



Norwegian
Business School

This file was downloaded from BI Open, the institutional repository at BI Norwegian Business School <https://biopen.bi.no>.

It contains the accepted and peer reviewed manuscript to the article cited below. It may contain minor differences from the journal's pdf version.

Geraldi, J., Söderlund, J., & Marrewijk, A. van. (2020). Advancing Theory and Debate in Project Studies. *Project Management Journal*, 51(4), 351–356.

<https://doi.org/10.1177/8756972820932002>

Copyright policy of *SAGE*, the publisher of this journal:

Authors “may post the accepted version of the article on their own personal website, their department’s website or the repository of their institution without any restrictions.”

<https://us.sagepub.com/en-us/nam/journal-author-archiving-policies-and-re-use>

Advancing Theory and Debate in Project Studies

Joana Geraldi

Copenhagen Business School, Denmark
jge.ioa@cbs.dk

Jonas Söderlund

BI Norwegian Business School, Norway
jonas.soderlund@bi.no

Alfons van Marrewijk

Delft University of Technology, the Netherlands
BI Norwegian Business School, Norway
Vrije Universiteit Amsterdam, the Netherlands
a.h.van.marrewijk@vu.nl

Introduction

Project studies, in other words, the scholarly inquiry into project-based organizing and working life, is advancing significantly. The field has gained increasing attention from scholars around the world and across disciplines. Not only from organizational theorists and business scholars (Clegg et al., 2002; Sydow et al., 2004; Grabher, 2004) but also sociologists (Scott et al., 2011), psychologists (Chiocchio et al., 2015; Lovallo & Kahneman, 2003), historians (Scranton, 2014), economists (Hirschman, 2015 [1967]); many others explore project-based organizing and its implications to individuals, organizations, and society. The diversity of disciplines has provided a new platform for further theorization and has opened the field for fruitful cross-fertilization with other fields of inquiry (Söderlund, 2011; Davies et al., 2018). We have also witnessed an impressive institutional advancement of the field as international academic journals and research institutions dedicated to project-based organizing grow in number, reputation, and impact. Concomitantly, the field relishes academic legitimacy, as project organizing features frequently in highly ranked journals and recognized international conferences.

The academic and institutional developments have contributed to extending the field beyond its traditional engineering school orientation, which rooted much of its early days (Morris, 2012). Grounded in social theories and humanities, scholars demonstrated the importance of looking at projects as political, social, and cultural entities that span multiple contexts of socially interdependent networks. As a consequence, we are becoming much better equipped to understand the multifaceted and processual nature of contemporary projects (Söderlund, 2011) and project

ecologies (Grabher, 2004). Thus, project studies are not only growing in volume and variety, but also advancing in legitimacy and sophistication.

In light of this development, we can expect the field to grow, but we cannot expect it to bloom. The growth increases the diversity of scholars, inspired by different theories, different empirical settings, and different onto-epistemological traditions. If not connected to a community of scholars with common interests on projects, the diversity can lead to fragmentation (Knudsen, 2003; Söderlund, 2011), and thereby the field could fail to benefit from an inspiring community of scholars. The core of such an academic community are theories and debates, working in tandem (Chalmers, 1976) to advance our understanding of the field. We believe that in a vibrant academic community, different views will clash and raise debates, which will call for strengthening of our thinking and position, better and more carefully crafted arguments, more empirical data, and so forth. Hence, cross-fertilization and debates fuel our theorizing practices (Davies et al., 2018), and help advance project studies not only in size and legitimacy but also in understanding and sophistication of thought. Thus, grounded in a dialectical view of research, this special issue opens a space in project studies, where project scholars can voice their opinions and draft bold theorizing in the forms of essays and conceptual articles.

Advancing Debate and Theorizing

This special issue was borne out of an ambition to stimulate a vivid academic debate addressing some of the fundamental theoretical issues within the broad area of project studies. To some extent, when we launched the idea, we were increasingly uncomfortable with the lack of academic debates, disagreements, and provocative claims that were needed to bring insightful theories to project studies and develop new ones. Our concerns evolved in tandem with other areas of social science and organization theory scholars who have called for more elaborate theorizations, problematizations of core assumptions, and explorations of contradictions, what we called *Type 3 research* (Gerald & Söderlund, 2018). Our efforts are also aligned with earlier calls for critical project studies and the advancement of theories of projects (Cicmil et al., 2006; Packendorff, 1995; Söderlund, 2004).

Building on the duality of debates and theorizing, we called for project scholars to develop essays to fuel the debates and conceptual papers to enhance the theorizing. First, answering to Gabriel's (2016) call, we encouraged the development of essays to open space to fertile debates. The current publication games, that is, the pressure to publish frequently and at high quality journals, driving academic research and thinking, essays became an endangered genre (Alvesson & Gabriel, 2013). Such development is unfortunate. According to Gabriel (2016, p. 244) an essay

gives “a voice to an author’s creative imagination...[it] authorizes opinion, ... not as an expert or as a witness but as a thinking subject... [It] allows is the use of different forms of reasoning, including analogies, illustrations and narratives, as well as different legitimate rhetorical and stylistic devices which appeal to emotion to explore, develop, defend, challenge or qualify a position.” Essays are a useful genre of intellectual and academic thought that supports Type 3 research (Geraldi & Söderlund, 2018). Following Gabriel (2016, p. 246), “the essay as a genre represents a dual intervention against what it declares as a status quo – an intellectual or academic intervention that challenges established ways of thinking as well as a political intervention that challenges the political interests supported by these ways of thinking.” Thus, we asked contributors to “construct their voices” as project scholars, personal and vested, to come with contributions that would defend well-argued, solid opinions about theories or attempts of theorizing.

Second, we support the *PMJ*[®] Editorial Board’s decision to enhance the position of *PMJ* in terms of publishing interesting advancements of theory (Müller & Klein, 2018). Therefore, with this call for papers, we want to stimulate exploratory thinking and bold theorizing to further develop project studies as a scholarly field. We were specifically looking for organization and management theories that are relevant to project studies, as well as contributions demonstrating how project studies can enrich the fields of organization and management more generally. In that respect, we are trying to discuss how project studies might be advanced and how project studies might benefit from theorizations in other related areas, such as organization theory, sociology, and psychology. Equally important for the long-term sustainability of our field, we should also address how project studies might advance management and organization studies, so that it does not become an isolated area of knowledge without impact on surrounding fields. We do believe that project studies have something to offer to the larger field of management and organization studies; and, to be able to do so, calls for new paths of meta-theorizing (Davies et al., 2018).

We were hoping that the contributions would make us better equipped to move the field further by addressing some of the fundamental issues in our field. Such papers would ultimately contribute to our understanding of why projects exist, how they differ (Van Marrewijk et al., 2016), how they behave (Aubry, 2011), how they are managed (Söderlund, 2004), and how they relate with broader institutional contexts (Sydow & Staber, 2002).

The topic of advancing theory and debate in project studies emerged in discussions at the EGOS (European Group of Organization Studies) conference in Tallinn, Estonia, in the summer of 2018. The Tallinn Creative Hub, a refunctioned power station in which the EGOS conference party was organized, gave space to a lively discussion and interest in the topic of stimulating debate in project studies, which matched our interest in stimulating theoretical developments in project

studies. We combined our efforts in a call for papers on theory and debate in project studies. The development of the special issue was also supported by a co-writing workshop in Copenhagen, hosted by the Department of Organization at Copenhagen Business School. In the workshop, some of the editors and authors met and discussed the ongoing debates, as well as the lack thereof, in project studies. The stimulating conversations informed this editorial and the review process.

Rethinking the Publication Process

Our call for theorizing and debate required an innovative review process. As argued by Gabriel (2016): “A research paper that strongly divides reviewers ends up either rejected or revised to the point where most criticisms are silenced.” We therefore instructed the reviewers to rethink common reviewing practices, and allow strong opinions and a liberty in style that is less formulaic and potentially refreshing, and yet, strongly oppose to “narcissistic, cliché-ridden, incoherent, politically ultra-correct, pompous, pretentious, timid or simply full of hot air” (Gabriel, 2016, p. 249). Within this general frame, two criteria guided the review process. First, the contribution should present a cogent and persuasive theoretical argument. Second, it should contribute to debate and theorizing on a relevant topic within project studies. We asked reviewers to reflect on the contribution based on the following questions: Is the idea interesting and/or provocative? Does it have potential to catalyze new ways of thinking in project studies? To what extent does it also address more fundamental theoretical challenges in management and organization studies?

We needed an innovative and developmental review process to ensure that papers received the feedback required to improve the ideas and theories presented in each of the papers. The process was far from straightforward. In reflection, we changed the institutionalized roles that enabled the seemingly smooth review processes (Bechky, 2006; Van Marrewijk et al., 2016). Both the reviewers and editors found ourselves questioning whether the papers were acceptable, as they, sometimes, clashed with our institutionalized views of a traditional journal paper. At the same time, we enjoyed reading well-crafted arguments presented in refreshing formats, making us rethink and question old truths.

The outcome was a combination between what one could consider as traditional theoretical/conceptual papers and more essay-like contributions. The call for papers attracted 47 proposals, of which 23 were invited to be developed into a full paper. After a double-blind review process with two to four revisions, the first seven papers are published in this special issue. and A second set of papers are still under review and will be published in a *PMJ* special issue at a later stage.

Overview of the Articles in this Special Issue

Next, we will introduce the accepted articles in this first special issue. We have clustered the articles inductively. This thematic division is far from perfect, as many of the articles span across the themes. As such, however, this division helps connect the articles logically with each other and also ties the articles with a more general discussion on what value can be added to project management theory.

Project Citizens: Living through and in Projects

The first group of articles discuss what it means to live and work in and through projects. They focus on the inner dynamics of projects and its consequences to individuals participating in projects. For a long time, these inner dynamics have been overshadowed by an outside, epic, perspective on a (mega)project's budget, planning, and scope (Van Marrewijk, 2015). Inner dynamics entails issues of sensemaking, identity, social interaction, power relations, and their social reproduction in projects (Brookes et al., 2014; Cicmil & Gaggiottia, 2014). These reflections form the background for profound discussions on the nature of individuals working in projects as well as contributions to theory and our understanding of projects.

The article by **Arne Carlsen and Tyrone Pitsis**, entitled *We Are Projects: Narrative Capital and Meaning Making in Projects*, introduces (biographical) narratives in project studies. The attention to narratives and biographical methods in organization and management literature (Boje, 1991; Czarniawska, 1998) hasn't been connected yet to project studies. Carlsen and Pitsis build upon the concept of narrative capital (Ricoeur, 1991) to focus on the voices and experiences of those living, breathing, and kindling life into projects. They understand projects as naturally storied units of experiencing, which play vital roles in how project managers create their lives. Project managers for example, attribute narrative elements from their projects to enrich their own professional life story (. Project members thus embark upon their adventures where challenges are met, and risks are handled, and tell stories about their thrilling experiences, elaborating on successive retellings and thus enriching the life story of the leader.

The article by **Johann Packendorff, Karin Berglund, and Monica Lindgren**, entitled *The Worthy Human Being as Prosuming Subject: 'Projectified Selves' in Emancipatory Project Studies*, explores the consequences of projectification of society to individuals. Based on the concepts of *entrepreneurial selves* and *prosumption*, Packendorff proposes the concept of the *projectified self* and analyzes how individuals construct themselves as an object of value to organizations and society. He critically discusses what this means to individuals and society. The author concludes

with a research agenda, calling for future emancipatory studies that can maintain a critical voice about the consequences of the projectification of society.

Project Society: Reflecting and Organizing 'Value' Through Projects

The second group of articles centers on projects as value-creating mechanism. Project-related research has treated projects as vehicles for defining, creating, and delivering value, dominantly perceived as the worthiness of the project or its deliverables, dealing both with the immediate financial outputs of the project (Martinsuo et al., 2019). Projects do not immediately deliver value through reaching scope, time, and cost goals, but they also produce value through benefits and outcomes over the life cycle of the project. This set of articles explores new ways of theorizing of projects as value-creating mechanisms through the lens of finance theory (Styhre), of organizational theory on values as ideology (Martinsuo), and of the theoretical ideas of economist Hirschman (Kreiner).

The article by **Alexander Styhre** on *Thinly and Thickly Capitalized Projects: Theorizing the Role of the Finance Markets and Capital Supply in Project Management Studies*, focuses on the topic of how finance capital increasingly defines projects. Although financing is a very important component of projects, there is little attention in project studies on how finance capital defines the assessment of projects and their worthiness for investment, given projected revenues and rents. Building on finance theory, Styhre claims that projects should be understood in their "broader financial, regulatory, and political context wherein projects are developed, operate, and evolve." Therefore, he calls for evaluating the influence of new financial instruments on the execution of projects. Two types of projects are discussed: those in which uncertainty can, such as housing projects, be reduced through a combination of subsidies, insurances, or exemptions; and those in which uncertainty cannot be reduced, such as life science venture projects. The supply of finance capital determines the conditions under which projects are initiated, planned, and managed.

Miia Martinsuo criticizes in her contribution, entitled *The Management of Values in Project Business: Adjusting Beliefs to Transform Project Practices and Outcomes*, the traditional view assuming project values to be predominantly financial worthiness and measurable benefits. This focus on *hard value* obfuscates the true value of a project, because it does not include other related benefits and costs. Therefore, she develops an alternative perspective of project value based upon the concept of values as beliefs. Based upon the concept of values from organization sciences (Schein, 1985; Hatch, 1993), project value is understood to be subjective, not the same for all stakeholders, and dynamic, evolving over time with stakeholders seeing the full value of the project only long after its completion. Furthermore, Martinsuo sees a tension between diverse value

dimensions and the prioritization among them, as well as a gap between expected and achieved value. The article thus extends the debate on value management with organization culture theory.

Kristian Kreiner's essay on *Conflicting Notions of a Project: The Battle Between Albert O. Hirschman and Bent Flyvbjerg* sheds new light into the most vivid debate in project studies today: Hirschman's versus Flyvbjerg's view on the hiding hand principle—a theory that examines how ignorance in the formative stage of projects may be benevolent as it underestimates not only the costs but also people's ability to respond creatively to obstacles. Kreiner suggests a novel framing on this debate, not as a matter of disagreements on facts, but a matter of disagreements on practical (or value) judgment. While Flyvbjerg values getting things right at the outset, Hirschman opens the opportunity for getting things right at the end. Most fundamentally, by reflecting on the reception of Hirschman's ideas in project studies, Kreiner elucidates how values and assumptions might encourage project scholars and practitioners to learn the same lessons over and over again, and thereby reinforce “the awkward body of knowledge in which the field is currently entrapped, philosophically, theoretically, and practically.” Kreiner therefore challenges project scholars not to accept ideas from other fields, but instead to draw inspiration from these ideas and “do the rethinking ourselves.” In this regard, Kreiner's essay contributes not only to a discussion on project value but also to project scholarship. Finally, Kreiner's contribution fits Gabriel's description of an essay at its best, “an object of beauty, affording readers a degree of aesthetic pleasure in the text itself, while provoking them to look at the world with fresh eyes.” (Gabriel, 2016, p. 246).

Project Scholarship: Enriching Organization and Management Theory

The third group of articles centers on how project studies can enrich organization and management theories and, by doing so, thus further develop project theory. Putting it mildly, the general interest of organization and management journals for project studies is not overwhelming. However, project and general management research are increasingly being linked. Theoretical contributions and publication outlets have moved beyond the traditional project management journals (Geraldi & Söderlund, 2018). For example, there is a growing theoretical interest in the concept of temporary organizations, resulting in the much quoted Organizations Studies special issue on temporal organizations (Bakker et al., 2016). The two articles in this group embrace this issue in two complementary forms. First, Jacobsson and Söderholm propose avenues to bring insights of projects into general management audience. Second, Dille, Hernes, and Vaagaasar follow these avenues and enrich the organization and management debate with a discussion on temporality.

Jacobsson and Söderholm, in their article *Project Studies Beyond the Straightjacket: An Escape Artist's Manual* note that, despite the relevance of projects to economy and society, projects

as an empirical field have received limited attention by general management and organization theorists. As we argued earlier, this trend has been changing in recent years, yet, we also agree with the authors that progress is required. In a lighthearted tone, Jacobsson and Söderholm address the struggles of project scholars to reach out to general management and organization studies communities. Building on phenomenology of science, the authors propose and exemplify a four-step “escape artist manual” to help project scholars to break out of project studies, and frame possible contributions to the larger academic community. Breaking out is important not only for the academic careers of project scholars but also for the field itself as it gains legitimacy. Moreover, as Kreiner argues in his contribution, breaking out could, if done well, confront our thinking with our presumed values, and open the opportunity to learn something new.

In their article, *The Challenges of Implementing Temporal Shifts in Temporary Organizations: Implications of a Situated Temporal View*, **Dille, Hernes, and Vaagaasar** delve into one of the fundamental aspects of projects: temporality—how people experience and relate to time. Historically, project scholars have tended to confine temporality to notions of duration. The authors, instead, propose a dynamic view of temporality, highlighting that the duration itself is dynamic, and related to the time that is left, and the time that has passed. In this way, the authors point to consequences for individuals living in projects and their perception of time. They then bring a situated temporal view on projects, which represents a strong process approach to understanding the nature of time and temporality in temporary organizations (Bakker et al., 2016).

Conclusions and Future Research Opportunities

This special issue invited scholars to broaden the theoretical foundation of project studies with theories and debates. We thank the authors and reviewers involved in the development of the special issue for their courage to embark in this experiment, venturing into an innovative style of writing and reviewing. With a certain risk of petrifying the rethinking (see the Kreiner article in this issue), the invitation has resulted in seven academic contributions developing theories from a wide range of theories; finance theory (Styhre), identity theory (Packendorff; Carlsen & Pitsis), values as ideology (Martinsuo), and temporality in temporary organizations (Dille et al.). With these contributions the special issue has offered suggestions along with the aim to stimulate explorative thinking and bold theorizing and thereby further develop project studies as a field of inquiry and generate debate among project scholars on core topics and assumptions.

We especially feel that the escape route of project scholars (see Jacobsson & Söderholm) is very interesting for developing new theories for project studies. The linking of project and general management research clearly deserves more attention, but is far from easy. Scholars connecting

these two fields experience, as in any other interdisciplinary study, differences in standards of quality scholarship, jargon, reviewer practices, and research methodologies. Frequently, debates are held at separate conferences; to facilitate the development of new ideas, new arenas that can transcend diverse academic networks need to be established (Davies et al., 2018). Based upon our personal experiences this all seems to be a burden at first sight, but combining two academic fields actually enriches one's thinking and research.

Although a wide diversity of topics has been covered, we have undoubtedly missed others. Some additional ideas were sparked during our discussions, based on considering the domains not really covered in this special issue, including but not limited to the following; strategizing theory, routine literature, ritual literature, narrative theory, sensemaking, organizational attention, ethics, materiality, and many others. Also, as part of the development of an inspiring academic community, we would have welcomed also methodological contributions. We, thereby, suggest bolstering discussions concerning matters around research methods, for example, narrative analysis, biographical methods, shadowing, mixed methods, auto-ethnography, and engaged scholarship.

We are aware that the call for papers inspired scholars to contribute to the academic debate—much more research than could be included in this special issue—and a lot of proposals were quite interesting but were not selected during the process. We follow with great interest how the other original proposals may come to develop and eventually appear in other journal issues and how the articles in this special issue spark not only new research openings, but also the conversation and debate among scholars. In this regard, we hope the special issue will find audiences and foster more elaborated debates and theorizing in project studies.

References

- Alvesson, M., & Gabriel, Y. (2013). Beyond formulaic research: In praise of greater diversity in organizational research and publications. *Academy of Management Learning & Education* 12(2), 245-263..
- Aubry M. (2011). The social reality of organizational project management at the interface between networks and hierarchy. *Project Management Journal*, 4(3), 436-457.
- Bakker, R. M., DeFillipi, R., & Sydow, J. (2016). Temporary organizing: Promises, processes, problems. *Organization Studies*, 37(12), 1703-1719.
- Bechky, B. A. (2006). Gaffers, gofers, and grips: Role-based coordination in temporary organizations. *Organization Science*, 17(1), 3-21.

- Boje, D. M. (1991). The storytelling organization: A study of story performance in an office-supply firm. *Administrative Science Quarterly*, 36(1), 106-126.
- Brookes, N., Dainty, A., & Fellows, R. (2014). ESRC seminar series. Cultural issues for project organizations: developing theory and practice. *Engineering Project Organization Journal* 4(2-3), 59-64.
- Chalmers, A. (1975) *What Is This Thing Called Science?* Queensland: University of Queensland Press.
- Chiocchio F, Kelloway EK and Hobbs B. (2015) *The Psychology and Management of Project Teams*. Oxford: Oxford University Press.
- Cicmil S and Gaggiottia H. (2014) The 'slippery' concept of 'culture' in projects: towards alternative theoretical possibilities embedded in project practice. *Engineering Project Organization Journal* 4(2-3): 134-146.
- Cicmil S, Williams T, Thomas J, et al. (2006) Rethinking Project Management: Researching the actuality of projects. *International Journal of Project Management* 24(8), 675-686.
- Clegg SR, Pitsis TS, Rura-Polley T, et al. (2002) Governmentality Matters: Designing an Alliance Culture of Interorganizational Collaboration for Managing Projects. *Organization Studies* 23(3), 317-337.
- Czarniawska B. (1998) *A Narrative Approach to Organization Studies*, London: Sage.
- Davies A, Manning S and Söderlund J. (2018) When neighboring disciplines fail to learn from each other: The case of innovation and project management research. *Research Policy* 47(5), 965-979.
- Gabriel Y. (2016) The essay as an endangered species: Should we care. *Journal of Management studies* 53(2), 244-249.
- Geraldi J and Söderlund J. (2018) Project studies: What it is, where it is going. *International Journal of Project Management* 36(1), 55-70.
- Grabher G. (2004) Temporary Architectures of Learning: Knowledge Governance in Project Ecologies. *Organization Studies* 25(9), 1491-1514.
- Hatch MJ. (1993) The Dynamics of Organizational Culture. *Academy of Management Review* 18(4), 657-693.
- Hirschman AO. (2015 [1967]) *Development Projects Observed*, Massachusetts: The Brookings Institute.
- Knudsen C. (2003) Pluralism, scientific progress, and the structure of organization theory. In: Tsoukas H and Knudsen C (eds) *The Oxford Handbook of Organization Theory*. Oxford: Oxford University Press.

- Lovullo D and Kahneman D. (2003) Delusions of Success. How Optimism Undermines Executives' Decisions. *Harvard Business Review*.
- Martinsuo M, Klakegg OJ and Van Marrewijk AH. (2019) Introduction: delivering value in projects and project-based business. *International Journal of Project Management* 37(5), 631-635.
- Morris PWG. (2012) A brief history of project management. In: Morris PWG, Pinto JK and Söderlund J (eds) *The Oxford Handbook of Project Management*. Oxford: Oxford University Press, 15-36.
- Müller R and Klein G. (2018) What Constitutes a Contemporary Contribution to Project Management Journal®? *Project Management Journal* 49(5)1-2.
- Packendorff J. (1995) Inquiring into the temporary organization: new directions for project management research. *Scandinavian Journal of Management* 11(4), 319-333.
- Ricoeur P. (1991) Narrative identity. *Philosophy today* 35(1), 73-81.
- Schein EH. (1985) *Organizational Culture and Leadership*, San Francisco: Jossey Bass.
- Scott WR, Levitt RE and Orr RJ. (2011) *Global Projects. Institutional and Political Challenges*, Cambridge: Cambridge University Press.
- Söderlund J. (2004) Building theories of project management; past research, questions for the future. *International Journal of Project Management* 22(3), 183-191.
- Söderlund J. (2011) Pluralism in project management: navigating the crossroads of specialization and fragmentation. *International Journal of Management Reviews* 13(2), 153-176.
- Scranton, P. (2014) Projects as a focus for historical analysis: surveying the landscape. *History and Technology*. 30(4), 354-373.
- Sydow J, Lindkvist L and DeFillipi R. (2004) Project-Based Organizations: Embeddedness and Repositories of Knowledge: Editorial. *Organization Studies* 25(9), 1475-1489.
- Sydow J and Staber U. (2002) The institutional embeddedness of project networks: the case of content production in German television. *Regional Studies* 36(3), 215-227.
- Van Marrewijk AH. (2015) Inside megaprojects. Understanding cultural practices in project management. In: Clegg SR (ed) *Advances in Organization Studies*. Copenhagen: Copenhagen Business School Press, 209.
- Van Marrewijk AH and Dessing NSS. (2019) Negotiating reciprocal relationships: practices of engaged scholarship in project studies. *International Journal of Project Management* 37(7), 884-895.
- Van Marrewijk AH, Ybema S, Smits K, et al. (2016) Clash of the Titans: Temporal organizing and collaborative dynamics in the Panama Canal Megaproject. *Organization Studies* 37(12), 1745-1769.

