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Letter to the Editor

“Ships that pass in the night”: Does scholarship on the social benefits of urban greening have a disciplinary crosstalk problem?



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ABSTRACT

Two original research pieces – both about the outcomes of tree planting, with similar research designs, both published in January 2018 (Whitburn et al. in *Environment and Behavior*, and Watkins et al. in *Cities*) – cite precisely zero journal articles in common. This commentary presents a qualitative & quantitative analysis of the citation lists of these two pieces. Of 101 total journal articles cited across both pieces, I find no overlap in scholarly journal articles cited, and only 3 of 62 scholarly journals cited in common. One of the pieces cites not a single article from *Urban Forestry & Urban Greening*. I use the comparison between these two articles (one of which is my own) as an example of the potential pitfalls of inter- and transdisciplinary scholarship on the social benefits of urban greening. I conclude the commentary with several practical steps we can take as reflective and mindful researchers – steps I myself will be taking – to reduce the likelihood that important insights from the literature are missed during all phases of research.

1. A tale of two articles

In January 2018, an original research article was published online in the journal *Environment and Behavior*, titled “Exposure to urban nature and tree planting are related to pro-environmental behavior via connection to nature, the use of nature for psychological restoration, and environmental attitudes” (Whitburn et al., 2018). Whitburn et al. (2018) examine how an individual’s participation in planting a tree (or in a tree planting event) is related to other self-reported pro-environmental behaviors (such as recycling and energy consumption) and how this relationship is mediated by environmental attitudes and use of or connection to nature. The authors randomly surveyed individuals from neighborhoods in Wellington City, New Zealand that had participated in a tree planting campaign orchestrated by the City Council’s greening initiatives between 1990 and 2010 and, from survey responses, assigned individuals to tree planting participant and non-participant groups. Using data from individual survey responses and a measure of exposure to nature determined by on-the-ground inventories of neighborhood vegetative cover while controlling for individual demographic factors, Whitburn et al. (2018) find that neighborhood vegetation and participation in tree planting explain much of the variation in individuals’ pro-environmental behavior, and that this relationship is mediated by connection to nature, environmental attitudes, and the use of nature for psychological restoration.

Also in January 2018, an original research article was published online in the journal *Cities*, titled “Does collaborative tree planting between nonprofits and neighborhood groups improve neighborhood community capacity?” (Watkins et al., 2018). (In the interest of full disclosure, I am the second author of this article, and participated in research design, implementation, and analysis therein, including reading and reviewing the literature cited and writing the paper.) Watkins et al. (2018) examine how neighborhoods that engage in collaborative tree planting with nonprofit organizations are impacted by this tree planting. The authors randomly surveyed individuals from neighborhoods that

participated in collaborative tree planting with local urban greening nonprofits in 4 U.S. cities (Atlanta, Detroit, Indianapolis, and Philadelphia) between 2006 and 2009 and compared survey results from tree-planting neighborhoods to those from similar neighborhoods matched on demographic and tree canopy that had not engaged in tree planting. Using aggregate data from individual survey responses while controlling for neighborhood demographic factors, Watkins et al. (2018) find that individuals in tree-planting neighborhoods report higher neighborhood ties but not significantly higher social cohesion or shared trust and that, at the neighborhood level, no significant associations of tree planting exist.

2. Never getting back together

Whitburn et al. (2018) and Watkins et al. (2018) cite *exactly zero* scholarly journal articles in common. These two articles were published in the same month (January 2018). They have very similar study designs (tree-planting participants v. non-participants; tree-planting neighborhoods v. comparison neighborhoods). The research was designed and conducted at approximately the same time (early 2010s). And yet, of 101 journal articles cited across both pieces (44 in Whitburn et al. (2018); 57 in Watkins et al. (2018)), *not a single journal article is cited in both pieces*.

Indeed, the pieces hardly cite any of the same scholarly journals, or even authors in common: Of 62 journals cited across both articles (29 in Whitburn et al. (2018); 36 in Watkins et al. (2018)), only 3 journals are cited by both pieces: *Environment and Behavior*, the *Journal of Environmental Psychology*, and *Landscape and Urban Planning*. Of 278 total authors cited across both pieces (123 in Whitburn et al., 164 in Watkins et al.; inclusive of all coauthors on all cited sources, journal articles, and other formats, but excluding institutional authors, e.g., Wellington City Council), only 9 individual authors (a mere 3%) appear in both Literature Cited lists (Bowler, D. E., Buyung-Ali, L., De Vries, S., Dillman, D. A., Hartig, T., Kaplan, R., Kaplan, S., Knight, T. M., Pullin, A. S.).

Of 126 total sources of any type cited across both pieces (60 in

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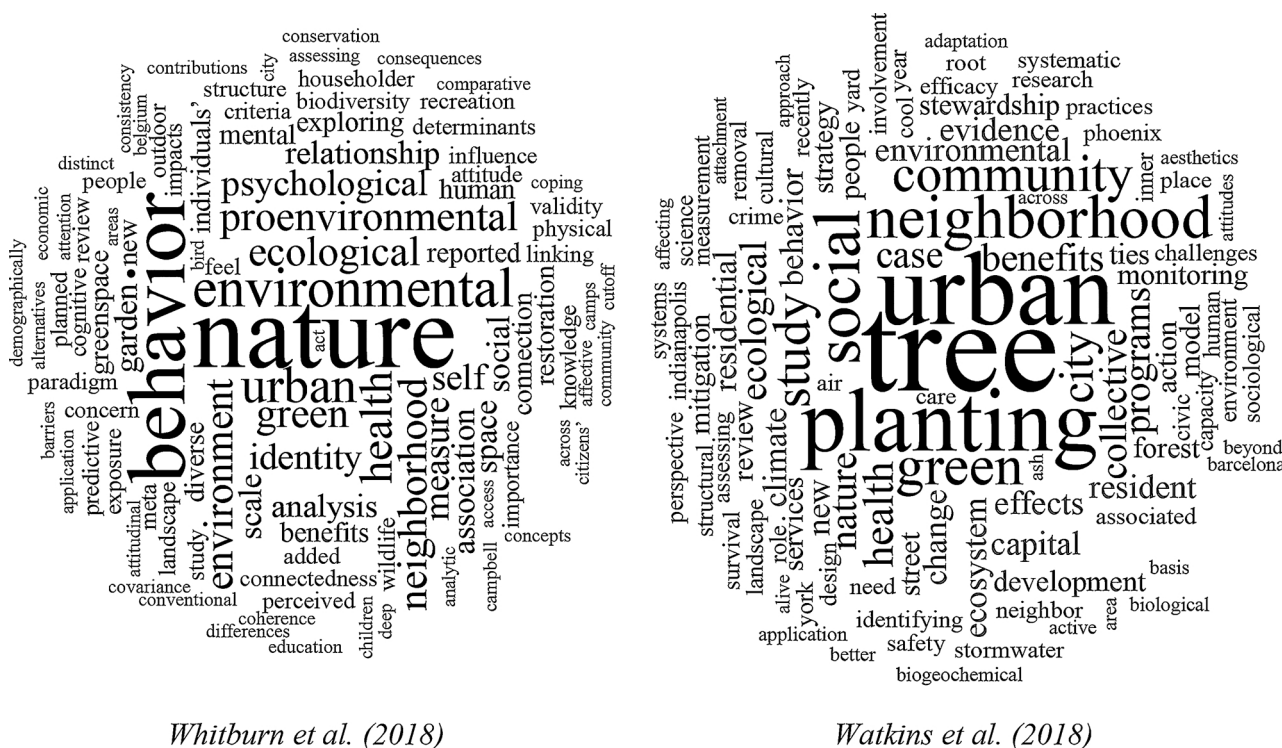


Fig. 1. Word clouds based on the journal article titles from each article’s Literature Cited. Related words, e.g., “behaviors” and “behavior” are considered the same word. British English spellings have been changed to American English (e.g., “behaviour” to “behavior”). Created using NVivo for Mac 11.4.3.

Whitburn et al., 68 in Watkins et al.), only two of these are sources in common: One (Dillman et al., 2009) is a book – nay, *the book* – on survey methodology that any researcher who uses survey methods would be remiss *not* to cite. The second (Kaplan & Kaplan 1989) is a book on the health impacts of nature *from 1989*. Is this the point at which environmental psychology diverged from urban forestry? We are never, ever getting back together, indeed.

Word clouds created from the titles of journal articles appearing in each article’s Literature Cited section (Fig. 1) clearly show the differences between the literature cited. Where the top 5 most common words appearing in titles of the literature cited by Whitburn et al. are “nature” (20 times), “behavior” (15), “environmental” (9), “urban” (8), and “health” (7), the 5 most common words in Watkins et al.’s cited titles are “tree” (25), “urban” (19), “planting” (16), “social” (11), and “neighborhood” (10). “Urban” is the only word to appear in both top-5 lists.

In looking at the subject designations for journals in which cited publications appear, clear disciplinary differences emerge between the articles. Categories were assigned to each cited article using the Web of Science Core Collection Categories for journals. All articles published in indexed and categorized journals were included (40 articles in indexed journals cited in Whitburn et al. (2018); 39 in Watkins et al. (2018)); a single article/journal may be assigned multiple categories. This yielded some interesting patterns. For instance, Whitburn et al. (2018) cited 23 articles from 10 journals in the psychology category, while Watkins et al. (2018) cited only 3 articles from 3 psychology journals. On the other hand, Whitburn et al. (2018) only cited 1 article from 1 journal in the urban studies category, while Watkins et al. (2018) cited 12 articles from 4 journals in this category. Other differences in journals by discipline (category) include: environmental sciences (Whitburn et al.: 2 articles in 2 journals; Watkins et al.: 8 articles in 6 journals), environmental studies (Whitburn et al.: 18 articles in 6 journals; Watkins et al.: 12 articles in 5 journals), sociology (Whitburn et al.: 1 article in 1 journal; Watkins et al.: 5 articles in 4 journals), and geography (Whitburn et al.: 2 articles in 2 journals; Watkins et al.: 8 articles in 3

journals). For biology, there is an interesting pattern: Whitburn et al. (2018) cite 6 articles from 6 different biology journals; Watkins et al. (2018) cite 9 articles from just 3 journals.

An incidental observation from the above analysis may of interest to this audience: The *Environment & Behavior* piece by Whitburn et al. (2018) did not cite a single article from this journal, *Urban Forestry & Urban Greening*. (Another full disclosure: I have been an associate editor for *UFUG* since 2015.) This is despite the prevalence of relevant pieces published recently – Daniels et al. (2014), Shakeel and Conway (2014), Roman et al. (2015), Conway (2016), just to rather arbitrarily name a few related to individuals and tree planting appearing in the first two pages of “tree planting” *Urban Forestry & Urban Greening* journal search results from 2013 to 2016 (when a piece published in January 2018 would be in the process of being written). What’s further, the *Environment & Behavior* piece doesn’t cite a single article from the 40+-year archives of another major urban forestry journal, the *Arboriculture & Urban Forestry* (née the *Journal of Arboriculture*), though admittedly *AUF* is not indexed (categorized and ranked any major journal citation index), which can make its articles more difficult to discover during literature searches.

3. “Ships that pass in the night”

To summarize, these two pieces cite zero scientific articles in common. That is, despite their interest in measuring similar phenomenon – the relationship of participation in tree-planting activities to other individual (Whitburn et al., 2018) and neighborhood (Watkins et al., 2018) characteristics – there are hardly any citations they share. But why is this the case? Is it merely coincidental, accidental oversight on the part of the author teams? After all, an estimated 2.4 million journal articles are published every year in approximately 28,100 different peer-reviewed journals – and that’s just in English (Ware and Mabe 2015). We can’t be expected to keep up with them all. (If this kind of crosstalk is happening among scholars from two English-speaking countries, publishing in English-language journals, I can only imagine

what might be the crosstalk happening between English and non-English scholars. In fact, a recent synthesis paper on integrative research approaches argued that the future of research to address societal problems will integrate knowledge across scientific disciplines, sectors, and *international boundaries* (Mauser et al., 2013). Language barriers and international variation in research practices are an entirely different can of worms that I'm leaving out of this particular commentary, but something that should be considered in the future.) But the plethora of literature is in part why we have graduate degrees and the corresponding training and tools: to help us search, discover, evaluate, analyze, and incorporate relevant literature from among all that is published each year. And we have academic and professional conferences to help bring together individuals across institutions, disciplines, and even sectors to share our latest work. The sheer volume of literature available to modern scholars is an unsatisfying explanation. Below, I discuss three hypotheses that may provide more substantive reasons for the observed lack of literature overlap.

3.1. The origin of scholars: the author teams were trained in and work in different disciplines

It may be that the lack of overlap in cited literature can be attributed to the different disciplines from which the author teams originated and approach their research. Whitburn et al. (2018) was authored by a three-person team at the Victoria University of Wellington (New Zealand), including a Ph.D. candidate in ecology with a master's of conservation biology (Whitburn), an associate professor of conservation science and director of the Centre for Biodiversity and Restoration Ecology in the School of Biological Sciences (Linklater), and an associate professor of psychology and codirector of the Center for Applied Cross-Cultural Research at the School of Psychology (Milfont). Watkins et al. (2018) was authored by an eight-person team based (at the time of research) largely at the School of Public and Environmental Affairs at Indiana University Bloomington (United States), including authors with Ph.D.'s in public affairs (Watkins), environmental science (Vogt and Mincey), forestry (Fischer), and public policy analysis and urban planning (Westphal); and master's degrees in public affairs (Vogt, Mincey, and Bergmann), environmental science (Vogt, Mincey, Bergmann, and Widney), and geography (Westphal and Sweeney). The backgrounds of these teams clearly differ: the Whitburn et al. (2018) team comprises expertise in ecology, conservation biology, applied psychology, while the Watkins et al. (2018) possess expertise in public affairs/policy and environmental science. On the hypothetical family tree of academic disciplines, ecology, conservation biology, and environmental science arguably share a parent or at least a grandparent, but these disciplines are generations separated from psychology, which is generations apart from public affairs. Could this be why there are no scholarly articles cited in common? In part. But it is likely not the discipline *de jure per se* but rather the *de rigueur* disciplinary ways of knowing, methodologies, and jargons that more likely account for the different literature cited. In other words, while both teams have both natural scientists and social scientists on the teams, the particular disciplines that these individuals come from likely impact the types of literature discovered and reviewed as well as their research paradigms.

Slight evidence of disciplinary leanings that align with the backgrounds of the authors appears in the Web of Science subject categories for the dominant journals in which cited articles were published. Overall, Whitburn et al. (2018) more frequently cited articles published in psychology and environmental studies journals, while Watkins et al. (2018) cited articles published in urban studies, environmental science, sociology, and geography journals. These journal categorizations mostly match the disciplinary training of the author teams, if one lumps urban studies in with public affairs for Watkins et al. and allows the psychology affiliation of the third author in Whitburn et al. to supplant the biology affiliations of the first and second authors. Interestingly, given the Whitburn et al.'s first two authors affiliations with a biology

program, Watkins et al. (2018) cite slightly more articles from biology-categorized journals, but Whitburn et al. (2018) cite a greater variety of journals.

There are confounding characteristics of authors unrelated to disciplinary background that may provide alternative explanations for the differences in and diversity of citation lists between Whitburn et al. (2018) and Watkins et al. (2018). van Rijnsoever and Hessels (2011) observed that female scientists were more likely than males to engage in interdisciplinary collaborative research, as were scientists in the private sector or government. This aligns with the anecdotal evidence provided by the author list of one of the two pieces at the focus of this commentary: the Watkins et al. (2018) author team comprises 6 women and 2 men, inclusive of one governmental researcher.

3.2. Lost in translation: we are searching using different databases and search terms

That the author teams work in different disciplines may be related to how literature searches are conducted, from the databases used to the search terms entered. Literally, we may be speaking different (academic) languages. (This disconnect between social and natural science perspectives in investigations requiring interdisciplinary themes something I've written about before with respect to social-ecological systems scholarship *in toto*. See Epstein et al. (2013) and Vogt et al. (2015)). However, this explanation is also only partially satisfying. On the database side, there should ostensibly be at least some overlap in the search engines used and databases queried by the biologist-psychologist and environmental scientist-public affairs staffed research teams. Indeed, many if not most databases these days are multidisciplinary. Perhaps because of this, keyword selection – both by authors choosing keywords to assign to their own manuscripts as well as by literature searchers for database queries – is perhaps more important than ever. With respect to search terms, one would expect authors to perform an academic search of at least all of the words in their title and listed keywords for their article. (Only the phrase “tree planting” appears in both article titles; while only the word “urban” appears in both keyword lists.) To be fair, I have no way of knowing what databases or search terms Whitburn et al. used; and quite honestly, I don't remember the specific list of words used by my own group, Watkins et al. (though I do know I am personally partial to Google Scholar and Web of Science for my own literature reviewing). I do have a sneaking suspicion that we (Watkins et al.) never searched “pro-environmental behavior” or “psychology,” while they (Whitburn et al.) never searched “tree planting” or “urban forestry.” If nothing else, this is a failure of vocabulary and in creativity of language on both our accounts.

3.3. Apples to oranges?: the concept of “tree planting” is conceptualized differently

The final hypothesis I will pose here merits the most discussion and is related to conceptual differences in how the concept of “tree planting” is considered in the pieces. There are two easily identifiable dimensions of difference on this account. The first question is whether tree planting is an *individual* or *neighborhood* activity and whether the research is interested in outcomes of tree planting at the individual or neighborhood level. Whitburn et al. (2018) consider the phenomena of tree planting to be an example of a “past pro-environmental behavior” on the part of an individual. Tree planting is somewhat an individual decision-making process in their view, and perhaps this is why these authors primarily cite literature from the environmental psychology field related to the correlates and intermediaries of pro-environmental behaviors, such as use of nature for psychological restoration and connection to nature, but do not look to literature on the outcomes of group behavior on group or neighborhood characteristics. Watkins et al. (2018) consider tree planting something undertaken collectively by a neighborhood and are interested in “estimating the causal effect of neighborhood tree planting on neighborhood social outcomes” (p. 84).

For this reason, Watkins et al. (2018) root their investigation in literature on social capital, collective action, and urban greening but do not consider the potential substantive impact on behaviors at the individual level.

The second conceptual difference is the question of whether we are interested in the outcomes of a particular behavior (tree planting: Watkins et al., 2018) or of a particular type of behavior (tree planting as an example of pro-environmental behavior: Whitburn et al., 2018). In other words, how much weight do the authors place on understanding the benefits of tree planting writ large, versus the benefits of pro-environmental behaviors (where tree planting is a case study of a pro-environmental behavior)? Here, the pro-environmental behavior concept deserves some unpacking. Pro-environmental behavior is operationalized in Whitburn et al. (2018) using self-report measures “covering the six domains [of pro-environmental behavior] (consumerism, energy consumption, mobility and transport, waste avoidance, recycling and social behaviors toward conservation)” (p. 10). Whitburn et al. (2018) relate these self-reported measures of pro-environmental behaviors to tree planting (as a type of past pro-environmental behavior). In contrast, Watkins et al. (2018) consider tree planting as its own concept worthy of investigation and also as an example of “active involvement in urban greening” (p. 84). For Watkins et al. (2018), tree planting is a type of “greening” behavior more akin to gardening (hence their citation of environmental science and urban studies literature); for Whitburn et al. (2018), tree planting is likened to reduced energy consumption and recycling (hence their citation of psychology and environmental studies literature). Because of these different conceptualizations of tree planting, Whitburn et al. (2018) do not cite any of the previous literature about the impact or outcomes of tree planting in its own right, while Watkins et al. (2018) center their literature review on existing research related to urban tree planting but do not connect their analyses to broader pro-environmental behavior research. These differences are underscored by the word clouds of titles of literature cited displayed above (Fig. 1).

3.4. The streetlight effect

None of these hypotheses – disciplinary origins of authors, different search terms in different databases, nor conceptual differences in the treatment of core concepts – provide an excuse for purportedly interdisciplinary researchers. Interdisciplinarity is about integrating and blending of frameworks, theories, and methods from across disparate disciplines in an effort to create new frameworks, theories, and methods suitable to investigating a particular problem (e.g., Polk 2014). Principally, those of us like myself who seek to be *transdisciplinary* researchers – that is, involving the knowledge, values, perspectives, and skillsets of practitioners, stakeholders, and decision makers in our research in order to “do science together with society” (Mauser et al., 2013) – should be hypersensitive to the disciplinary and sectoral blinders we may carry into our research. In order to most fully understand, explain, and, importantly, apply to practice what we are investigating – that is, how engagement in tree planting and other urban greening activities (all of which are examples of pro-environmental behaviors) can improve the qualities of individuals *and* neighborhoods – we have to expand our perspectives. We should not be the drunk searching under the streetlight for our keys when we dropped them in the park. We may be searching in the dark, but we can choose where, with whom, and with what light we search. We need to seek out venues outside our comfort zones and talk to one another more; to be more intentional about the language we use; to be mindful of the worldviews we hold, biases we have, and assumptions we make.

4. Look what you made me do – implications for researchers

The lessons I take from this exercise for my own work are both philosophical and practical. Philosophically and conceptually, I plan to exercise greater critical and creative thinking in the research design

phase. I can think of tree planting and urban greening and the outcomes of these as not *just* tree planting and urban greening but as connected to larger ecological, sociocultural, economic, even political phenomena. When I’m asking a research question or designing research methods, I can make a practice of asking myself what another discipline might think: *Would the field of psychology ask this question differently? What measures would a biologist use here? How would an economist investigate the relationship between these two phenomena?* I can also self-interrogate my own disciplinary biases by asking, for instance, *How do my own academic training, prior experiences, worldviews, etc., influence how I am approaching this research?*

Practically, there are several specific things I can begin to do differently. In the design and conduct of research, I can change several things in my process moving forward. Most simply, I can get more creative and numerous with my search terms when discovering literature. I can search in a greater variety of the dozens of databases available to me through my university (and I can ask for guidance from the often under-utilized but always incredibly helpful research librarians). I can set table of content alerts for a greater variety of journals at the edges of my field. Perhaps more impactful than creativity in independent literature searching and discovery, I can continue to collaborate but add more individuals from different but complementary disciplines to my research teams. In order to make sure that my team comprises adequate expertise from core disciplines, I will need to be more intentional about seeking out collaborators from different disciplines and stop relying on the academic equivalent of a meet cute to find co-conspirators for research projects. Additionally, I can obtain feedback on research questions, research design, proposed operationalized concepts, and data collection and analytical methods from not only the core team, but from experts in adjacent disciplines. This sort of cross-disciplinary peer review during the literature review and design phases of research, rather than just review by within-discipline experts at the manuscript phase, would dramatically reduce the likelihood that important insights from the literature are missed.

In the text of submitted manuscripts and published articles, I can be more explicit about the limitations of interdisciplinary scholarship. Journal requirements for manuscript length as well as the disciplinary emphases of journals in different fields pose limitations for the depth and breadth of literature that can be considered in any given manuscript. Thus, the literature review sections of a paper cannot, of course, discuss all possible relevant previous research, frameworks, theories, or methodologies. I can, however, point out in my introductions and literature review sections the exact scope of the literature considered by reporting databases searched and keywords used (something that is rarely common practice outside of formal Literature Review articles). I can also be forthcoming about my own perspectives and biases as a researcher (and as a human being, as a citizen of a particular country, living and working in particular places) by explicitly stating in my manuscripts not only the discipline (or disciplines) through which I approach my work, but also my own values and assumptions that indubitably affect my own disciplinary ways of knowing and thinking. Done well, this may also help readers understand the conceptual choices made in study design and operationalization of core research ideas.

In publishing and sharing my work, I can seek to publish not only in journals within my field read by my core audience, but also in related-fields journals that have a broader reach and readership. And I can apply to present at more conferences with a multi- or interdisciplinary theme. A good starting place might be to try to aim perhaps one-quarter of my scholarly output (publications + conference presentations) at venues outside the urban forestry field.

In general, most of these changes are about being more reflective about literature reviewing (see also Gaziulusoy and Boyle 2013) and at all stages of research (see also Binder et al., 2015). Being more mindful about our research practices would probably be helpful for all of us working at the intersection of disciplines.

5. “I am large, I contain multitudes”

Integrative research – interdisciplinarity, and much less transdisciplinarity – is hard to do well (c.f., Binder et al., 2015; Gaziulusoy and Boyle 2013; Mauser et al., 2013; Polk 2014). There are probably a dozen adjacent literature topics that neither Whitburn et al. (2018) nor Watkins et al. (2018) considered but one or both of them could have: the nature of volunteering (both pieces); the participation of nonprofits in provision of the public good that is the benefits of trees once planted (Watkins et al., 2018); the biophysical mechanisms that explain *how* exposure to and experience of nature mediates the relationship of tree planting and pro-environmental behavior (Whitburn et al., 2018); other non-environmental behaviors or activities that individuals or neighborhoods respectively might have engaged in (both pieces); and more. Filtering out the most relevant from a plethora of appropriate prior studies is a significant obstacle to timely research. As documented above and by other authors, additional challenges of inter- and transdisciplinary work include, among others, finding a common language to characterize the research question, frameworks, and methods; collaborating with potentially large teams of researchers (and, in the case of transdisciplinary research, non-researchers); and the relative lack of institutional, structural, and funding support (Binder et al., 2015; Mauser et al., 2013).

If the two articles singled out here are any indication or broader patterns (and I suspect they are), then those of us in the “social benefits of urban forestry” community of scholars, despite all our purported multi-, inter-, or transdisciplinary intents, may have a disciplinary crosstalk problem. I am, of course, implicating myself and my own co-authors in this problem. While the authors of the article published in *Environment & Behavior* did not cite a single article that my coauthors’ and my *Cities* piece did, equally, we did not cite a single article that appeared in their Literature Cited. I don’t fault the authors of Whitburn et al. (2018) – the piece landed in my email inbox via a table of content alert the same week I was forwarded a link to our own published piece by the lead author. As such, Whitburn et al. have possibly been unfairly targeted by my (over) analysis herein. Their scholarship is clearly aimed at those who study environmental knowledge, attitudes, and behaviors. Through publishing in *Environment and Behavior* they likely reach their target audience. It is no fault of Whitburn et al. that the field of urban forestry, which in part studies phenomena such as tree planting, has not yet sufficiently broadened its reach to the ranks of those studying environmental psychology. (Despite being a student of environmental science, I will personally cop to not knowing the field of urban forestry existed until I stumbled into an Urban Forest Management class in graduate school.)

As the arguably narrower field, the sin of omission here is likely on the part of urban forestry and tree planting scholars to better equip ourselves with a lexicon and tools capable of puncturing our urban forestry bubbles. And so, in closing, I would like to make one concrete suggestion to the journals in our field. An interesting way to test the boundaries of (inter) disciplinary inclusivity and to inspire broader reflective discourse in our field might be for a journal to solicit a series of “themed commentaries” from scholars across multiple disciplines on a particular interdisciplinary urban forestry and urban greening research question. This sort of a “reverse literature review” would stimulate researchers to reflect on their own interpretation of and approach to research within an urban forestry topic area. Publication of a themed set of commentaries by authors from different disciplines would pull back the curtain on the “disciplinary ways of knowing” (cf. Carter 2007) and doing research that are so easily obscured in integrative work such as urban forestry. We should aspire to more fully multi-, inter-, and trans-disciplinary scholarship that strives for a holistic and systemic understanding our cities, our forests, our people, and our world.

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References

- Binder, C.R., Absenger-Helmli, I., Schilling, T., 2015. The reality of transdisciplinarity: a framework-based self-reflection from science and practice leaders. *Sustain. Sci.* 10, 545–562. <http://dx.doi.org/10.1007/s11625-015-0328-2>.
- Carter, M., 2007. Ways of knowing, doing, and writing in the disciplines. *Coll. Compos. Commun.* 58, 385.
- Conway, T.M., 2016. Tending their urban forest: residents’ motivations for tree planting and removal. *Urban For. Urban Green.* 17, 23–32. <http://dx.doi.org/10.1016/j.ufug.2016.03.008>.
- Daniels, J.M., Robbins, A.S.T., Brinkley, W.R., Wolf, K.L., Chase, J.M., 2014. Toward estimating the value of stewardship volunteers: a cost-based valuation approach in King County, Washington, USA. *Urban For. Urban Green.* 13, 285–289. <http://dx.doi.org/10.1016/j.ufug.2014.01.004>.
- Dillman, D.A., Smyth, J.D., Christian, L.M., 2009. *Internet, Mail and Mixed-Mode Surveys: The Tailored Design Method*, 3rd ed. John Wiley & Sons, Inc., Hoboken, NJ.
- Epstein, G., Vogt, J.M., Mincey, S.K., Cox, M., Fischer, B., 2013. Missing ecology: integrating ecological perspectives with the social-ecological system framework. *Int. J. Commons* 7, 432–453.
- Gaziulusoy, A.I., Boyle, C., 2013. Proposing a heuristic reflective tool for reviewing literature in transdisciplinary research for sustainability. *J. Clean. Prod.* 48, 139–147. <http://dx.doi.org/10.1016/j.jclepro.2012.04.013>.
- Kaplan, R., Kaplan, S., 1989. *The Experience of Nature: A Psychological Perspective*. Cambridge University Press, Cambridge.
- Mauser, W., Klepper, G., Rice, M., Schmalzbauer, B.S., Hackmann, H., Leemans, R., Moore, H., 2013. Transdisciplinary global change research: the co-creation of knowledge for sustainability. *Curr. Opin. Environ. Sustain.* 5, 420–431. <http://dx.doi.org/10.1016/j.cosust.2013.07.001>.
- Polk, M., 2014. Achieving the promise of transdisciplinarity: a critical exploration of the relationship between transdisciplinary research and societal problem solving. *Sustain. Sci.* 9, 439–451. <http://dx.doi.org/10.1007/s11625-014-0247-7>.
- Roman, L.A., Walker, L.A., Martineau, C.M., Muffly, D.J., MacQueen, S.A., Harris, W., 2015. Stewardship matters: case studies in establishment success of urban trees. *Urban For. Urban Green.* 14, 1174–1182. <http://dx.doi.org/10.1016/j.ufug.2015.11.001>.
- Shakeel, T., Conway, T.M., 2014. Individual households and their trees: fine-scale characteristics shaping urban forests. *Urban For. Urban Green.* 13, 136–144. <http://dx.doi.org/10.1016/j.ufug.2013.11.004>.
- Vogt, J.M., Epstein, G.B., Mincey, S.K., Fischer, B.C., McCord, P., 2015. Putting the E in SES: unpacking the ecology in the Ostrom social-ecological system framework. *Ecol. Soc.* 20, 55.
- Ware, M., Mabe, M., 2015. *The STM Report: An Overview of Scientific and Scholarly Journal Publishing*. The Hague, The Netherlands.
- Watkins, S.L., Vogt, J.M., Mincey, S.K., Fischer, B.C., Bergmann, R., Widney, S.E., Westphal, L.M., Sweeney, S.P., 2018. Does collaborative tree planting between nonprofits and neighborhood groups improve neighborhood community capacity? *Cities* 74, 83–99. <http://dx.doi.org/10.1016/j.cities.2017.11.006>.
- Whitburn, J., Linklater, W.L., Milfont, T.L., 2018. Exposure to urban nature and tree planting are related to pro-environmental behavior via connection to nature, the use of nature for psychological restoration, and environmental attitudes. *Environ. Behav.* <http://dx.doi.org/10.1177/0013916517751009>. 13916517751009.
- van Rijnsvoever, F.J., Hessels, L.K., 2011. Factors associated with disciplinary and interdisciplinary research collaboration. *Res. Policy* 40, 463–472. <http://dx.doi.org/10.1016/j.respol.2010.11.001>.

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