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DISCUSSION PAPER

Moving Citational Justice from the Print Age into the Artificial Intelligence Age

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This paper examines the evolution of academic citation practices from print into digital contexts. While standardised citation styles only became widespread in the mid-twentieth century, the digital era has raised new questions about credibility, authority, and the recognition of diverse sources. Contemporary shifts—including the rise of alternative scholarly outputs, decolonisation movements, and artificial intelligence—have highlighted various forms of citational injustice and misbehaviours, prompting corrective interventions. While these approaches represent progress, they often remain narrowly focused and lack a broader theoretical orientation capable of driving multi-level systemic change in the context of developing technologies such as artificial intelligence, which are being used by some scholars as research tools. This paper serves as a foundation for developing a new citational justice framework in future research. Working towards improved citational justice is not only about recognising, acknowledging, and combating citational and epistemic injustice but also about rethinking the academic culture of research communications in digital citation contexts. Collective action and sustained structural transformation are needed to reshape digital citation practices towards more equitable and transparent paradigms of knowledge production in the rapidly changing digital publishing landscape.

Keywords: epistemic justice theory; citational justice; citational politics; academic culture; globalisation; digital publishing

Introduction

Citational justice can be considered an equity, diversity, and inclusion (EDI) initiative that needs both theorisation and practical actions for future improvements in the context of changing digital environments that impact citational practices. Citational justice is "the fair and equitable citation of works," which involves citing a range of scholars regardless of their backgrounds and locations, countering the trend to cite scholars from dominant groups (Dadze-Arthur and Mangai 2024, 327). Various forms of citational injustice or citational misbehaviour include those noted by Samuel V. Bruton, Alicia L. Macchione, Mitch Brown, and Mohammad Hosseini in their review of literature on unethical citation practices (2024, 330–31). These include "coercive citations"—when peer reviewers or journal editors require authors to cite works from the same journal or their work; "citation cartels"—collusion networks that aim to increase citation metrics; and "citation padding"—"citing prestigious but irrelevant articles" or citing sources that the author has not read based on the abstract (Bruton et al. 2024, 330). Based on their study of citation norms and behaviours among academic researchers across disciplines, Bruton et al. (2024) identify three broader categories of citation behaviour:

- Neglectful citation—an author copy-pastes citations from another source (such as Wikipedia or OpenAI) without checking them (also referred to as "citation misprints" by Simkin and Roychowdhury [2012]);
- Strategic citation—an author diverts reviewers away from a relevant subfield through questionable citations to make their work appear more original; and
- Blind citation—an author who ignores gender or race and may cite scholars who have been accused of sexual harassment, gender, racial, or other forms of oppression.

Other forms of citational injustice include citational erasure—plagiarising others' ideas/works without citation and claiming them as one's own (Smith 2022)—and honorary authorship, where individuals are listed as authors on manuscripts, grant proposals, or other works that they did not contribute research effort into (Fong and Wilhite 2017, 3) and are subsequently cited, thus receiving credit where credit is not due. Honorary authorship can also be coercive authorship (Tang 2025), where the writer of the manuscript is required to list a superior on the work due to direct pressure or coercion, which can negatively impact the recognition of early career researchers' contributions. These collective examples are an epistemic justice issue within the broader academic culture of knowledge dissemination or sharing.[1]

Citational justice is needed not only for marginalised persons/groups, but also for different modalities of expressing ways of knowing. In 2025, most academic scholarship still relies on text-based modalities; as Charles Bazerman stated in 1988, "knowledge produced by the academy is cast primarily in written language" (18). However, there are many new modalities that are considered rigorous outputs, such as open-access digital datasets, new software, policy documents, creative productions, community engagement exhibitions, and others. As digital technologies continue to evolve, the sources we cite and the way we cite them also need to evolve. As citational justice and initiatives like the Declaration on Research Assessment (DORA) are gaining wider implementation, there is an academic cultural shift that is beginning to recognise other communication modalities as academic outputs equivalent in rigour attributed to text-based outputs. Artificial intelligence (AI) has also given rise to a series of questions regarding the credibility and citation of sources. I argue that working towards improved citational justice is not only about recognising, acknowledging, and combating epistemic and testimonial injustice (Fricker 2017), but also about rethinking the academic culture of research communications in digital citation contexts.

This paper focuses on highlighting the digital context of academic citation practices as part of the ongoing development of a multi-level theoretical framework towards citational justice. First, the current academic culture is contextualised through a literature review of evolving Western scholarly communication styles and citation practices from the print age into the digital age, the latter characterised by citation tracking, metrics, and networks that contribute to citational and epistemic injustice. Next, the paper provides an overview of corrective citational movements that seek to address citational injustices and highlights that the scholarly community still lacks a complete theory of citation. There is a lack of a citational theory to assist scholars in approaching new citational justice initiatives or actions using either a collective or more localised approach. Furthermore, scholars are increasingly using a variety of automated digital tools as part of their citational practices, which create new possibilities for citational injustices and malpractices to occur. Future research and considerations are needed regarding the development of large language models (LLMs) in the form of AI chatbots and their implications for citational justice. Based on the current academic digital landscape, it is argued that a theoretical framework towards citational justice across academic cultures could be developed in future work to support collective and focused actions at different implementation levels to achieve a paradigm shift that has lasting impact.

Background: Western Scholarly Citational Practices from the Print Age into the Digital Age

Written texts published in journals or books, historically and to this day, "serv[e] as the definitive form of a claim or argument, following on earlier printed claims and leading to future claims" (Bazerman 1988, 18). These written texts state claims or arguments that can be cited in future works. The early practices of citation evolved from what were essentially written academic debates or scientific tests among only a few writers to more formal and systemised citation practices to ensure clarity and accuracy in identifying the original source texts. Current Western citation practices have developed from the conventions of academic publications in the sciences. The first scientific journal published in English, *Philosophical Transactions*, was founded in 1665 (Bazerman 1988, 63). Scientific experiments and a comparatively small cohort of scientists developed the standardised format of the scientific article (Bazerman 1988, 59), which now persists across multiple disciplines. The genre evolved from "uncontested reports of events" (c. 1665–1700) to experimental articles debating results (c. 1700–60) to articles with a focus on "the meaning of unusual events through discovery accounts" (c. 1760–80) and later "experimental articles offer[ing] claims and experimental proofs" (c. 1790–1800) (Bazerman 1988, 78). Bazerman's (1988, 82–84) thorough content analysis of the *Philosophical Transactions* journal shows how Isaac Newton made linguistic and rhetorical choices that influenced the book and article format of contemporary scholarly communication. For example, after being

[1] *Academic culture* is applied in this paper as an umbrella term to encompass the various factors contributing to the current challenges in citational justice. These factors include disciplinary norms, national/regional customs (e.g., hegemonic "Western" cultural practices), academic associations, and academic publishing conventions.

challenged by other scientists in written critiques of and responses to his published work, Newton published responses in *Philosophical Transactions* and "heavily cross-reference[d] his previous statements, using them as an articulated, coherent system" (Bazerman 1988, 117). In other words, Newton engaged in self-citation to reiterate and clarify his points, instigating a shift in scholarly communication from not only acknowledging one's intellectual predecessors but also asserting one's own original contributions to scholarship. In this case, Newton did not have anything to gain from self-citation other than to build, reiterate, or clarify his arguments by referring to what he had already written. Prior to digital citation tracking and metrics, self-citation was not controversial, nor was it—as this paper will discuss later—considered a citational misbehaviour for the purpose of artificially inflating one's citational metrics.

The digital revolution in publishing led to the development of multiple academic search engines, such as Google Scholar, Semantic Scholar, Scopus, and many others, which also track gross citation counts and provide h-indexes. Launched in 2004, Google Scholar's slogan, "standing on the shoulders of giants," recalls a shift in citational practices that began several centuries before.[2] The expression "standing on the shoulders of giants" once referred to modern scholars' indebtedness to the ancients, but in the late seventeenth century it came to refer to "recognition of one's near contemporaries" (Bazerman 1988, 139). In the nineteenth century, "modern citation practices started to develop," which went beyond recognising one's debt to previous thinkers and served to create a "codified network of the literature" (Bazerman 1988, 139). With digital publishing and academic search engines, this codified network is both easier to track and map, but it has also led to citational misbehaviours by those who focus on quantitative citational metrics. Historically, the qualification and expertise (or ethos) of the academic/scientist/scholar gave them the credibility to present their results in written form, but later, persuasion became the primary mode of validating results through detailed descriptions of each experiment, including the proper procedure that specified all the conditions and indicated how the "procedure answers potential objections" (Bazerman 1988, 141). Thus, the shift in scientific focus to persuasion and validating research methods/results through third-person descriptions prevailed, and standardised citation practices emerged along with the proliferation and democratisation of digital academic publishing across many disciplines.

One of the earliest standardised citation styles in English-speaking academic publications is the Harvard system, credited to Edward Laurens Mark at Harvard University, who published a paper in 1881 using parenthetic author-year citations accompanied by an explanatory footnote (Chernin 1988, 1062). Looking at other widely used citation styles chronologically, *The Chicago Manual of Style* was first published as a book titled *Manual of Style: Being a Compilation of the Typographical Rules in Force at the University of Chicago Press* in 1906. It was based on the style sheet pamphlet developed by the press's proofreading staff, who had to decipher handwritten texts and edit them for consistency (University of Chicago 2024). The American Psychological Association's (APA) style was first published as six and a half pages of "Instructions in Regard to Preparation of Manuscript" in the February 1929 *Psychological Bulletin* (Bazerman 1988, 261). In 1952, the APA *Publication Manual* became sixty-one pages that aimed to improve the quality of psychological literature, to act as the standard (Bazerman 1988, 262), and it subsequently created a stabilised rhetoric allowing for efficient communication with little flexibility or free invention (Bazerman 1988, 271). Similarly, the Modern Language Association (2025) developed a three-page style sheet for their journal, *PMLA*, in 1931 with the intention for the style to become universally used in the field of modern languages and literatures. As a final example, the first edition of the editorial manual for the American Medical Association's (AMA) scientific journals was sixty-eight pages and published in 1962 to serve in-house staff and secondarily authors (American Medical Association 2025). Since the publication of these standardised citation manuals, they have become widely adopted within associated disciplines by many academic journals and are required as part of the assessment criteria by many universities for student assignments. These citation styles have had rhetorical impacts on the respective genres of manuscripts because the style contributes to the disciplinary-specific persuasiveness, as Bazerman (1988) notes about APA style. These widely applied citation styles were developed based on printing presses and publishers for their own purposes in the twentieth century.

In the twenty-first century, digital publishing took these formalised citation styles into the next phase of academic culture, which began focusing on quantifying citations. As the importance of citing—and more specifically of being cited as a measure of scholarly impact—increased, so too did the number of scholarly works being published. To be cited more, scholars had to publish more. Recent studies on bibliometrics have shown that the number of authors has increased substantially, often due to team-based science practices, and that these multi-authored works gain more citations than single-authored works across disciplines (Barabási and Wang 2021). With this, the use of *et al.,* the Latin phrase meaning

[2] Ironically, Google Scholar's slogan has been attributed to Newton's writing, but is not cited on the Google Scholar founders' blog post in their adoption of the phrase (Verstak and Acharya 2024).

"and others" (specified differently in each standardised citation style) has also increased to shorten in-text citations with multiple authors. As Martin Jakab, Eva Kittl, and Tobias Kiesslich (2024) show in a case study on the biomedical sciences, authorship has increased to eleven or more authors, and they argue that this trend increases the potential for unethical practices such as authorship inflation (and citation as a by-product), which needs to be questioned and further considered going forward. Jakab, Kittl, and Kiesslich outline practices "against authorship proliferation" that have been proposed or implemented: Authorship should be listed in alphabetical order, distinctions should be made between authors and contributors, pre-writing authorship agreements should be drafted, corporate names can be used for group authorship, credit systems can define different authorial contributions, and author contribution statements could be more ubiquitous (2024, 1321–22).

The increasing number of printed academic publications also gave rise to the phrase "publish or perish" in academic culture. There is non-documented attribution of the phrase "publish or perish" to Archibald Cary Coolidge (1866–1928), the first director of Harvard University Library, who was a strong advocate for research output (Moosa 2024). The first documented use of the phrase was traced to Logan Wilson's 1942 book, *The Academic Man: A Study in the Sociology of a Profession,* in which he examined the increasing pressure on academics in American universities to publish and how output became a central measure of professional success (Moosa 2024, 5). As part of a digital turn in tracking the quantity of citations, Anne-Wil Harzing (2016) developed the "Publish or Perish" software, which retrieves and analyses academic citations from a variety of data sources to summarise citation metrics. Citation metrics have since been examined in numerous studies of scientometrics, infometrics, and bibliometrics, and they are being tracked by some through their unique personal identifying number for scholars via ORCID. For example, on the topic of self-citation practices, Alberto Baccini and Eugenio Petrovich (2023) examined fifty countries and found that self-citation practices may reflect "aggressive science policies" with incentives for citations in those countries, which impacts the citational behaviours of researchers. Xinyuan Zhang, Qing Xie, and Min Song (2021) trained a neural network to examine twenty-four factors that may influence citation counts across four selected disciplines and found that novelty is more influential compared to bibliometric and academic networks. Thus, the more recent emphasis on quantitative citation metrics, after it was documented by Wilson in 1942 (Moosa 2024, 4), created new issues with citational justice that persist in digital publishing and affect academic viewpoints on credibility and notoriety. As technology develops, new citational malpractices are emerging and need to be considered in future movements towards correction and improved/best practices.

Progress to Date: Corrective Citational Practice Movements and Citational Metrics

As a result of issues highlighted with the culture of publish-or-perish-driven citational metrics, more attention is being paid to "corrective citation" practices (Pereira 2024) in response to citational misbehaviours. Considering the range of citational issues, Maria do Mar Pereira acknowledges that scholars are calling for critical citation practices (e.g., decolonising citation and diversifying canons), and she describes these movements as "corrective citation practices" (2024, 1180). Other terms in the literature have included "conscientious," "ethical," "decolonising," "radical," "feminist," and "anti-racist" citation, each of which Pereira categorises as a corrective citational approach since they are grounded in the idea that there is a problem or errors (in attribution, omission, erasure, marginalisation, etc.) in citation practices that need to be fixed (2024, 1182). For example, on the topic of gender disparity, Nicole Holzhauser (2021) notes that since 1931 mostly male scholars, often those with socially powerful positions (e.g., journal editors or board members), have been canonised while women have largely been excluded. In one movement to correct this, the *UM Citation Guide* (Carlier et al. 2021) aids researchers across disciplines in making more thoughtful and equitable citation choices to increase citations of female authors. Carlier et al. (2022) note that "it is important to pay attention to whom we cite, especially, as there is increasing evidence that women, people of colour, and other minoritised groups are systematically under cited." Looking at quantified academic impacts, Eamon Duede's (2022) study shows that citation metrics influence scholars' perceptions of the work and that highly cited papers are more influential, particularly where citation counts are in the high hundreds and thousands. This high citation factor was shown to be more influential in the arts and humanities compared to life/physical/health/social sciences and engineering and technology (Duede 2022). Highly cited papers tend to be found earlier in the research process and are given more attention while lesser cited papers are perceived to be of lower quality, are found later in the research process, and are read at a surface level (Duede 2022). There are also metric biases based on language and region, as Shannon Mason and Margare Merga (2021) note. Top journals are largely determined by the number of citations the articles garner and tend to be based in English-speaking countries such as the United States, United Kingdom, and Australia. To prompt

more diversity of viewpoints and voices in academia, Mason and Merga (2021) suggest that researchers try to cite works beyond those in the top-ranked journals (i.e., lower impact does not mean lower quality), from diverse contexts (e.g. step outside your "national containers"), and in languages other than English. They also encourage the provision of clear details about the research context so that global readers can fully understand the generalisabilty of the work (Mason and Merga 2021).

However, citational issues are not clear-cut problems that can be fixed with a single umbrella-level approach; they require contextualisation and situational nuance. Pereira (2024, 1184) argues that "structures of inequality are *multidimensional* and *intersectional,* and therefore those we cite are likely to be *both* marginal *and* privileged" and "positionality and power are always *contingent* and *relative*" in the sense that whether one is considered privileged or marginal depends on where they are, who they are interacting with, or who they are being compared to. Pereira (2024, 1184) thus calls for "alternative political grammars that acknowledge that power in academia is more complicated than familiar binaries – dominant/marginal, cited/erased, insider/outsider, reproducing/resisting." Her rationale for this is that academic positions are inherently unequal, providing different status and access to resources, and are contingent on local micro-politics of the situated encounters between people (Pereira 2024, 1185). Power relations are even more complex when considering local versus global marginality/dominance, and even carefully considered corrective citations can enact or enable injustice outside the texts (Pereira 2024, 1185). Pereira (2024) demonstrates how a blanket approach to corrective citation can result in further injustices in different contexts and unseen power dynamics. Ultimately, Pereira (2024, 1196) does not offer a single solution, but encourages us to ask more questions about power and citation, recognise the opacity of contexts we cannot see as peer reviewers or conference audience members, and be "more attuned to everyone's entanglements in complex relations of power and less quick to assume that power is always and only 'over there.'" Although there may not be one correct way to approach corrective citation, progress has been made in raising awareness of the need for more equitable citation practices in fields such as anthropology, data science, and human-computer interaction (HCI).

For example, a leading feminist and anti-racist citational movement arose out of Christen A. Smith's (2022, 206) personal experience at a conference where another scholar paraphrased her work without citation. Smith initiated the Cite Black Women (2018) campaign in 2017 when she sold customised T-shirts at a National Women's Studies Association meeting, which highlighted widely shared experiences of citational erasure. Subsequently, Smith and Dominique Garrett-Scott (2021, 30) analysed citational metrics to measure Black women's citation rates in five high-impact anthropology journals in the United States as a case study and found that Black women are underrepresented in citations (0.87 percent) relative to their representation in the field (2.6 percent). Another female scholar of colour, Mwenza Blell (2023), a biosocial medical anthropologist, has written about her experience navigating citational politics. Blell (2023, 211) had read and cited texts published in the Global South but was instructed by senior colleagues to focus on "famous names and top journals." While writing her thesis, Blell (2023, 212) thought that she was "standing on the shoulders of giants" but began to question why all the famous names, or "giants," were White. Blell (2023, 214) explains that "the citation problem is not unique to anthropology nor does it only affect Black women. Non-Black people of colour, particularly Indigenous scholars and those based in institutions in the Global South, are treated as mules as well." Here she uses the metaphor of a mule as weight bearing, like the shoulders of a giant, but the mule is often viewed as a lesser-than "beas[t] of burden" (Blell 2023, 213). Blell (2023) raises the important action of decolonising bibliographies in educating future scholars, as well as de-emphasising the need to cite the most cited or most famous scholars and journals. This point is also made in the *UM Citation Guide* (Carlier et al. 2021, 7), which contains a preliminary list of resources for writers to consult to find articles written by women, and specifically by Black women, to give scholars a starting point to work from. A final example of a feminist approach to citational justice is Catherine D'Ignazio and Laurie F. Klein's book *Data Feminism* (2020), in which they aimed to include 75 percent citations from women/non-binary people and 75 percent from people of colour, which they referred to as "aspirational metrics." While their book ultimately resulted in 62 percent citations of women/non-binary works and 32 percent of people of colour, they note the context of their work being based in the US higher education system, which is still dominated by White men (D'Ignazio and Klein 2020, 221). These examples show the pervasiveness of a citational minoritisation of female and people of colour and some movements that have raised awareness and concerted efforts to increase citations for them.

In the field of HCI, Neha Kumar and Naveena Karusala (2021) argue that unjust citation practices can lead to epistemic injustice perpetuated through writing, reviewing, and conducting research. The Citational Justice Collective, Molina Léon, et al. (2021) discussed citational justice within their discipline at a workshop and used the group's name as the lead author of the contribution, followed by an alphabetical order of authors by first name (rather than the patriarchal order of surnames). The Citational Justice Collective,

de Castro Leal, et al. (2021) organised another workshop on the same topic for the X Latin American Conference on HCI to highlight the disparity between the number of citations of HCI conference papers in the Global North versus the Global South. They examined how Latin America, as a region rich in Indigenous heritage, can make room for Indigenous languages in HCI knowledge production that bridges cultural differences, epistemologies, methodologies, user experiences, and contexts of use with the Global North (Citational Justice Collective, de Castro Leal, et al. 2021, 2). These workshops represent collective concrete actions that encouraged immediate action for HCI conference paper publications.

However, constantly changing practices in digital publishing risk enabling new citational misbehaviours. In another example of a challenge in the HCI academic community, Jonas Oppenlaender (2025, 1) examined what he terms a "meso-level" decision that changed citation practices: the 2016 editorial policy change that permitted an unlimited number of references in articles. This change resulted in an annual increase in the mean number of references included in ACM CHI conference articles, and Oppenlaender (2025, 2) projects that if the implemented upwards citation count trend continues, it could result in an average of 130 citations per CHI paper at the 2030 conference. This decision emphasises quantity over quality or persuasion, and 130 citations is considerably high relative to the average length of CHI papers, which range from seven thousand to eight thousand words (CHI 2025). Oppenlaender (2025, 2) states, "Such a scenario poses practical challenges for authors and peer reviewers alike, straining the authors' capacity to meaningfully engage with the literature and the peer reviewers' capacity to thoroughly vet the cited literature during the peer review process."

Digital publishing platforms for preprints have also contributed to the rise in citations for the preprint and peer reviewed versions of the same CHI conference papers. Computer scientists, for example, often publish and cite preprint articles (i.e., published on websites such as arXiv, launched by Cornell University in 1991) (Oppenlaender 2025, 4). The citation of both preprints and subsequently peer-reviewed published papers affects citation metrics and can falsely increase an author's h-index or the perceived academic impact/value of the work if the same research gets cited in two different versions. Oppenlaender's (2025, 11–12) study highlights increases in seven key areas, including collaborative research, as evidenced through an increase in the mean number of authors per CHI article; systematic and unsystematic literature review papers; and the number of citations of "questionable" publishers (i.e., potentially predatory). Collectively these practices impact the CHI community, the field of HCI, and academia in general as the substantial growth in references risks creating a culture "where quantity overshadows meaningful discourse and genuine innovation" (Oppenlaender 2025, 12).

These HCI examples reiterate the issue with the academic culture of "publish or perish," which contributes to the increased number of publications that requires scholars to conduct more state of the art and systematic literature reviews. Some of these types of reviews risk inflating citation metrics and citing scholarship of poor quality published by predatory publishers, which can lower the overall quality of the scholarly contribution. These reviews should apply a corrective approach by identifying duplicate versions of a single work, citing the peer-reviewed publication (rather than a preprint or working paper), and avoiding citing sources that are considered of questionable quality by the respective academic communities. Another possible future corrective approach is proposed by Oppenlaender (2025, 14), who suggests that specialised language models could be trained to cite prior research publications, which could allow authors to focus on writing their own work instead of spending as much time researching and composing the related literature review. Literature reviews often duplicate efforts in more specialised disciplines because many scholars have similar baseline knowledge and do not need to be as situated in background material to comprehend the new contributions being published. Oppenlaender also suggests automating part of the peer review process by using LLMs to assess whether a contribution is original and if references are comprehensive so that human peer reviewers can focus on the creativity and findings/results of the work (2025, 14). This discipline-specific example highlights that the evolving landscape of digital academic publishing requires scholars to continually reconsider and revise their writing and corrective citation practices to avoid creating new malpractices.

Current Gap: A Missing Theory of Citation

The attainable literature reviewed for the writing of this paper includes studies focused on the production of science communications, from Newton's self-citations in print to underrepresentation of scholars of colour within anthropology, as well as issues on Global South versus Global North, and the quantity and quality of citations appearing in HCI publications. Science is referred to broadly, but as of 2025, many universities have separated faculties into sciences, social sciences, and arts and humanities. A notable gap in the existing literature on citational practices and working towards a theory of citation is the absence of an in-depth analysis, case study, or critical reflection on publications in the arts and humanities. For example, this gap

can be particularly challenging when scientometrics are used as key measurements of influence/impact for scholars in the arts and humanities because in some cases monographs, even if they are not highly cited, are considered more qualitatively impactful through their publication comparative to quantitative citational metrics. A theory of citation could help bridge the differences across merit-based systems that may create a divide between disciplines that emphasise scientometrics and those that may place higher value on other qualitative measures. The question for future research is: Since there is no overarching theory of citation, how can we proceed in analysing current citational practices across disciplines to affect systematic change towards citational justice within the context of a digitally driven academic culture?

Blaise Cronin (1984, 29) notes that "the absence of a satisfactory theory of citing in part explains why writers on the subject . . . often resort to a metaphor in an attempt to clarify what is not entirely self-evident." For example, he writes that "metaphorically speaking, citations are frozen footprints on the landscape of scholarly achievement; footprints which bear witness to the passage of ideas" (Cronin 1984, 25). The reasons why someone cites another work are varied and "there will invariably be a gap between why the author cited and why we *think* the author cited" (Cronin 1984, 30). For example, citations are used for functionalist reasons—"to provide supplementary evidence, to support or refute an hypothesis, to furnish historical context"; normative reasons—to give "credits (rewards) within the scholarly communication system and its constituent zones"; or for phenomenological reasons—based on the motivation of the author, who is shaped by social-psychological variables impacting their referencing behaviour (Cronin 1998, 46–47). Citational factors may also include the conventions of scholarly publishing (such as standardised citation manuals), social and psychological factors (e.g., personal/scholarly bias such as marginalising women or people of colour), extrinsic factors such as the target audiences' needs, scope, and article length (Cronin, 1984, 31), or country-specific policies as highlighted by Baccini and Petrovich (2023). Cronin (1984, 33) noted over forty years ago that it is difficult to remove all bias and subjectivity from citation behaviour and that "Artificial Intelligence (AI) research may ultimately make it unnecessary for authors themselves to decide where and what to cite in writing formal research papers." We have now reached a phase where AI could be a useful tool in enhancing citation practices; however, it can also lead to the development of new malpractices.

When considering how to develop a future theoretical framework for citational practices that traverses disciplines and accounts for the complexity of these various challenges, three existing approaches have been proposed. Cronin (1984) summarises (1) a sociological approach focusing on citational process as complex authorial choices, and (2) an information science approach focusing on enhancing the accuracy of information retrieval, while (3) Iman Tahamtan and Lutz Bornmann (2022) suggest a social systems theory approach focusing on the modes of communication links rather than the human choices involved. The sociological approach described by Cronin (1984, 35–36) seeks to better understand the citation process from a content analysis perspective, and the applied information science approach focuses on context studies to examine the inter-document relationship via citations and devise classifications/taxonomies based on the text surrounding the citation to enhance information retrieval. From a content perspective, citation is not a transparent activity, and readers are unaware of an author's motivations. Thus, Cronin (1984, 58) questions, "How is it that citation (a private process) can be accepted as science's principal accounting mechanism, upon which so much depends?" Since institutional norms and personal considerations are complicated, he argues that "to seek and expect to find a single, theoretically integrated and undimensional account of authors' citation behaviour may be . . . unrealistic" (Cronin 1984, 84). Or, in other words, a theoretical approach for best practices of desirable citational behaviour may be too complex to achieve. As Cronin highlights, many scholars have developed similar, yet different, classification schemas (1984, 39–45). For example, Susan Bonzi (1982, 211) proposes four categories of citation relevance ranging from: "(1) not specifically mentioned in text (e.g., 'Several studies have dealt with . . . .")"; "(2) barely mentioned"; "(3) one quotation or discussion of one point in text"; and "(4) two or more quotations or points discussed." Bonzi's categories also demonstrate that it is difficult to equate citation to influence of an author and/or their work.

Loet Leydesdorff (1998, 6) argues that although citation analysis has been a formative part of scientometrics (e.g., quantitative studies of scholarly literature), "a complete theory of citation is still lacking" and that Cronin's (1981) call for a theory of citation focuses on the perspective of information retrieval. Leydesdorff (1998, 6–7), like Bazerman (1988), notes that citations stem from early twentieth-century practices and thus a new theory of citation needs to be "a dynamic operation that allows for reduction of complexity in various contexts at the same time." Furthermore, while "scientometric indicators can be defined as formal methodologies, the citation process is social" (Leydesdorff 1998, 7). Citation networks are multi-dimensional because they are an "interaction between networks of authors and between networks of their communications" (Leydesdorff 1998, 9), which increases complexity that a future theory of citation must account for.

Tahamtan and Bornmann (2022, 2)[3] propose expanding Niklas Luhman's (2012) social systems theory into a social systems citation theory (SSCT) because it focuses on communications rather than the authors and their motives. According to social systems theory, information is selected, it is uttered (i.e., modality of communication), meaning is interpreted by the received, and it is either accepted or rejected (Tahamtan and Bornmann 2022, 7). Tahamtan and Bornmann's (2022) analysis of the applicability of SSCT focuses on communication transactions, individual disciplines, and "science communications," but a notable gap is that they do not specifically discuss transdisciplinary research, nor do they discuss arts and humanities citation processes in more detail. The key limitation with an SSCT approach is that it removes the individual and cultural contexts involved in authorial motivations and the social conventions or academic protocols (e.g., citation styles) that have mandated specific constraints. Therefore, this theory may be most applicable to analyses from a social science (e.g., scientometrics, bibliometrics) perspective by treating citations as communication entities separate from the humans that produced them. A systems approach, however, could perpetuate the current challenges that have arisen in systematic and hermeneutical citational injustices (e.g., race, gender, algorithmic biases, etc.).

Considerations on AI for Future Citational Practice Research and Progress

Emerging AI systems are already changing the way scholars research, write, and cite. For example, some AI chatbots are reinforcing existing biases by prioritising publications or citations from dominant/hegemonic cultural groups (e.g., White individuals, males, Western authors; see Shuford 2024) and neglecting other knowledge forms. There are also known use cases of AI chatbots generating false citations (misinformation), which writers may copy-paste as a form of neglectful citational malpractice. False AI-generated citations are sometimes referred to as the colloquial misnomer of "hallucinations" because AI does not have sensory perceptions (Maleki et al. 2024). Cronin (1984) and Oppenlaender (2025) question how useful and accurate a list of sources could be when generated by LLMs that have been specifically trained on peer-reviewed academic sources. Other questions include: Could LLMs generate an automated and concise literature review or state of the art summaries? For example, in rapidly developing scientific areas, scholars may struggle to comprehensively cover the relevant historical literature in the limited word counts allocated by many academic journals or conference proceedings collections, and perhaps future LLMs could assist with this synthesis through a scientifically valid method.

The ethical concerns and technological limitations of trained models (e.g., AI biases) compared to human understanding and selective decision-making would need to be factored in when developing new citational justice initiatives that involve employing LLMs and/or automation. As the number of AI platforms available on the mass market (e.g., BERT, ChatGPT, Claude, Gensim, DeepSeek, Llama, etc.; see Cotton 2023) continues to grow, each platform, like social media platforms, comes with the creators' economic motivations, power structures, affordances, and limitations, which subsequently impacts citational politics. Considering this, further citational injustices with LLMs are likely to emerge. Since LLM outputs are algorithmically generated, the statistical error rate such as in the case of fabricated citations (i.e., "hallucinated citations")—which Avery Slater (2024, 223) describes as "a glitch in the system and a telltale signature" of LLMs—is not included for the user's reference. There is current lack of transparency (i.e., a "black box" scenario) regarding the precise sources that many LLMs are trained on and whether the outputs represent hegemonic data. As Pereira (2024, 1196) argues, "small or big adjustments to our frameworks and our writing will not, of course, fix all the problems." Going forward, the role of humans in progressing citational justice has reached another level of urgency due to the increasing accessibility of LLMs, available as AI chatbots, which are being used for composing communications and citations. AI requires further examination in the context of citational politics and new movements towards citational justice.

Following Nancy L. Chick et al.'s (2021) recommendation for self-reflection on the citation process for the composition of this paper, the Gender Balance Assessment Tool (GBAT) (Sumner 2018)—a web-based tool to estimate gender balance in syllabi and bibliographies based on probabilities—was used to estimate the percentage of the genders and races of authors in the bibliography of this paper as another method to summarise the inclusivity, or lack thereof, in research on citational justice. The results generated by the GBAT were: 64 percent women, 36 percent men, 63 percent White, 20 percent Asian, 10 percent Hispanic, and 6 percent

[3] An interesting note of additional reflection is that Tahamtan and Bornmann (2022) include portrait photographs of themselves and Niklas Luhmann (their primary inspiration for their expanded SSCT) in their paper. A question for future consideration is whether portrait photographs could be a way journals and authors could see who they are citing in terms of putting a face to a name (i.e., humanising the textual contributions which could potentially make citation misbehaviours less frequent). However, it inherently gathers some demographic information without explicitly collecting personal details (considering policies such as GDPR) as metadata.

Black. Although based on probabilities, this output demonstrates in some capacity the current perspectives and voices in English-language scholarship covering citational justice (as available through research conducted by the author) and simultaneously highlights gaps for future research and actions. EDI efforts can be a heavy burden for individuals to implement, and fundamental changes in academic culture require collective actions across multiple levels to achieve citational justice. If we do not consider academic cultures of communication over time, we could be in danger of advocating for citational justice that is tokenistic in the newly developing mandates or suggested actions. Another challenge is creating new avenues of knowledge sharing/dissemination, particularly in the wake of the multitude of changes brought about through accessible AI, that allow for new academic genre conventions to emerge beyond a scientific focus. The aim of this paper was to identify the progress already made, the current gaps, and considerations for continued collective efforts towards developing a theoretical framework for citational justice in academic culture within the context of digital publishing.

This review of the literature demonstrates that while there have been efforts to correct citational misbehaviours and injustices, part of the difficulty in achieving citational justice is that emerging technological changes could result in new citational malpractices, such as AI hallucinated citations that do not exist that authors may include in their citation lists and the use of LLMs to generate citation lists or possibly replace some human reading as part of the peer review process. Pereira (2024) notes that citational processes are too complex across disciplines and countries. Developments in LLM systems also need to factor into correctional citation practices in the future. Therefore, I propose that future research into developing a new theoretical framework, one that offers a multi-level approach to implementing citational justice, could allow for more customised and localised approaches to citational justice that account for continual changes in the digital publishing landscape and the increasing ubiquity of various artificial intelligence systems.

Competing Interests

The author declares that they have no competing interests.

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