Most importantly, this contribution focuses on the structure of knowledge production – that we term

capitalist academia – as well as on the knowledge that is being produced. Thus, we aim to combine these insights gained and interpret them as interlinked phenomena and observations of capitalist academia, ill-equipped to meet the challenges of socio-ecological transformation. Yet, once we have identified the structures, we can also sketch a way forward for the academic system. We propose to overcome the current pillars, that are commodification, the publish-or-perish-logic, social homogenization and hierarchies, with the 4Ds: Decommodification, Dialogue, Diversification and Democratisation. The 4Ds not only signify a change in current research agendas but more fundamentally, a change in the current structures – an emancipatory academia.

2. Concepts: Socio-Ecological Transformation (SET) and Capitalist Academia

2.1. Multiple Crisis and Emancipatory SET

One of the most significant societal challenges of the 21st century is the need for socio-ecological transformation. This transformation entails the reorganization of socio-economic structures and institutions to align with the planet's ecological limits and social justice imperatives (Wiedmann et al. 2020; Steffen et al. 2018). The concept of SET entails the restructuring of prevailing socio-economic frameworks and institutions in a manner that is compatible with social and ecological boundaries. However, the complexity of socio-ecological transformation is attributable to the intertwinement of multiple processes including path dependencies, long-term consequences, power asymmetries in political contexts, and normative foundations that span social, ecological, and economic dimensions. Accordingly, SET is understood as a future-oriented process that has not yet been fully realized. It unfolds along specific path dependencies, shaped in part by existing frameworks of knowledge production. Moreover, SET influences society as a whole and extends

across all domains of social life. Regarding the directedness of SET we emphasize its emancipatory potential.

The urgency of this transformation is underscored by the existential threats posed by e.g. rapidly advancing climate change, extensive biodiversity loss but also a rise in inequality and poverty, the rise of military conflicts and not least a rising distrust in democratic representation. While these threats are widely acknowledged in academic and political debates, potential pathways for SET are heavily disputed (Brand et al. 2021; Wilgosh et al. 2022; Kallis et al. 2024; Gräbner-Radkowsch et al. 2025) and more recently even more openly confronted with criticism rooted in tech-authoritarianism or neo-fascism (Jones-Katz 2025). Hence, we witness a convergence of multiple crises – ecological, social, political, and epistemological. These crises are deeply interconnected, creating a feedback loop that amplifies their individual and collective impacts. The socio-ecological crisis is perhaps the most pressing. However, this crisis takes place in an environment of science-scepticism and post-truth that challenge the very foundations of knowledge production and societal trust (Friedman 2023; Naepi et al. 2025). The post-truth crisis, which is characterized by the erosion of trust in expert knowledge and the proliferation of misinformation, undermines the societal consensus needed to address the socio-ecological challenges effectively.

The attacks against critical research agendas and disciplines, researchers and academic institutions can be observed worldwide and have led to curtails in funding, censorship and cuts in research programs. Yet, the post-truth crisis is both a symptom and a cause of the broader inability of academia and science production to adequately address the multiple crises facing society. On the one hand, not least due to the highly competitive conditions for academic knowledge production during the era of managerial turn, academia has often fallen short in providing the critical frameworks and actionable solutions required to navigate these challenges.

On the other hand, the post-truth crisis has been exacerbated by deliberate attacks on academia and scientific institutions, particularly by authoritarian and fascist governments and political movements. These alliances have sought to delegitimize critical scholarship and curtail academic freedom (Friedman 2023). By undermining the credibility of science and fostering anti-intellectualism, these forces have deepened societal divisions and hindered collective action on socio-ecological issues.

To sum up, addressing the socio-ecological crisis requires an emancipatory transformation that goes beyond technical solutions and incremental reforms. SET requires a holistic approach that integrates ecological, social, and economic dimensions while addressing the epistemological and political challenges posed by the post-truth crisis. Such a transformation must confront the structural and ideological underpinnings of the economic and societal system, including the dominance of neoliberal economic paradigms in academic governance. Particularly, the social sciences must play a central role in this process by providing critical reflection and by developing alternative frameworks that prioritize ecological sustainability, social equity, and collective well-being.

Moreover, an emancipatory SET must actively resist the forces that perpetuate the post-truth crisis. This includes defending academic freedom, fostering public trust in science, and promoting critical literacy to counter misinformation. This depends on frameworks and conditions for academic knowledge production that allow researchers to engage more deeply with issues related to SET. Only by addressing the epistemological and political dimensions of the crisis in an environment of emancipatory academia, society can build the consensus and solidarity needed to navigate the complexities of SET.

2.2. Capitalist Academia: Beyond the Managerial Turn and Commercialization of Universities

The higher education sector, similar to other social sectors, has undergone considerable reforms in the last decades. Based on neoliberal criticism of the lack of “effectiveness,” “productivity,” and “efficiency” of state universities, the managerial turn and the New Public Management (NPM) logic have transformed university's self-understanding from a state educational institution to a competitive enterprise (e.g. Fleming 2021; Broucker and de Wit 2017; Wiener et al. 2020). The term “academic capitalism” has been utilized by several authors (e.g. Münch 2014; Jessop 2018, 20; O’Brady et al. 2025; Slaughter and Rhoades 2004) to describe the structures and implications of the increasing economization of the academic system and universities. In the transformation of knowledge from a public good into a private or club good (Jessop 2018) the dominance of the “economic logic of capital accumulation” (9, p. 254) is characteristic. Consequently, a managerial shift has occurred, characterized by the adoption of profitability and capital accumulation as guiding principles. The growing influence of capital within the academic system has led to increased dependencies and demands from private actors, whose interests are increasingly supported by scientific research, such as pharmaceutical companies purchasing research to legitimize their products. The influence of private actors has become progressively more apparent and direct through capital flows, which significantly impact the determination of research agendas (Hackett 2014). Despite widespread discussions on the implications of these developments, such as underinvestment in high-risk, non-mainstream research leading to a “restriction of the evolution of knowledge” (9, p. 254), the broader context often appears overlooked. Specifically, the role of

entrepreneurial universities and academic capitalism in sustaining the capitalist system is somewhat underappreciated in these discussions.

We employ the term 'capitalist academia' to highlight this perspective, as it extends beyond the concept of academic capitalism. By reproducing hegemonic knowledge, science contributes to the stabilisation and legitimisation of social inequalities and reproduction of existing power relations (e.g. Latour 1994 and others). Power structures shaping knowledge production results in a bias towards the status quo. At the same time, the ideological impact on science (see, for example, Feyerabend 1998) and the value-ladenness of scientific inquiry are undisputed (see, for example, Crasnow 2013). Feminist philosophers of science, for instance advocate for the acknowledgement of the influence of values and ideology on science, emphasising the necessity for reflection and critical evaluation. In this context, 'objectivity' is not interpreted as equivalent to truth; rather, it is conceived as the attainment of a minimal consensus through a social process that is characterised by the necessary presence of a multitude of experiences and perspectives (Longino 1990; Anderson 2004). Historical and contemporary academia lacks diversity in experiences and views. Traditionally dominated by male, white voices, academic structures were developed in ways that reflect and reinforce Eurocentric and male perspectives and expectations. At the same time, the way we think about reason and knowledge is influenced by patriarchal and colonist views (Gumbo et al. 2024; Schiebinger 1987; Lloyd 1993). Adopting this approach, the preceding developments – namely, the processes of commodification, neoliberalisation, metrisation, and hyper-specialisation – can be comprehended as originating from an academic system established by a small group, whose hegemonic logics are closely aligned with the principles of capitalism. One particularly noteworthy example in this context is the discipline of economics. Economics stands out for its marked lack of diversity and resulting homogeneity of perspectives (Hager and

Pühringer 2025). Concurrently, the position of power it resumes in societal processes and its performative impact (Maesse et al. 2022), render it of particular significance in discourses of socio-ecological transformation. The economic mainstream is characterised by a steadfast commitment to fundamental assumptions such as economic growth, private property, competitiveness, efficiency, methodological individualism, and local non-saturation of consumption preferences. This steadfast has far-reaching implications for climate policy and the broader efforts to combat the climate crisis, with current measures being inadequate (see Klein 2014). As demonstrated by Nelson (2015), this modesty in climate measures is once again associated with the concept of masculinity as it is currently understood within the field of economics. This attest, however, does not only hold for economics. All disciplines exhibit problems with the 'leaky pipeline', whereby the proportion of women and minority groups decreases at higher career stages. This means that diverse perspectives and lived experiences are scarce everywhere.

Consequently, the influence of capitalist academia is not merely a response to capitalist logics, but it also functions to reinforce these very same logics. Emancipatory SET poses a significant threat to capitalism, and as such, science and research should not have the capacity to meaningfully contribute to its realisation. In what follows we lay out four central cornerstones of capitalist academia: publish or perish, commodification, social homogenization and hierarchies.

3. Cornerstones of Capitalist Academia and the Implications for Knowledge Production

3.1. Publish or Perish and Competitization

Over the last decades scientific knowledge production has been increasingly standardized, particularly regarding the form of its output. Publications in international academic journals have become the gold standard of researchers as well as higher education institutions (HEI) in capitalist academia. Although standardization of publication output was a lengthy process, not least the precarious working conditions for particularly younger researchers, provide strong incentives to continually increase the number of publications. Situated in a constant competitive relation, researchers therefore are forced to orient their research ambitions towards these formats, often in a rival environment of “publish or perish” (Harzing 2011).

While competition of ideas and concepts as well as the competition for academic prestige between researchers and HEI is not new, capitalist academia has intensified this development particularly through three main channels: quantified evaluation methods and technologies, competitive subjectification of researchers and mainstreamization and projectification of knowledge production.

Quantified Evaluation Methods and Technologies

The requirements of competitively organized HEI to evaluate and compare individual researchers in the neoliberal era of New Public Management has led to the invention and application of standardized bibliometric evaluation methods (Broucker and de Wit 2017). The Science Citation Index (SCI) and the Journal Impact Factor, developed already in the 1960s by Eugene Garfield, as well as the expansion of the Web of Science database, enabled the first systematic measurement of scientific output through quantified evaluation methods and technologies (QEMT), i.e. citation and impact scores, ultimately leading to what has been described as the “metric tide” (Wilsdon et

al. 2015; Muller 2018). Although these metrics were conceptualized in the 1960s and 1970s, it was the digitization of publishing platforms and associated bibliometric data that rendered QEMTs an easily accessible resource for the competition-driven organization of quality control and, consequently, stratification dynamics in capitalist academia. Furthermore, archives and platforms such as Web of Science, Scopus, and Google Scholar, along with the introduction of the Hirsch Index (Hirsch 2005), have intensified competitive relationships among academic institutions and individual scholars. Despite various critiques concerning the validity, significance, and (interdisciplinary) comparability of specific QEMTs (Espeland and Sauder 2016; Brankovic et al. 2018; Hammarfelt et al. 2017), numerous ranking systems and ranking institutions, such as the Shanghai Ranking or the THE ranking, have emerged since the 2000s, exerting a performative influence on the evaluation of scientific quality (Musselin 2018; Krücken 2021; Pühringer et al. 2025). Generally, the rise of the “metric tide” in academia has led to a globally standardized stratification scheme for academic institutions and researchers alike and institutionalized competition among universities and scholars (Carson et al. 2013; Allmer 2024).

Hyper-Competition and Competitive Subjectification of Researchers

There are many different types of competition in academia at different scales and for different actors (Musselin 2018; Krücken 2021; Osório and Bornmann 2022). Competition occurs at individual (scholars compete for grants, jobs, positions in committees, positions in journals, scores, visibility), institutional (universities compete for students, grants, high positions in rankings, visibility) and national (nations compete for knowledge hubs) levels, which gives rise for an “academic competition ecology” (Pühringer and Wolfmayr 2025). On the level of individual researchers, the competitions can be divided into those that are primarily concerned with financial aspects (jobs, grants) and those that are primarily concerned with questions of academic prestige

(publications, prizes, grants, metrics, ranking positions, visibility). There is a complex relationship between the two types of competition: competitions for financial aspects are often decided based on competitions for academic prestige, for example when the number of publications or high metrics are decisive for the appointment of high positions (e.g. Wiener et al. 2020; Gornitzka and Maassen 2017; Söderlund 2020). Apart from the fact that high positions themselves go hand in hand with high academic prestige; this is the case when prizes and publication opportunities are primarily accessible to scholars with high academic prestige.

Particularly young researchers, who were socialized in an environment of an academic competition ecology, in many cases are no longer able or willing to reflect upon the structural features of knowledge production in capitalist academia and thus are confronted with competitive subjectification. First, permanent or tenured positions have become increasingly scarce across many countries (Janger et al. 2022; OECD 2021). Second, the organization of job applications and hearings and third-party funding allocation normalizes competitive relations and the competitive evaluation of others as well as the self-evaluation of researchers. Third, QEMTs and newly evolving academic social networking platforms such as GoogleScholar or ResearchGate contributed to a self-understanding of individualized and isolated academic entrepreneurs (Pühringer and Wolfmayr 2025; Francke and Hammarfelt 2023).

In all, the performative impact of the hyper-competitive structure of knowledge production in capitalist academia and the constant pressure to improve one's individual metrics, bears several negative implications for scientific knowledge production in general, but particularly for SET-related research. On the one hand, the intense competitive pressure on individual researchers fosters incentives for strategic publication practices (Seeber et al. 2019), citation cartels, and, in some cases, violations of research ethics, manifesting, e.g. in the practice to publish the “least-

publishable unit” or in the replication crisis observed in the social sciences (Page et al. 2021; Freese and Peterson 2017; Shrout and Rodgers 2018). While these practices aggravate SET-related research, there are also several indications of gendered effects of hyper-competition. Nielsen (2021) shows that men still control the definitions of what journals are important, while van der Weijden and Calero-Medina (2014) report that men’s and women’s citational networks do not overlap as much as the ideal of gender neutral science would suggest.

Mainstreamization and Projectification of Knowledge Production

The competition-driven orientation of capitalist academia is furthermore closely linked to projectification (Cointe 2021; Felt 2017) of research activities and knowledge production. The growing significance of project-based research through competitive third-party funding over recent years has led to shorter planning horizons, thereby limiting the time horizon of many research projects and their associated research questions. Despite the presence of innovative project formats, particularly in highly competitive excellence funding schemes, interdisciplinary or high-risk research programs that diverge from mainstream academic trends tend to be systematically disadvantaged. Park et al. (2023) and Lane et al. (2022) demonstrate that over the past decades, radically innovative and disruptive research has declined, while incremental research has gained prominence. While this can be seen as a threat for scientific progress in general, it is particularly alarming given the inherent necessity of SET-related research to transgress traditional research foci and disciplinary borders.

Implications

The competitization processes present in capitalist academia and the associated publish-or-perish logic create an environment of rivalry that is not conducive to risky and future-oriented research.

The constant evaluation leads to uniformity in output that is specialized rather than innovative and relies on sheer quantity over quality. The persistent threat of being overtaken by competitors incentivizes strategic behaviour that maximizes output and reputation. In capitalist academia, projectification signifies a short planning horizon and discourages research aimed at longer time frames. This environment also encourages the production of knowledge that is mainstream-oriented rather than critical, which would be needed for SET research.

3.2. Commodification and Managerial Turn

Commodification of knowledge production in HEI is closely linked to the “managerial turn” and the adoption of New Public Management in university administration as outlined in section 2. Capitalist academia intensified the commodification of scientific knowledge production by restructuring the governance of HEI, by increasing the financial pressure on HEI due to its stronger dependency on competitive third-party funding and the direct influence of non-academic actors on HEI. Furthermore, capitalist academia has opened up new profit opportunities for private economic actors e.g. in the academic publishing market.

The Governance of the Entrepreneurial University

On a discursive level, key terms such as “internationalization,” “excellence,” and “knowledge society,” align with the ideological currents of neoliberalism, neo-institutionalism, and managerialism. The “managerial turn” has also been interpreted as a further economization (Berman 2014) and commercialization of knowledge production, accompanied by greater financial and administrative autonomy for universities from public funding or the government. With this

autonomy, the increasing international orientation, and the benchmarking of universities and knowledge clusters, universities have been discursively framed as engines of economic growth (Söderlund 2020), reinforcing the competitive logic of the higher education system at the meso level of academic institutions. Yet, this seemingly financial autonomy associated with NPM-oriented reforms is likely to increase external control of research and thus threatens academic autonomy (Enders et al. 2015). Consequently, this new understanding of HEI affirmatively self-labelled as “entrepreneurial university” has severe implications regarding the commodification of science. Audretsch (2014) stresses the evolution from universities since the managerial turn, where universities are no longer simply entrepreneurial universities but also take the role of enablers of an entrepreneurial society on a more general level, which is well in line with our understanding of capitalist academia. Financial autonomy and the increased competitive relation between HEI to acquire funding has led to a restructuring of governance structures based on metric indicators and scoresheets, with several negative effects. There is now a strong incentive to target knowledge creation towards commercially useful “products”.

Third-Party Funding and Industry Collaborations

While the funding of HEI by private firms, foundations and wealthy individuals has a long tradition in the US university system, the transition from purely publicly funded universities to more financially autonomous universities can also be observed in Europe and is not least evidenced by the strong increase in the share of third-party funding in the overall budgets. An even more straightforward consequence of the commodification of knowledge creation in capitalist academia was the increasing collaboration between HEI and private firms; this takes the form of contracted research, the funding of dissertation positions or endowed professorships but also on the larger scale of strategic partnerships or the funding of new study programs directed at meeting the

requirements of firms or branches (Halffman and Radder 2015; Radder 2012). This closer collaboration with economic interest groups is particularly strong in the fields of medicine and technical sciences but has also grown in other disciplines and has increased dependency of third-party funding in these fields. Therefore, capitalist academia provides a fruitful environment for economic interests in capitalism, but in turn aggravates critical research in the field of SET, which inherently conflicts with the profit maximization logic in capitalism.

Publishing as a Lucrative Business for Private Firms

However, capitalist academia does not only aggravate emancipatory critical research agendas, it has also opened up new profit opportunities for private economic interests. One illustrious example for a commodification and commercialization of public knowledge can be found in the rapidly expanding field of private science publishing companies and its very high profit rates. The increasing pressure to publish to improve one's publication metrics and a problematic incentive structure for researchers (e.g. to provide reviews for free) has led to a strong rise of journal publications. Since these "knowledge products" are mainly publicly financed, publishing companies can make use of their oligopolistic power position in the market for a very lucrative new business model (Pühringer et al. 2021; Knoche 2020; Trueblood et al. 2025). Hence, a small number of publishers use their power as oligopolists in the publishing market, their role as gatekeepers for journal publications and the inherent logics of capitalist academia to commodify the public good of knowledge.

Implications

To sum up, the commodification of knowledge production in capitalist academia operates on multiple levels. The established economic logic of efficiency, productivity and knowledge accounting pushes a merely output and ends-oriented understanding of knowledge production. As

Fleming (2021) drastically points out these neoliberal reforms have resulted in what he calls “dark academia”, marked by the prioritization of marketable research over genuine intellectual inquiry. This threatens basic research, research innovation aside disciplinary mainstreams as well as inter- and transdisciplinary research, which normally follows longer time cycles (Felt 2017; de Rijcke et al. 2016). At the same time, commodification of HEI in an era of NPM has intensified pecuniary interests in the field of knowledge production. Furthermore, the governance structure of entrepreneurial universities comes with various devices of control in an indicator regime of score sheets and knowledge balance sheets and thus “suffocates the originality and variety of research achievements in a growing machinery of control.” (Münch 2014) If the objectives of research are increasingly driven by an interest in its economic usability and university structures have to be geared towards this, this has a number of negative implications for both the generation of knowledge and the social relevance of research (Enders et al. 2015). These implications range from a higher level of secrecy opposing open science initiatives, a marginalization of research programs and disciplines not meeting commercial interests, to moral concerns e.g. in the field of biomedical patents to an erosion of public trust in science in general (Radder 2012). Consequently the trends of commodification of knowledge production are in severe conflict with the needs of research in the field of SET outlined above.

3.3. Social Homogenization

The current dynamics of knowledge production risk deepening existing social inequalities, leading to an increasingly homogeneous research workforce. While higher education - particularly university positions - has always been highly selective, often disadvantaging women, individuals

from lower socioeconomic backgrounds, and ethnic minorities, studies suggest that capitalist academia intensifies these exclusionary mechanisms (Münch 2014; Stansbury and Schultz 2023). Despite the institutionalization of gender mainstreaming and diversity management over recent decades, social inequalities persist and even expand due to the structural nature of capitalist academia itself.

Capitalist academia reinforces social inequality through three key mechanisms: precarious employment, international mobility requirements, and narrow definitions of academic excellence.

Precarious Employment and Social Stratification

The increasing projectification of research, intensified competition, and widespread reliance on fixed-term contracts contribute to social stratification within academia. These conditions place significant psychological burdens on researchers while amplifying the importance of economic, cultural, and social capital in determining career success (Bourdieu 1983; Rogge 2015). Those from socioeconomically disadvantaged backgrounds, individuals with caregiving responsibilities, and those with limited geographical mobility face disproportionate barriers due to financial insecurity and the instability of temporary contracts (Leendertz 2022). Albayrak-Aydemir and Gleibs (2023) further highlight that researchers from marginalized groups experience heightened vulnerability in precarious academic employment due to their limited ability to absorb financial risks.

Mobility as a Structural Barrier

The increasing emphasis on international mobility in academic careers has created further inequalities. In smaller national scientific communities, expectations for global visibility and mobility have grown dramatically (e.g., restrictions on in-house promotions in Germany). As Shin

et al. (81, p. 18) note, factors such as a country's economic and political power, geographic location, dominant culture, higher education system, and academic language influence approaches to internationalization. However, mobility requirements disproportionately impact researchers with caregiving responsibilities, particularly women (Fritsch 2016). Academic career progression often coincides with key life stages, such as starting a family, making it difficult to relocate nationally or internationally. These structural demands create additional barriers for those unable to move freely, reinforcing gender disparities within academia.

The Gendered Concept of Excellence

The definition and measurement of 'excellence' in academia are inherently gendered. Institutions often operate under the assumption of an ideal academic worker—one who is unencumbered by caregiving responsibilities. The concept of the "care ceiling" reflects how performance evaluation systems favour scholars without familial obligations, assuming an uninterrupted, full-time commitment to research (Lynch et al. 2020; Lynch 2010; Grummell and Lynch 2016). Academic careers require sustained research output, including grant acquisition, publications, and doctoral supervision. Consequently, extended career breaks can negatively impact research productivity (Bailyn 2003), creating a "publication penalty" for mothers (Morgan et al. 2021). The pressure to conform to the ideal worker norm leads some women to continue academic work during maternity leave or to delay parental leave until the final moments before childbirth (Lupu 2021; Huppertz et al. 2019). Institutional evaluation practices further reinforce gender disparities. Studies show that selection committees often apply gendered criteria when assessing scientific excellence, unconsciously favouring male candidates (Cacace 2009). Androcentric understandings of excellence mean that criteria for measuring academic achievement have been developed within existing gendered power relations, making seemingly 'objective' outcomes actually reproduce

existing inequalities (Hofbauer and Kreissl 2023). Women are frequently positioned as the 'other' in academic excellence frameworks, and recent research indicates that the COVID-19 pandemic has exacerbated these preexisting gender inequalities (Directorate-General for Research and Innovation (European Commission) 2023). Blair-Loy and Cech (2022) reveals how academia's – specifically STEMs – commitment to meritocracy, a concept closely linked to excellence, paradoxically perpetuates inequality by systematically undervaluing contributions from underrepresented groups despite equal productivity.

Implications

Already Münch emphasized that academic capitalism drifts towards “closure” (2014, 256) as these dynamics contribute to a growing social homogenisation and loss in diversity. This comes with particularly serious consequences, as the nature of the questions, perspectives, and interpretations of results – even when methodologically rigorously controlled and guided – are also structured by one's own background of experience. Bourdieu referred to this phenomena as "scholastic epistemocentrism" that acts like a "barrier" to thinking. Epistemocentrism consists of "ignoring everything that the analyst, due to the fact that he is external to the object, observes it from a distance and from above, projects into his perception of this object" (Bourdieu and Wacquant 1996). Similarly, Haraway (1988) pointed to the “situated knowledge” as she emphasises that all knowledge is embodied – it comes from particular bodies with specific experiences, locations, and perspectives. The practical implications of epistemocentrism are far reaching as it creates a knowledge bias to the disadvantage of underrepresented groups. But it is not only about which topics or issues are covered, it is also about the theories and explanations that are developed to make sense of reality which impact reality itself.

3.4. Hierarchical Structures and Capitalist Academic Culture

Academic Culture: Communicative Practices and Peer Supervision

Regardless of how academia is actually oriented and which interests it follows – “science has never been ‘autonomous’” (Halfman and Radder 2015) – the narrative of free thought is present in academia and has implications for culture. Since the days of Enlightenment, it has been imperative for universities and academia to act as places of academic freedom without fear of repercussions - even if the ideas put forward are controversial or contrary to current thinking (Keashly 2019; Twale and Luca 2008). Although current developments in the United States and New Zealand for example, attest that academia is not safe from censorship, historically tenured academic staff acted as leaders and arbiters in the production of knowledge. The principle of shared governance gives them additional power vis-à-vis administration/management. In this realm of decision-making, too, freedom of thought and a certain 'insubordinate' attitude, framed as 'speaking truth to power', are required. An attitude that is hardly accepted in other fields of work (E. D. Nelson and Lambert 2001). In general, discursive practices are characterised by argumentation, debate, disagreement and dissent. This can potentially encourage agonistic aggression between scholars and generally 'rough and tumble' rules of engagement that open the way for derogatory behaviour and workplace bullying (Sternberg 2015; Tannen 2002). And, of course, academic hierarchies with respect to tenure directly influence who holds the power to criticise (Keller 2024). Because tenured staff should not be constrained from the top down, it has developed its own regulatory mechanism. Through the 'power of peers', academics are seen as a self-regulating profession, which should also enable them to shape their own working environment (Scott 2014; Keashly and Neuman 2013; DW Deutsch 2025). However, this process is not always as collaborative and constructive as envisaged: on the one hand, it gives academic staff extensive power to silence other ideas or

members, often affecting already marginalised groups (e.g. women, racial/ethnic minorities, LGBTQI+, disabled people) (Saloojee 2014); on the other hand, it creates an environment in which one tends not to question the behaviour of others, lest one become the victim of criticism (Crouch 2016; Keashly and Neuman 2010); a kind of "live and let live". But, when peer regulation does not work, the ways of sanctioning academic behaviour and misconduct are quite limited (Hüther and Krücken 2012).

External Pressures and Neo-Feudalism

Thus, academia has always been structured quite hierarchically. Dependencies between doctorate students and early career researchers respectively and professors have always been present and part of the scientific working environment. However, this hierarchical environment becomes toxic when confronted with external pressures (Pelletier et al. 2019). These are posited by the rise of anti-intellectualism (e.g. Jaschik 2018), or general developments in and features of capitalist academia as outlined above, such as the commodification of knowledge, the decline in government funding for universities (e.g. Felt 2017), the managerial turn (e.g. Münch 2014), and a competitization of academia (e.g. Musselin 2018). The expansion of fixed-term contracts compared to tenure-track positions again exacerbates the situation (Diskurs. Das Wissenschaftsnetz. Tilmann Reitz 2023). Universities in the German-speaking region are particularly affected by this problem, where around 80% of university staff are on fixed-term contracts. At the same time, they are still largely shaped by the model of traditional "Ordinarien-Universitäten" with a strong hierarchical organizational structure. German sociologist Tilman Reitz (2023) speaks of "Verhofung" and the "disciplining function" of modern universities. In many areas, universities are characterized by problematic coexistence of a neo-feudal hierarchical

logic with neoliberal flexibilization and precarization. They thus combine the worst of both worlds and hardly form a good breeding ground for critical and future-oriented transformative research. With competitization, the credo was introduced that performance pays off and that it is important to perform. Van Dyk and Reitz (2017) argue, however, that this is a misconception: in an environment in which single researchers are the most visible, it is not about performance, but about success (Leendertz 2022). And success can, ambivalently enough, often be achieved without performance - 'Don't confuse success with excellence' (Burns 2016). This is especially true for established researchers. Neo-feudalism establishes an enforced status competition among professors, the costs of which are externalised - at least in part - through the practical servitude of 'dependent employees'. The competitive pressure can then easily be passed on downwards (Dyk and Reitz 2017).

Mental Health, Harassment and Bullying

This status-competition also reinforces dependencies, as the associated famous name represents a competitive advantage. This idolisation affects why bullying or sexual harassment is often not sanctioned. Institutions fear for their best researchers (Woolston 2022). This assertion also holds true for fields such as Science and Technology Studies, which are actively engaged in the study of knowledge production. The strong hierarchical orientation, coupled with a focus on prestige, promotes exclusionary and harassing practices (Schwarz 2023). Harassment policies are therefore primarily designed to protect institutions rather than victims (DW Deutsch 2025; Simmonds 2014). Previous research suggests that sexual harassment is highly prevalent in US academia, with a rate of 58%, second only to the military's 69%, and exceeding rates found in industry and government (Ilies et al. 2003). The same holds for bullying: Approximately 40% of individuals report having observed or heard about bullying incidents involving others. This figure is significantly higher

compared to the general workplace, where studies in the United States indicate that 10-14% of the working population has experienced bullying in the past year (Keashly 2015; Else 2018). Again, marginalised groups are particularly vulnerable - women of colour experience particularly high levels of harassment, as do individuals from sexual and gender minority groups (Simmonds 2014; Witze 2018; Rosenthal et al. 2016). In the field of economics, the Economics Job Market Rumors Forum is a notable example of this phenomenon, where derogatory and sexualised language was used to describe female economists, in contrast to the language used for their male counterparts (Wu 2018).

The hierarchical structures and general research culture particularly with an intensification in competitive formats in academia have led to a severe mental health crisis (Hall 2023). A worldwide survey by Evans et al. (2018) constituting the largest survey of its type at that time found that 41% of participants reported moderate to severe anxiety, and 39% experienced moderate to severe depression. These rates are six times higher than those found in the general population. The data also pointed to potential causes of these mental health issues, with anxiety and depression frequently linked to poor work-life balance and inadequate mentor relationships. Because reputation is so important in science, especially for being able to stay in academia, the pressures of competition are tremendous.

Implications

It is evident that researchers experiencing depression or burnout are ill-equipped to undertake research, let alone critical research. Even in the absence of mental illness, the often unwelcoming and highly competitive environment is not conducive to high-quality research (Abbott 2020), hindering the development of emancipatory SET. The discrimination of marginalised groups, coupled with the self-reinforcing mechanisms of strong hierarchies that favour researchers who

share the same beliefs and social status, reinforces systemic inequalities, as outlined in Chapter 3.3. Consequently, current institutional structures provide limited support to produce innovative knowledge that diverges from the mainstream, hindering the shift of ideas that would be necessary for SET research.

4. 4Ds for a Critical Academia that Can Support Transformation

In sum, modern capitalist academia does not provide a fertile framework for critical research on societal transformation. Instead, interdisciplinarity, innovation, and research outside the mainstream, pluralism of perspectives and long-term research agendas are rather hindered than promoted. Yet emancipatory SET also necessitates a wholly distinct set of characteristics for the production of scientific knowledge that we term *emancipatory academia*. Generally, emancipatory academia must be interdisciplinary, with the capacity to assimilate existing knowledge into new combinations and to accommodate the complexity of the world. This renders it inherently innovative and creative, as opposed to being geared towards marketability. Competitive logics must be replaced with cooperative ones. It is crucial to recognise that knowledge production must foster unconventional thinking, given the uncharted and uncertain nature of SET. This necessitates a diverse array of perspectives and experiences, facilitating the comprehension and promotion of a myriad of ideas. Given the far-reaching implications of SET for all facets of society, scientific knowledge production must be firmly embedded within society through robust connections facilitated by teaching and comprehensive science communication. This ensures scientific knowledge production becomes democratic and aligned with societal needs. Emancipatory

academia is a critical academia that is better suited to support transformation research to cope with the current poly-crisis. In the following sections we introduce and describe four requirements or as we subsequently label it the four Ds of emancipatory academia: Dialogue, Decommodification, Diversity and Democratization (see Figure 1) and provide several practical examples of positive recent developments in these fields. After that we critically reflect on the feasibility and shape of such an academic transformation.

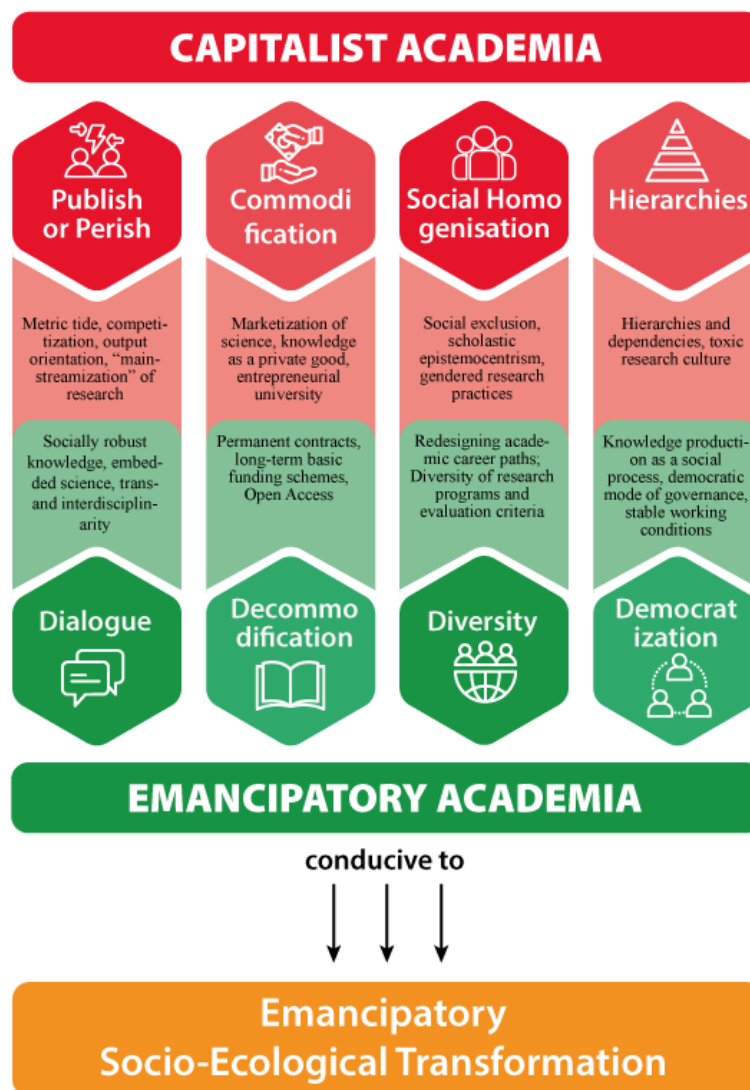


Figure 1 Cornerstones of Capitalist and Emancipatory Academia

4.1. Dialogue

Sociologist Michael Burawoy argues that contemporary capitalism's "third wave marketisation" (2007, 339) has intensified the appropriation of both labour and natural resources, contributing to our current poly-crisis and threatening the foundations of social and natural existence (p. 352). This context necessitates, as Burawoy argues, an academic response that actively supports transformative social efforts and requires that researchers and academic institutions engage with society and the public in ways that are not driven by logics of commodification and metrisation. Burawoy's concept of "organic public sociology" (2005, 350) offers a compelling framework for such engagement, emphasizing direct cooperation between researchers and local publics including trade unions, neighbourhood associations, civil society organizations, and equal treatment institutions. Unlike media-dependent public science that typically reaches only privileged audiences through dominant channels, organic public science engages with "publics that are narrower, local, visible, thick, active and often counter to the mainstream" (2008, 355). Aulenbacher et al. (2017) point out that for a transformative discourse to succeed, it must also be possible to enter into an exchange with subaltern groups and counter-publics via forms of organic public science.

Nowotny, Scott, and Gibbons' (2013) analysis of the transformation in scientific knowledge production provides a complementary theoretical framework. They argue that the traditional boundaries between society and science have become increasingly porous, catalyzing a fundamental shift from Mode 1 research – characterized by disciplinary isolation and academic autonomy – toward Mode 2 knowledge production that is transdisciplinary, context-dependent, and socially accountable ("socially robust knowledge"). Central to their argument is the conviction

that scientific solutions improve when there is a dialogue with society (Gibbons and Nowotny 2001). This also includes an openness towards different forms of knowledge traditions which they view not as a dilution of scientific rigor but as a crucial mechanism for innovating and revitalizing existing forms of knowledge through exposure to alternative ways of understanding complex problems.

The essence of this concept of dialogue lies in fostering genuine exchange and mutual learning between science and society, positioning citizens as active contributors to science' knowledge production public mission rather than passive recipients of knowledge (Halfman and Radder 2015). Realizing this vision requires making knowledge more accessible through open access publishing, public lectures, workshops, and other mechanisms that embody Halfmann and Radder's notion of "knowledge commons." Such practices enable universities to fulfil their transformative potential by building meaningful partnerships with the communities they serve.

An academia embedded in society is crucial but so is dialogue within academia. An essential, and perhaps the most obvious, aspect for overcoming the challenges posed by SET is interdisciplinary research. Governments and funding agencies increasingly emphasise and reward interdisciplinary research and HEI react to the calls for more interdisciplinarity by setting up relevant departments. Although, the innovativeness of research is not solely secured by interdisciplinarity (Barry et al. 2008) the multi-faceted nature of SET renders research confined to disciplinary boundaries tunnel visioned. Shrivastava et al. (2024) underscore that the true potential of the wealth of scientific knowledge is not being realized because of isolated disciplinary approaches and Diana et al. (2024) propose that interdisciplinary training should already start at the doctorate level. For interdisciplinary dialogue to be fruitful, structures and institutions that provide space for it need to

be established. Interdisciplinary journals and rethinking conference formats to enable greater participation are a start (Corneyllie et al. 2025) .

4.2. Decommodification

The second layer of emancipatory academia - decommodification - involves a refocus on an understanding of science and research output as a public good. Recently the opposition to the projectification and commercialization of research can be seen in protests against major publishers like Elsevier (University of Berkeley) and Springer and more radical suggestions of a socialization of private publishers (Pühringer et al. 2021; Knoche 2020). On a more general level the open science movement and initiatives such as Arxiv or more radical approaches for Open Science such as Sci-Hub are examples of efforts to make scientific knowledge freely accessible. In a similar vein Halfmann and Radder (2015) suggest an understanding of universities as providers of knowledge commons, free and accessible know-how and knowledge for everyone. These initiatives aim to refocus universities away from the “sale” of research products and towards establishing critical thinking.

The second change regarding decommodification involves the de-precarization of employment contracts. Different forms of protests, social media campaigns such as the German #ichbinHanna and the foundation of local initiatives against precarious working conditions and particularly the high share of fixed-term contracts in Germany and Austria (Janger et al. 2022) have gained public and political attention in the last years. Proponents of these movements have also suggested alternative models of sustainable employment structures (Kuhnt et al. 2024). In the UK, precarious working conditions, mass-layoffs of and pension cuts for university employees have led to a

massive strike wave at UK universities, mainly directed against the rigid governance logic of neoliberal universities (Fleming 2021; Fox-Hodess et al. 2023; Burrell et al. 2024). The problem and not least the economic implications of a brain drain and a loss in innovative capacities associated with decreasing motivations of young researchers have even raised awareness among the OECD (2021) and the EU-Commission. Particularly the EU has published guidelines to diversify academic career paths and make them more planable, as well as allocated funds to improve working conditions and combat mental health issues (Heidt 2023). Moreover, several studies indicate that high quality research requires good working conditions and that reducing the precarity of academic research careers is essential for fostering a stable and productive research environment (Abbott 2020; Rahal et al. 2023).

A third change involves a different understanding of universities, transforming them from profit-driven enterprises into organisations that serve the public interest, not least against the backdrop of the post-truth crisis. This includes initiatives for responsible science and research metrics, such as the DORA declaration, the Leiden manifesto, and more recently the CoARA initiative of the EU Commission. Specific initiatives also promote responsible editorship platforms like the Platform for Responsible Editorial Policies (PREP). While these initiatives also urge for changes in research assessment, this is often associated with a broader call for an expansion of quality criteria for science and societal responsibility of science, i.e. the inclusion of teaching and knowledge transfer. The CoARA initiative, e.g., promotes the valuation of collaboration, mentorship, public engagement, and applied research – dimensions often marginalized in traditional evaluation systems. Buckton et al. (2025) call for a rethinking of evaluation more generally in light of socio-ecological transformations. Eventually, there have also been movements against the metric tide, such as protests against and withdrawal from university rankings by

institutions like the University of Utrecht and the University of Zurich, where the University of Utrecht has been on the forefront to foster research integrity; its Vice Rector of Research stated that “we have witnessed science turning into a metric based system in which the interests and needs of society have largely been pushed out of the picture”. (Utrecht University 2024)

4.3. Diversity

To facilitate research that can contribute to emancipatory SET, academia must become more open (Münch 2014), particularly by enhancing diversity and plurality.

From a gender perspective, some progress has been made. As Ferree and Zippel (2015) argue, political struggles have yielded important advances in gender equality within universities. Recent decades have seen the implementation of numerous reforms, particularly within the European Union, aimed at addressing gendered biases in evaluation processes and introducing formal or informal quotas and benchmarks for inclusion in academic positions (140, p. 566). However, many of these reforms align with the neoliberal turn toward managerialism and performance metrics, that predominantly benefit already advantaged groups—especially white, privileged women. The “economic case for diversity” (Elomäki 2015) exemplifies this trend, as it frames equality as valuable primarily when it enhances institutional efficiency and profitability. Feminist scholars have critiqued this instrumental logic, arguing that it undermines the transformative potential of feminist interventions by subordinating them to market-oriented rationales.

Consequently, structural changes within academic institutions are required to effectively challenge entrenched privileges. Genuine institutional change requires confronting the deeper power

structures and production of hegemonic knowledge. These need to address two interconnected dimensions. First, greater diversity in knowledge production is needed – encompassing methods, theoretical approaches, and interdisciplinarity – to challenge dominant paradigms and promote innovative inquiry. The current orientation toward the maximization of economic, cultural, and symbolic capital incentivizes adherence to established norms and discourages unorthodox or interdisciplinary approaches. The configuration of academic publishing systems further reinforces this tendency by rewarding specialization and discouraging complex, cross-disciplinary research. Embracing diverse epistemologies can expose implicit assumptions, challenge hegemonic knowledge structures, and stimulate more socially responsive and comprehensive forms of research. Plurality also addresses epistemic exclusion by legitimizing multiple ways of knowing. In doing so, science becomes more innovative, equitable, and attuned to the complexities it seeks to address – an essential condition for realizing the emancipatory SET.

Second, the pluralisation of academic identities requires rethinking traditional definitions of academic excellence, recognizing diverse contributions and career trajectories. An important initiative in this regard is, again, the CoARA initiative, committed to reforming the processes through which research, researchers, and institutions are evaluated. One of its primary aims is to redesign and diversify academic career paths and criteria for excellence, recognizing the diversity of academic identities and contributions. Through dedicated working groups, CoARA develops alternative evaluation criteria to reduce systemic biases and supports the implementation of context-specific tools, such as the Finnish Career Assessment Matrix, tailored to national academic systems.

4.4. Democratization

The presence of pronounced hierarchical structures within academic institutions poses a significant challenge to the pursuit of meaningful, transformative research. This challenge arises from the exacerbation of mainstream bias, the diminution of diverse voices and perspectives, and the creation of an environment that is generally hostile. The consequences of these issues can include mental health problems and the facilitation of behavioural misconduct. Consequently, to facilitate research that can contribute to emancipatory SET, it is imperative to substantially mitigate the hierarchical organisation of universities and enable a cultural shift. To this end, three measures are necessary:

First, knowledge production must be seen as a social process to mitigate the idolisation of individual researchers and the undue sanctification of their contributions. Although big scientific associations are becoming more aware of academic behaviour and the use of code of conducts is becoming more widespread, a cultural shift is necessary that involves a defection of an Enlightenment-inspired paradigm of knowledge production. This paradigm is characterised by stereotypically masculine traits such as independence, rationality, isolation, and the capacity for self-generated ideas and an autonomous thought process. Haraway has previously emphasised that knowledge production is a social process necessitating an "ongoing critical interpretation among 'fields' of interpreters and decoders" (1988, 590). Consequently, it cannot be undertaken in isolation, and it is not justifiable to single out individual researchers. In this respect, Gatto et al. (2024) also make use of the term emancipatory academia to describe a (re)humanisation of academia via practices of inclusion, empathy and connection.

A second measure requires a re-organization of the mode of governance of universities. At present, tenured faculty and professors are the only individuals whose voices are given weight, and they are also overrepresented among the democratic university bodies, such as senates. Halffman and Radder (2015) consider the democratisation of university governance to be the *conditio sine qua non* (176). In German-speaking countries, the equal involvement of students, academic staff and faculty is a long-standing tradition, exemplified by the "Drittelparität" principle, which was in effect during the 1970s, 1980s and 1990s, before being abolished in 2002 in Austria and for a shorter period in Germany (Ash 2023). A potential solution to facilitate genuine decision-making of all university members would be to transition to faculty models, wherein staff decisions are not subject to the sole judgment of a single individual. The faculty models proposed by interest groups that are against precarious working conditions in Germany represent a starting point in this direction (Kuhnt et al. 2024).

A third measure addresses external pressures such as insecure employment conditions and an overly competitive environment, given that these factors can lead to an increase in personal dependencies. In the pursuit of a democratic transformation within the domain of HEI, it is imperative that individuals possess a long-term outlook, thereby enabling them to articulate their visions for a better university. The establishment of stable working conditions is, therefore, an essential component in the democratisation of universities.

5. Challenges for the 4Ds

With the proposition of the 4Ds and an emancipatory academia naturally the question of its implementation arises. We have shown that efforts to change academia already exist; however, these efforts are most often concentrated on one of the 4Ds. The cornerstones of capitalist academia, however, did not develop independently from each other, but rather depict processes that are intertwined and depend mutually on each other. Thus, changing just one of these logics or cornerstones will likely result in the appropriation of otherwise positive ideas by the logics of capitalist academia. In this respect Mirowski (2018) gives an appealing account of how the open science movement can be understood as “an artifact of the current neoliberal regime of science” (172), by rationalizing the research process via the technology of the internet. To give another example, calls for a deeper engagement with publics via science transfer activities are quickly accommodated within competitive university logics by metricising science communication efforts, therefore potentially exerting even more pressure on individual researchers. Similarly, diminishing the use of competitive formats without questioning hierarchical decision-making structures can have detrimental effects on diversity efforts. Thus, for a meaningful transformation of academia all 4Ds must be implemented to exhibit beneficial synergies and be able to develop their full potential (see Figure 1). This of course offers a bleak outlook on measures and ideas that are already at place. We would argue that the decisive question and judgement about their impact must be made with respect to the underlying structures. Do the measures actually change the way academic knowledge is produced? With this in mind it becomes apparent that most ideas are rather small “upgrades” within the current system.

In the academic landscape there exist several initiatives that try to implement all the 4Ds. These initiatives can for the most part be described as activist. The Movement for a free Academia for

example is a transnational initiative instigated by researchers from the Nordic countries. They published the Gothenburg manifesto that calls for “for a free academia grounded in an ethics of care, integrity, and trust” (Free Acad. 2024). Similarly, the Netzwerk Gute Arbeitsbedingungen in Germany as well as the Netzwerk Unterbau Wissenschaft in Austria fight the precarious working conditions and deficiencies in academia more generally. Their webpages feature concrete reform suggestions that combine a strong commitment to democratic universities, dialogue with non-academic actors, and a critical attitude toward the commodification of science. Those bottom-up initiatives are fruitful as well – the mentioned initiatives report that ministers of science are open to the propositions brought forward and several dialogue processes have been started (Skovgaard 2024). Others try to bring their ideas into the academic discourse: Halffmann and Radders (2015) manifesto is part of that, as is Hawkins and Kerns (2024) survival guide for academia. Another example is the Leadership for the Ecozoic research project or the movement for “slow science” with its manifesto for slow science (Stengers 2018; Frith 2020).

But of course, also these initiatives are reaching the limits by being situated in a system of a capitalist mode of production that goes hand in hand with budgetary limits for alternative approaches. And although our argument here is that we need a different academia to help a different society into being, it probably is more of a simultaneous process. A university of the 21st century that is equipped for the great challenges of the future must therefore not only assume the societal responsibility of science but should also actively position itself against the growth compulsion of capitalist accumulation in order to create space for innovative and transformative knowledge generation.

6. Conclusion

In sum, the current academic system, deeply rooted in the logics of capitalist academia, fails to provide the structural conditions necessary for transformative research that can adequately address mutually dependent and escalating socio-ecological crises. The commodification of knowledge, hyper-competition, precarious working conditions, and hierarchical governance structures create significant barriers to the kind of interdisciplinary, innovative, and long-term research required for socio-ecological transformations. Instead, the system prioritizes market-driven outputs and economic incentives that are fundamentally misaligned with the goals of ecological sustainability, social equity, and collective well-being. These dynamics not only hinder the production of critical knowledge but also perpetuate existing social inequalities and reinforce hegemonic power structures within academia on many levels. Eventually they are also deeply connected to the growth paradigm and profit logic of capitalism in general.

To counter these challenges, we propose the framework of the “4Ds” - Decommodification, Democratization, Diversity, and Dialogue - as cornerstones for an emancipatory academia. Decommodification entails reclaiming knowledge as a public common good and addressing the precarious working conditions, which undermine academic freedom, predictable and transparent career perspectives and creativity. Democratization calls for dismantling hierarchical structures and fostering inclusive decision-making processes within universities. Diversity emphasizes the need for pluralism in perspectives, methods, and academic identities to challenge dominant paradigms and foster innovative research. Finally, Dialogue underscores the importance of embedding academia within society and research across disciplines, enabling mutual learning processes and fostering socially responsive and responsible research. However, these principles

must be implemented collectively, as isolated reforms risk being co-opted by the very logics they seek to challenge. While the realization of an emancipatory academia may ultimately require broader societal transformations beyond capitalism, the 4Ds provide a critical starting point for reimagining a proactive role of universities in supporting SET. Yet, against the background of the contemporary severe post-truth crisis of academic knowledge production such a plea for emancipatory academia can even be seen as an act of self-resistance to fight for academic freedom in general.

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