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The hitchhiker's guide to scholarly research integrity

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Abstract

The pursuit of truth in research should be both an ideal in aspiration and also a reality in practice. The PORTAL-DOORS Project (PDP) strives to promote creative authenticity, fair citation, and adherence to integrity and ethics in scholarly research publishing using the FAIR family of quantitative metrics with acronym FAIR for the phrases *Fair Attribution to Indexed Reports* and *Fair Acknowledgment of Information Records*, and the DREAM principles with acronym DREAM for the phrase *Discoverable Data with Reproducible Results for Equivalent Entities with Accessible Attributes and Manageable Metadata*. This report presents formalized definitions for idea-laundering plagiarism by authors, idea-bleaching censorship by editors, and proposed assertion claims for authors, reviewers, editors, and publishers in ethical peer-reviewed publishing to support integrity in research. All of these principles have been implemented in version 2 of the PDP-DREAM ontology written in OWL 2. This PDP-DREAM ontology will serve as the model foundation for development of a software-guided workflow process intended to manage the ethical peer-reviewed publishing of web-enabled open access journals operated online with PDP software.

KEYWORDS

censorship, data stewardship, DREAM principles, ethical peer review, FAIR metrics, knowledge engineering, metadata management, misconduct, plagiarism, PORTAL-DOORS Project, semantic web

1 | INTRODUCTION

Truth remains essential to the progress of science. Anything less can result in a mistaken waste of valuable time and effort. But in some fields of research, the pursuit of truth and the publishing of truthful information have been replaced by misinformation, disinformation, malinformation, fraud, plagiarism, and censorship. In this current post-truth era, now when truth, lies, and deceit in news, social media, and scholarly research publishing have

all become so co-mingled (Biagioli & Lippman, 2020; Ercegovac & Richardson, 2004; Foltýnek, Meuschke, & Gipp, 2020; Roig, 2006; Triggle & Triggle, 2007; Weber-Wulff, 2014; Zhang, 2015), confusion may arise between 'fake news' and 'truthful reporting' even at those publishers considered the most reputable in the past. Worsening problems with unethical peer review have contributed to this situation resulting in circular arguments with scenarios that fail to correct or retract an improper, misleading, or deceptive research paper despite obvious evidence

for the misconduct. Professional member organizations 'pass the buck' to journal editors, and these journal editors then 'pass the buck' to academic university ethics and integrity offices.

So where does 'the buck stop'? More often than not, these university integrity offices then ignore the problem by operating as 'catch and kill' operations (Pickett, 2020) in which complaints get silenced, suppressed, and dismissed instead of investigated. Quoting from Pickett's recent analysis:

> "Universities can make a lot of money from sham science. They lose money from catching fraudsters. Uncovering fraud also brings negative publicity and a host of other headaches, such as potential lawsuits for defamation and wrongful termination. Even in biomedical cases, where the public health consequences of fake research are most severe, universities dismiss almost 90% of fraud accusations without an investigation, or even an auditable record."

Too often, there is not any substantive response to complainants who request investigations which are either never conducted or for which a report is never issued. Instead, the complainant can be isolated and ostracized, if not subjected to direct retaliation, while those who engaged in the research misconduct are not held accountable for their misdeeds and are allowed to continue their misconduct.

Should we just utter some words of 'SNAFU' slang from World War II and rationalize the status quo with more characterizations of Catch-22 (Heller, 2011) circular reasoning from Joseph Heller? Or should we consult Douglas Adams and provide the equivalent of his Hitchhiker's Guide to the Galaxy (Adams, 1979a, 1979b) in which Arthur Dent is rescued by his friend Ford Prefect before the Vogons destroy planet Earth? We prefer the latter approach with a new hitchhiker's guide to navigating the random vagaries and absurdities of life and research in the world of scholarly publishing. "Do not panic", create our new hitchhiker's guide for research integrity, and follow the example of Ford Prefect, Arthur Dent, and friends, who repeatedly escaped certain death in dangerous situations while exploring many worlds throughout the universe by consulting the wisdom of their hitchhiker's guide. Thus, within the context of the research field comprising the semantic web, artificial intelligence, and knowledge engineering (Berners-Lee, Hendler, & Lassila, 2001), we embarked in 2006 on the PORTAL-DOORS Project (PDP) for software development of the NPDS cyberinfrastructure (Craig, Bae, & Taswell, 2017; Craig, Bae, Veeramacheneni,

Taswell, & Taswell, 2016; Taswell, 2008a; Taswell, 2008b; Taswell, 2010a; Taswell, 2010b; Taswell, 2014).

We continue our work on PDP here in this present contribution with the following three objectives: Aim 1) Promote creative authenticity, fair citation, and adherence to integrity and ethics in scholarly research publishing, that is, a continuation of the research agenda mapped in our recent papers on the DREAM principles and FAIR metrics (Craig, Ambati, Dutta, Kowshik, et al., 2019a; Craig, Ambati, Dutta, Mehrotra, et al., 2019b; Dutta, Kowshik, Ambati, Nori, et al., 2019; Dutta, Uhegbu, Nori, Mashkoor, et al., 2020), now with the introduction and discussion of new terms for onpaper versus offpaper behavior in analogy with online versus offline behavior, and further expounded with detailed definitions and descriptions for both *idea-laundering plagiarism by authors* and *idea-bleaching censorship by editors*. Aim 2) Formalize an abstract model (expressed in ordinary English) to guide and organize a software application driven workflow process for author submission, peer review, and editorial review in scholarly research publishing for online open access web-based journals. Aim 3) Feature a concrete software artifact with the next iterated version of our PDP-DREAM ontology (expressed in OWL 2) to serve as the underlying model for the DREAM principles, the FAIR metrics, and our checklist assertions and claims for the peer and editorial review workflow process for publishing scholarly research with a much lower probability of fraud, plagiarism, and other forms of research misconduct.

2 | CREATIVE AUTHENTICITY AND FAIR CITATION

As famously popularized by Isaac Newton, research develops and evolves from "standing on the shoulders of giants" to produce results that advance each field of inquiry. In other words, researchers continuously build upon the foundation of the past work of their predecessors. For a field to progress, scholars must contribute original and creative work while at the same time referencing prior publications which enabled and contributed to their efforts. This practice of truthful attribution serves as an essential means of maintaining a meritocracy in any research and publication community because it allows for peers both to trace the provenance of ideas and to credit justly those who have advanced the field.

To fulfill this ideal in scholarly research publishing, authors should maintain their creative authenticity through fair citation. Stated simply, creative authenticity could be summarized as "Do not merely know thyself be

thyself" (Abulof, 2017). This concept encourages authors to stay true to their own research vision and goals by contributing novel work to their field while distinguishing their own work from other scholars' work by practicing fair citation. As a result of this standard of truthful attribution, the academic community has adopted the practice of citing relevant publications, with other references discussed in one's own work, as a means of acknowledging and attributing specific contributions to other authors. This collective practice requires authors to search, find, and cite the original body of work where the concept was first published as part of due diligence when completing a literature review. To some persons, the concepts of creative authenticity and fair citation together remain just plain common sense because scholars have been teaching and preaching these principles for centuries if not millennia dating back to ancient societies in Greece, Rome, and elsewhere (Seo, 2009). Regrettably, not all researchers have adopted this practice of creative authenticity and fair citation. Too many authors fail to cite, acknowledge, and attribute published work correctly to the original authors who first created the ideas, developed the content, or performed the analysis (Andreescu, 2012; Barrón-Cedeño, Vila, Mart, & Rosso, 2013; Chowdhury & Bhattacharyya, 2018). Instances of misattribution and false claims of novelty can be explained by author behaviors that range from ignorance and laziness with failure to search the literature to more malevolent plagiarism with full awareness and purposeful intent to disguise and mask another's creation as one's own.

Without appropriate checks and safeguards in place, publishers will encounter difficulties detecting instances of misattribution and the intentions underlying those misattributions. When plagiarism as malicious misattribution occurs, the crime causes consequences with problems for both the original author who was victimized as well as the research community associated with the field in which the plagiarism occurred. It can jeopardize the career of the victim, the plagiarized author who may be deprived of academic career opportunities and research grant funding that accrue instead to the perpetrators, the plagiarizing authors who stole the work of the victim.

Though this problem has worsened over the past two decades in scholarly research, plagiarism does appear in any setting where innovative and creative work has been published for the benefit of a larger group, community, and society. Seemingly any environment that supports public recognition for novel work will always have 'bad actors' that attempt to steal, promote, and sell this novel work of others as their own for personal gain. The creative worlds of art and music are rife with many incidents in a long history where fine art and music has been stolen, copied, and sold for the personal gain of the thief. In many countries, plagiarism is considered a crime recognized as a form of intellectual property theft when it violates the laws of copyright, trademark, patents, and/or their regional legal equivalents, especially when the plagiarism is not countered and corrected, and when the plagiarizing publication is not retracted.

3 | SCHOLARLY RESEARCH INTEGRITY

There is fraud in science. Despite efforts to identify and correct such dishonesty, much remains hidden. However, in recent years a number of initiatives have been successful in helping to identify it. In many instances, appropriate actions have resulted including the dismissal or resignation of the perpetrators, and news coverage, correction, or retraction of the published material. Credit can be given to greater scrutiny by researchers with approaches such as the use of software to aid in the detection of image manipulation (Bik, Casadevall, & Fang, 2016), Retraction Watch co-founded by Adam Marcus and Ivan Oransky in 2010, and PubPeer founded by Brandon Stell, George Smith, Richard Smith shortly after in 2012, joined later by Boris Barbour. Reflections on the contributions of Retraction Watch and PubPeer from Oransky and Barbour and Stell respectively can be found in the collection *Gaming the Metrics* (Biagioli & Lippman, 2020).

Even before Retraction Watch, it was evident that there was a serious problem as highlighted in a report by van Noorden that in the 10 year period from 2001 to 2010, retractions had risen more than 10-fold from 30 to >400 per year whereas the number of published papers had increased less than 50% (Noorden, 2011). These numbers were updated in 2018 with 946 retractions in 2014 of which 411 were due to fraud (Brainard, 2018). Of particular interest is that plagiarism together with self-plagiarism accounted for 33% of all retractions. Although software has been introduced to detect plagiarism, it remains on the rise as has been recently reported (Conroy, 2019). Furthermore, despite what appears to be greater recognition of fraud, it can take considerable time for a retraction to happen, and the practice by journals for handling such retractions can vary dramatically. For instance, the 1998 publication in The Lancet by the now discredited physician Andrew Wakefield (Wakefield, Murch, Anthony, Linnell, et al., 1998), with the claim that the use of the measles, mumps, and rubella (MMR) vaccine was linked to autism, was not withdrawn until 12 years later in 2010 when the British General Medical

Council ruled dishonesty despite considerable concerns being expressed about the data as early as 2004.

Clearly, an enhanced and more uniform response is needed particularly because of the emergence of many more journals. To quote Pontus Perrson, Editor of Acta Physiologica, whose editorial asked the question: "Soon more journals than authors?" (Persson, 2015). Thus, how to introduce a monitoring system that will achieve greater and more universal acceptance? More importantly, it is essential that whistleblowers are provided a level of protection that is meaningful because too often they are ostracised and harmed (Rhodes, 2004).

To combat plagiarism and promote fair citation, a number of different responses and methods have been developed, primarily focusing on plagiarism detection and policy recommendations (Drinan & Gallant, 2008; Foltýnek & Glendinning, 2015; Wager, 2014). Contemporary automated plagiarism detection software has largely focused on a lexical analysis of the text while research has been growing in the fields of natural language processing and artificial intelligence to enable semantic analysis. Further work by various authors looks to move away from older methods of text matching, instead looking at where concepts or ideas were stolen, paraphrased, and presented as novel contributions (Barrón-Cedeño et al., 2013; Vani & Gupta, 2017). Moreover, problems with ethical peer- reviewed publishing have not been limited only to continuing concerns about plagiarism by authors such as the influential researcher Dr. H. Gilbert Welch (Carey, 2018), but also involve continuing concerns about censorship by editors (Delborne, 2015; Healy, 2008; Shaw & Penders, 2018). Suppression of scientific debate and silencing of dissent with censorship by editors has not yet been studied enough to address the problem with an adequate solution.

With regard to promoting policy, COPE (Committee on Publication Ethics, 2019) was formed to meet the need for standards in publishing with a mission to create guidelines for publishers and the scholarly publishing community. COPE operates as an independent not-for-profit organization with the "aim of moving the culture of publishing towards one where ethical practices become a normal part of the publishing culture" (see the COPE mission statement). COPE has developed and interpreted their ethical guidelines supported with hearings held to provide advice on specific cases of allegations of violations brought for review by their committees. Many publishing companies have proclaimed their adoption of these COPE principles, stating that they will abide by COPE's guidelines including those for fair citation (see Table 1).

4 | IDEA-LAUNDERING PLAGIARISM BY AUTHORS

The original definition of idea-laundering plagiarism was published (Dutta et al., 2020) with the following description:

TABLE 1 Examples of publishers claiming adherence to cope publishing ethics

Publisher	Type of business	Handling of misconduct
AAAS Science	USA non-profit	Internal per COPE ethics
"In cases where an institutional investigation of large-scale error or misconduct is under way, a Science Journal may publish an Editorial Expression of Concern relating to the paper in question. In cases of irreproducibility of research findings reported in a Science Journal paper, a retraction may be considered if the core conclusions are thereby invalidated. Papers will also be retracted in case of research misconduct, in accord with COPE guidelines. Corrections to errors that do not affect the core conclusions of a paper are posted online and linked to the published paper."		
Elsevier Publishing	Netherlands for-profit	Internal per COPE ethics
"We promote best practice by offering editors membership of the Committee on Publication Ethics (COPE) and providing editors with Crossref Similarity Check reports for all submissions to our editorial systems."		
Nature Publishing	England for-profit	Internal per COPE ethics
"We will be guided by COPE guidelines, however the Nature Research journals will continue to make independent decisions based on our existing policies and principles."		
PLOS One	USA non-profit	Internal per COPE ethics, external at COPE forum
"In cases of suspected or alleged misconduct, follow COPE flowcharts and seek advice at the COPE forum. If we find conclusive evidence of misconduct we will take steps to correct the scientific record, which may include issuing a correction or retraction."		
Springer Publishing Germany for-profit	Internal per COPE ethics	
"Springer is a member of the Committee on Publication Ethics (COPE) and subscribes to its principles on how to deal with acts of misconduct. Springer strongly recommends journal editors to join COPE and thereby adhere to the principles of COPE, committing to investigate allegations of misconduct and to ensure the integrity of research."		

"The *IEEE Publication Services and Products Board Operations Manual* defines five levels of plagiarism (IEEE, 2019). We describe here another kind of plagiarism called *idea laundering*, analogous to the concept and practice of money laundering, in which ideas are plagiarized and then the plagiarism is hidden in plain sight. To clarify this analogy, first define *money laundering* as the act of passing money that was illegitimately obtained through another illegitimate process with the intent of making it appear legitimate, that is, *making dirty money look clean*. Then define *idea-laundering* as the act of passing ideas that were illegitimately obtained through another illegitimate process with the intent of making it appear legitimate, that is, *making dirty ideas look clean*."

In this report, we now formalize the additional criteria necessary to differentiate idea-laundering plagiarism as a malign form of idea plagiarism from other relatively benign forms of idea plagiarism such as cryptomnesia or citation amnesia:

1. *Proof of idea plagiarism*: evidence that a majority, a plurality, or other non-trivial percentage of similar content exists between the plagiarizing paper and the plagiarized paper as measured by the FAIR metrics (Craig et al., 2019b) and/or other measures of similarity that correlate and quantify equivalent entities, similar concepts, and identical ideas.

2. *Proof that the idea plagiarism is neither benign citation amnesia, nor falsely-claimed 'independent development'*: documented evidence that the plagiarists had awareness and knowledge of the papers previously published by the original creator(s) and author(s) because evidence exists for use by the plagiarists of the previously published papers, with attendance at professional conferences, direct personal correspondence, and/or in-person face-to-face conversations between the plagiarizing and plagiarized authors at conferences, meetings, workshops, etc.

3. *Proof that the idea plagiarism is not falsely-claimed 'public domain' information and knowledge*: documented evidence that the plagiarised material was previously published by the original creator(s) and author(s) as copyrighted, trademarked, and/or patented information published with explicit historical precedence and priority before the act(s) of commission of the initial plagiarism by the primary plagiarists or repeated propagation of the plagiarism by the secondary plagiarists.

4. *More proof that the idea plagiarism is malign idea-laundering plagiarism*:
   a. Documented evidence that the plagiarists refused to cite the previously published paper that they plagiarized even when their omission or exclusion of citation was brought to their attention;
   b. Documented evidence that the plagiarists engaged in lies feigning ignorance of the previously published work, and falsely claiming to journal editors that their plagiarizing work was developed and authored 'independently' of the previously published work;
   c. Documented evidence that the plagiarists refused to cite the previously published work that they plagiarized even when their omission or exclusion of citation was brought to their attention because they continued to refuse to cite and discuss relevant and appropriate previously published content as required by the COPE scholarly publishing ethics;
   d. Documented evidence that the primary plagiarists promoted citation of their plagiarizing paper instead of citation of the plagiarized paper, and thus, otherwise failed to prevent the propagation and spread of the primary plagiarism by other secondary and tertiary plagiarists who cited only the plagiarizing paper and not the plagiarized paper;
   e. Documented evidence that the plagiarists expanded their collusion with others to include the editors at journals who supported the plagiarism by engaging in censorship of the reader-respondent to the plagiarism.

How many criteria should be sufficient requirements for the plagiarism to be judged *malign idea-laundering plagiarism* by reasonable, fair-minded moral and ethical, research scholars who wish to adhere to the COPE ethics and other similar collections of publishing ethics?

5 | IDEA-BLEACHING CENSORSHIP BY EDITORS

In extension with analogy to idea-laundering plagiarism by authors, we define idea-bleaching censorship by editors as any act that aids and abets the plagiarists by ignoring and silencing inquiries or requests from readers who report the plagiarism. With or without an apparent conflict of interest between authors and editors, these acts of idea-bleaching censorship by editors may be those of either omission or commission:

1. Ignoring the report or inquiry and never responding to the reader-reporter, that is, maintaining the non-responsive posture of 'blind eyes and deaf ears'.

2. Refusing to publish a Letter to the Editor, Opinion, Debate, Commentary, or Response from the reader-reporter who seeks to cite the previously published research that was plagiarized.
3. Aiding, abetting, and acting in collusion with the plagiarizing authors by:
    a. Allowing the plagiarists to feign 'ignorance' and to refuse or fail to complete and report proper searches of the published literature including computerized searches of the online databases of copyrighted, trademarked, and/or patented information.
    b. Allowing the plagiarists to refuse to correct the omission or exclusion of citation of the plagiarized paper, and to continue to refuse to cite the previously published research even when brought to their attention as an 'unintentional' omission of citation.
    c. Allowing the plagiarists to falsely claim 'independent development' of their work while ignoring documented evidence for the plagiarists' awareness and knowledge of the published research that was plagiarized.
    d. Allowing the plagiarists to falsely claim 'public domain' status of the plagiarized content in their paper while ignoring documented evidence for previously published copyrights, trademarks, and/or patents for the content that was plagiarized.
    e. Allowing the plagiarists to continue to publish repeated derivative works based on the plagiarism (i.e., those that cite the plagiarizing paper but not the plagiarized paper) thereby resulting in continued propagation of the plagiarism by both the primary plagiarists and the secondary plagiarists.
4. Conducting sham investigations, whether by ignoring and/or excluding evidence, or by failing to issue an evidence-based report with logically articulated explanations of the judgment rendered, then claiming that the investigation was completed and cannot be appealed, and/or by other forms of sham investigations with so called 'catch and kill' or 'cover-up' operations.
5. Refusing to conduct investigations into reports of alleged misconduct with claimed excuses that include:
    a. Investigation would not be permissible because of a non-investigation policy against any plagiarizing co-authors who are neither first author nor corresponding author on the plagiarizing publication.
    b. Investigation would not be possible because the organization's volunteer leaders do not have the time to devote to investigations of alleged violations of the organization's advertised code of professional conduct.
    c. Investigation would be moot because of a non-enforcement policy of the organization's code of professional conduct if the organization promotes any such professional code of conduct.

Idea-bleaching censorship by an editor effectively prohibits the original authors (who were plagiarized and victimized by the plagiarism) from publishing any kind of reply, review, rebuttal, or opposing opinion in response to the plagiarism published by the plagiarists. Thus, idea-bleaching censorship hides the truth, suppresses scientific debate, and silences dissenting opinions. However, idea-bleaching censorship by an editor does not include appropriate screening for personal insults and ad hominem attacks. All authors and editors engaged in peer review should always practice civil, courteous, respectful, and professional discourse in scholarly research publishing.

6 | ETHICAL PEER-REVIEWED PUBLISHING

To counter both idea-laundering plagiarism by authors and idea-bleaching censorship by editors, we propose the following declarations of statements expressed in first-person voice by authors, reviewers, editors, and publishers intended to promote and support research integrity in scholarly publishing:

1. *Author*: (a) I have neither financial nor personal conflicts of interest with the reviewers, editors, and/or publishers. I participate in the peer review process independently of them or have otherwise fully disclosed the nature of the relationship such as current or former co-author or colleague working in the same research group. (b) I have cited all relevant and appropriate literature known at the time of submission in a manner consistent with scholarly publishing ethics that refrains from plagiarism including idea-laundering plagiarism. (c) I have made all claims truthfully in this submission in a consistent logical manner to the best of my knowledge, and each claim either cites previously published work correctly or represents a valid novel contribution. (d) I agree to remain in contact with the editor and publisher and to respond to them if and when any concerns arise during the peer review process and also later after publication if the submission is published. (e) I agree to correct any mistakes in citation of references, both omission of citation as well as incorrect citation, to correct any mistakes in data, analysis, results, or presentation and interpretation of results, whenever

brought to my attention, both during the peer review process and also later after publication if the submission is published. (f) As submitting and/or corresponding author, I agree to be held *responsible and accountable for the authenticity and integrity of the submitted work*. (g) I assert that any and all of my co-authors have also agreed to be held *responsible and accountable for the authenticity and integrity of the submitted work*.

2. *Reviewer*: (a) I have neither financial nor personal conflicts of interest with the authors, editors, and/or publishers. I participate in the peer review process independently of them or have otherwise fully disclosed the nature of the relationship such as current or former competitor working on the same research problem. (b) I have refrained from the use of personal insults and ad hominem attacks directed against the authors. (c) I have refrained from fallacious criticisms of the authors, and instead, have justified all criticisms with evidence supported by detailed explanations and cited references. (d) I have refrained from 'reviewer reference padding', that is, requesting citations of the reviewer's published papers unless these papers are directly related to the substantive content of the paper under review and I have explained the rational reasons why they should be cited and discussed by the paper under review. (e) I have reviewed and checked for correctness all citations referenced in the authors' submission. I am not aware of any published literature in the research field that should have been cited by the authors but was omitted by them. (f) I agree that all claims made in this submission by the authors are true to the best of my knowledge, and each one either cites previously published work correctly or represents a valid novel contribution.

3. *Editor*: (a) I have neither financial nor personal conflicts of interest with the authors, reviewers, and/or publishers. I participate in the peer review process independently of them or have otherwise fully disclosed the nature of the relationship. (b) I have organized the peer review committee and managed the review of this submission fairly without bias. Otherwise, I have informed the authors that their submission has not been processed for peer review because it was considered outside the scope of the journal. (c) I have refrained from 'editor reference padding', that is, requesting citations of the journal's published papers unless these papers are directly related to the substantive content of the paper under review and I have explained the rational reasons why they should be cited and discussed by the paper under review. (d) I have examined the reviewers' evaluations of the authors' submission to assure that the reviewers have complied with their ethical peer review requirements. (e) I agree to respond to reader complaints by investigating and publishing their concerns in a manner consistent with scholarly publishing ethics that refrains from censorship including idea-bleaching censorship. (f) I agree to publish corrections of submission errors whenever brought to my attention after publication if the submission is published.

4. *Publisher*: (a) I have neither financial nor personal conflicts of interest with the authors, reviewers, and/or editors. I participate in the peer review process independently of them or have otherwise fully disclosed the nature of the relationship. (b) I have confirmed that the reviewers and editors have completed their tasks satisfactorily to prevent any violations of copyright, trademark, patent, and intellectual property law. (c) I agree to investigate fairly any future inquiry concerning this publication should it later be suspected of misconduct after publication. As part of a fair investigation, I agree to issue a formal report based on objective evidence and rational argument for the judgment and decision recommended by the analysis.

With these declarations of statements by authors, reviewers, editors, and publishers, we seek to establish the necessary criteria to detect and prevent fraud, plagiarism, and censorship with a workflow process that includes a checklist of appropriate signing steps for authors when submitting manuscripts and analogous signing steps for reviewers, editors, and publishers when engaged in an ethical peer review process for publishing scholarly research manuscripts. Given the observed history of human nature, we acknowledge that some participants in this process may engage in the same deceit and lies just as blithely as they have in the past. However, for those research scholars responsive to the educational reminders and guided signposts organized by a software engineered workflow process that creates an audit trail of signed agreements, we hope that this approach will help slow and reduce the increasing rate of plagiarism, censorship, fraud, and misconduct that has occurred in the past two decades.

Our proposed solution to this problem has been expressed as both ordinary English language definitions and claims (see Sections IV, V, and VI above) and also RDF subject-verb-object triple statements contained within version 2 of the PDP DREAM ontology written in OWL 2. When compared with version 1 of the PDP-DREAM ontology (Dutta et al., 2020), version 2 of PDP-DREAM adds new sections to address the definition of idea-laundering plagiarism by authors (from Section IV), the definition of idea-bleaching censorship by editors

(from Section V), and the checklist with checkpoint signing statements for authors, reviewers, editors, and publishers in ethical peer-reviewed publishing (from Section VI). At the ASIS&T 2020 Conference, we will demonstrate use of PDP-DREAM version 2 with a prototype version of the workflow process for peer review publishing of research manuscripts planned for the www.BrainiacsJournal.org.

7 | CONCLUSION

We want to stop plagiarism, censorship, fraud, and other misconduct in scholarly research, and we hope to be able to do so with better software-guided workflow processes for ethical peer-reviewed publishing. In this report, we have defined idea-laundering plagiarism by authors, idea-bleaching censorship by editors, and proposed assertion claims for authors, reviewers, editors, and publishers in ethical peer-reviewed publishing to support integrity in research. All of these concepts have been implemented in version 2 of our PDP-DREAM ontology planned for use as the foundation of a software application intended to manage the peer-reviewed publishing of online open access journals. Development of this novel approach to reduce the rate of misconduct in research has ensued from our response to the increase of plagiarism, censorship, and fraud that has occurred over the past two decades.

Given that human nature is what it is, unfortunately too many times, persons, committees, offices, and organizations have shown themselves incapable of policing themselves because of the usual politics and factors of ego and greed for power and money. Thus, there remains the perennial persistence of misconduct in scholarly research committed by those who do so knowingly with full awareness, intent, and purpose. Regrettably, these persons simply choose to defy the COPE publishing ethics (Committee on Publication Ethics, 2019). They seem unable or unwilling to stop themselves from perpetrating these crimes as a consequence of their *willful disregard* for morals, ethics, and a basic respect for the conventions and traditions of scholarly publishing.

To help reduce the rate of occurrence of these crimes, we should develop software systems with artificial intelligence, validated algorithms, and automated agents to assist the detection and prevention of such research misconduct. In other words, let us take it out of the hands and minds of people, and put it into the impartial, unbiased, neutral, and objective bits and circuits of computers. At least we could do so with respect to misconduct which is related to misuse of computerized information in the form of electronically accessible digital data, metadata, and research documents. Of course, there is no process of any kind that is perfect, regardless of whether automated, computerized, or otherwise. However, for this endeavor with computerized protocols, debates will continue about the presence of bias and/or the absence of fairness in artificial intelligence algorithms (Verma & Rubin, 2018). In this scientific debate, however, we argue that an essential distinction should be made between those machine learning methods and algorithms based on probabilistic analyses of data sets (akin to statistical inference) and those machine learning methods and algorithms based on pure logic inferred from defined vocabularies and axioms (akin to mathematical proof). Nevertheless, if we implement and require use of a software guided workflow process with binding contracts and agreements that captures not only the peer-reviewed publishing process, but also the post-publication process, then the journal and papers published in the journal, all become part of a living library, tracked with audit logs that record a date-time-stamped history of assertions. These claims should hold true not only before publication but also after publication such that authors are held responsible and accountable for avoiding misconduct, while reviewers, editors and publishers are held responsible and accountable for preventing and policing misconduct.

Instead of too many turning a blind eye and a deaf ear, and too many engaging in either idea-laundering plagiarism or idea-bleaching censorship, those academic faculty who do wish to continue serving as *scholars with creative authenticity and research integrity* should support this appeal for a moral revival with strict enforcement of publishing ethics. When reporting scholarly research, only the truth and nothing but the truth will enable us to make progress towards a better future for all. Even with computerized protocols to improve compliance with publishing ethics, this statement about telling the truth cannot be repeated often enough. Or perhaps, we could calculate the probabilities on whether a call to the Vogons to build another hyperspace bypass will do the trick?

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