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Addressing the Evaluation-Implementation Gap in Infrastructure Megaproject Research with Qualitative Comparative Analysis

Stefan Verweij

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Abstract

In this book chapter, I argue that there is a gap between the evaluation and implementation of mega projects, and I advocate Qualitative Comparative Analysis (QCA) as a remedy notably in transport infrastructure research and evaluation. Mega project evaluation tends to focus excessively on the planning stage, overlooking the complexities involved in the implementation of mega projects. The open-system nature of these projects means that the project outcomes and their causes cannot be predicted and identified unambiguously, which in turn makes it difficult to evaluate the implementation processes. Large infrastructure projects face uncertainty and ambiguity, but their evaluations are often informed by a linear-rationalist, objectivist worldview, which compromises the capacity of evaluation to promote learning. I advocate QCA as a complexity-informed evaluation approach, able to account for key phenomena associated with mega projects, notably their non-decomposability, contingency, non-compressibility and time-asymmetry. Illustrating the arguments by drawing on the Dutch € 2 billion transportation infrastructure project A15 Maasvlakte-Vaanplein, the chapter concludes by discussing the applicability of QCA for mega project research and evaluation.

References

- Atkinson, R., 1999. Project management: cost, time and quality, two best guesses and a phenomenon, it's time to accept other success criteria. *International Journal of Project Management*, 17 (6), 337–342.
- Befani, B., 2013. Between complexity and generalization: Addressing evaluation challenges with QCA. *Evaluation*, 19 (3), 269–283.
- Befani, B., Ledermann, S., and Sager, F., 2007. Realistic evaluation and QCA: Conceptual parallels and an empirical application. *Evaluation*, 13 (2), 171–192.

Bhaskar, R., 1975. A realist theory of science. London: Routledge.

- Brookes, N. and Locatelli, G., 2015. A megaproject research framework: A guide for megaproject researchers. Leeds: University of Leeds.
- Brookes, N., Locatelli, G., and Mikic, M., 2015. *Learning across megaprojects: The INNOMET working group report*. Leeds: University of Leeds.
- De Bruijn, H., ten Heuvelhof, E., and In't Veld, R., 2010. *Process management: Why project management fails in complex decision making processes*. Berlin: Springer.
- Buijs, J.M., Eshuis, J., and Byrne, D.S., 2009. Approaches to researching complexity in public management. *In*: G.R. Teisman, A. Van Buuren, and L.M. Gerrits, eds. *Managing complex governance systems: Dynamics, self-organization and coevolution in public investments*. New York: Routledge, 37–55.
- Byrne, D.S., 1998. *Complexity theory and the social sciences: An introduction*. Abingdon: Routledge.
- Byrne, D.S. and Callaghan, G., 2014. *Complexity theory and the social sciences: The state of the art*. London: Routledge.
- Caren, N. and Panofsky, A., 2005. TQCA: A technique for adding temporality to qualitative comparative analysis. *Sociological Methods & Research*, 34 (2), 147–172.
- Cilliers, P., 2001. Boundaries, hierarchies and networks in complex systems. *International Journal of Innovation Management*, 5 (2), 135–147.
- Cronqvist, L., 2011. Tosmana: Tool for small-n analysis. Trier: University of Trier.
- Dimitriou, H.T., 2014. What constitutes a 'successful' mega transport project? *Planning Theory & Practice*, 15 (3), 389–392.
- Dimitriou, H.T., Ward, E.J., and Wright, P.G., 2013. Mega transport projects -Beyond the 'iron triangle': Findings from the OMEGA research programme. *Progress in Planning*, 86, 1–43.
- Edelenbos, J. and Klijn, E.H., 2006. Managing stakeholder involvement in decision making: A comparative analysis of six interactive processes in the Netherlands. *Journal of Public Administration Research and Theory*, 16 (3), 417–446.
- Edelenbos, J. and Klijn, E.H., 2009. Project versus process management in publicprivate partnership: Relation between management style and outcomes. *International Public Management Journal*, 12 (3), 310–331.
- Edelenbos, J., Klijn, E.H., and Kort, M.B., 2009. Managing complex process systems: Surviving at the edge of chaos. *In*: G.R. Teisman, A. Van Buuren, and L.M. Gerrits, eds. *Managing complex governance systems: Dynamics, selforganization and coevolution in public investments*. New York: Routledge, 172–192.
- Engwall, M., 2003. No project is an island: linking projects to history and context. *Research Policy*, 32 (5), 789–808.
- Flyvbjerg, B., 2009. Optimism and misrepresentation in early project development. *In*: T. Williams, K. Samset, and K. Sunnevag, eds. *Making essential choices with*

scant information: Front-end decision making in major projects. New York: Palgrave Macmillan, 147–168.

- Flyvbjerg, B., Holm, M.S., and Buhl, S., 2002. Underestimating costs in public works projects: Error or lie? *Journal of the American Planning Association*, 68 (3), 279–295.
- Gerrits, L.M. and Verweij, S., 2013. Critical realism as a meta-framework for understanding the relationships between complexity and qualitative comparative analysis. *Journal of Critical Realism*, 12 (2), 166–182.
- Goldstein, J., 1999. Emergence as a construct: History and issues. *Emergence*, 1 (1), 49–72.
- Greene, J.C., 2001. Dialogue in evaluation: A relational perspective. *Evaluation*, 7 (2), 181–187.
- Hak, T., Jaspers, F., and Dul, J., 2013. The analysis of temporally ordered configurations: Challenges and solutions. *In*: P.C. Fiss, B. Cambré, and A. Marx, eds. *Configurational theory and methods in organizational research*. Bingley: Emerald Group Publishing Limited, 107–127.
- Hertogh, M.J.C.M., Baker, S., Staal-Ong, P.L., and Westerveld, E., 2008. *Managing large infrastructure projects: Research on best practices and lessons learnt in large infrastructure projects in Europe*. Baarn: AT Osborne.
- Houtekamer, C., 2015. Bluffen en pokeren om de A15. NRC, 23 Apr.
- Jeffares, S., Sullivan, H., and Bovaird, T., 2013. Beyond the contract: The challenge of evaluating the performance(s) of public-private partnerships. *In*: C. Greve and G.A. Hodge, eds. *Rethinking public-private partnerships: strategies for turbulent times*. New York: Routledge, 166–187.
- Jones, R. and Noble, G., 2008. Managing the implementation of public-private partnerships. *Public Money & Management*, 28 (2), 109–114.
- Jordan, E., Gross, M.E., Javernick-Will, A.N., and Garvin, M.J., 2011. Use and misuse of qualitative comparative analysis. *Construction Management and Economics*, 29 (11), 1159–1173.
- Kärnä, S., Junnonen, J.M., Manninen, A.P., and Julin, P., 2013. Exploring project participants' satisfaction in the infrastructure projects. *Engineering Project Organization Journal*, 3 (4), 186–197.
- Kort, M., Verweij, S., and Klijn, E.H., 2016. In search for effective public-private partnerships: An assessment of the impact of organizational form and managerial strategies in urban regeneration partnerships using fsQCA. *Environment and Planning C: Government and Policy*, 34 (5), 777-794.
- Lehtiranta, L., Kärnä, S., Junnonen, J.M., and Julin, P., 2012. The role of multi-firm satisfaction in construction project success. *Construction Management and Economics*, 30 (6), 463–475.
- Lehtonen, M., 2014. Evaluating megaprojects: From the 'iron triangle' to network mapping. *Evaluation*, 20 (3), 278–295.
- Love, P.E.D., Holt, G.D., Shen, L.Y., Li, H., and Irani, Z., 2002. Using systems dynamics to better understand change and rework in construction project management systems. *International Journal of Project Management*, 20 (6), 425–436.
- Love, P.E.D., Smith, J., Simpson, I., Regan, M., and Olatunji, O., 2015. Understanding the landscape of overruns in transport infrastructure projects. *Environment and Planning B: Planning and Design*, 42 (3), 490–509.
- Van Marrewijk, A., Clegg, S.R., Pitsis, T.S., and Veenswijk, M., 2008. Managing public-private megaprojects: Paradoxes, complexity, and project design. *International Journal of Project Management*, 26 (6), 591–600.

- Marsden, G. and Stead, D., 2011. Policy transfer and learning in the field of transport: A review of concepts and evidence. *Transport Policy*, 18 (3), 492–500.
- Marshall, S., 2009. *Cities, design & evolution*. Abingdon: Routledge.
- Van der Meer, F.B. and Edelenbos, J., 2006. Evaluation in multi-actor policy processes: Accountability, learning and co-operation. *Evaluation*, 12 (2), 201–218.
- Ministerie van Infrastructuur en Milieu, Ministerie van Economische Zaken, and Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2013. *MIRT projectenboek 2014*. Den Haag: Ministerie van Infrastructuur en Milieu.
- Morçöl, G., 2001. What is complexity science? Postmodernist or postpositivist? *Emergence*, 3 (1), 104–119.
- Patton, M.Q., 2011. *Developmental evaluation: Applying complexity concepts to enhance innovation and use.* New York: The Guilford Press.
- Pattyn, V. and Verweij, S., 2014. Beleidsevaluaties tussen methode en praktijk: Naar een meer realistische evaluatiebenadering. *Burger, Bestuur & Beleid*, 8 (4), 260–267.
- Pressman, J.L. and Wildavsky, A., 1984. *Implementation: How great expectations in Washington are dashed in Oakland; Or, why it's amazing that federal programs work at all, this being a saga of the economic development administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes*. Berkeley: University of California Press.
- Priemus, H., Flyvbjerg, B., and Wee, B.V., eds., 2008. *Decision-making on megaprojects: Cost-benefit analysis, planning and innovation*. Cheltenham: Edward Elgar.
- Prigogine, I., 1997. *The end of certainty: Time, chaos, and the new laws of nature*. New York: The Free Press.
- Ragin, C.C., 1987. *The comparative method: Moving beyond qualitative and quantitative strategies*. Berkeley: University of California Press.
- Ragin, C.C., 2000. *Fuzzy-set social science*. Chicago: The University of Chicago Press.
- Ragin, C.C., 2008. *Redesigning social inquiry: Fuzzy sets and beyond*. Chicago: The University of Chicago Press.
- Rescher, N., 1995. *Luck: The brilliant randomness of everyday life*. Pittsburgh: University of Pittsburgh Press.
- Reynaers, A. and Verweij, S., 2014. Kritisch kijken naar kansen: De schaduwzijden van DBFMO. *ROmagazine*, 32 (4), 32–34.
- Rihoux, B. and Ragin, C.C., eds., 2009. *Configurational comparative methods: Qualitative comparative analysis (QCA) and related techniques.* Thousand Oaks: Sage.
- Rijkswaterstaat, 2012. *Rijkswaterstaat: About us*. The Hague: Ministry of Infrastructure and the Environment.
- Rittel, H.W.J. and Webber, M.M., 1973. Dilemmas in a general theory of planning. *Policy Sciences*, 4 (2), 155–169.
- Rogers, P.J., 2011. Implications of complicated and complex characteristics for key tasks in evaluation. *In*: K. Forss, M. Marra, and R. Schwartz, eds. *Evaluating the complex: Attribution, contribution, and beyond*. New Brunswick: Transaction Publishers, 33–52.
- Salling, K.B. and Nielsen, O.A., 2015. Uncertainties in transport project evaluation: Editorial. *European Journal of Transport and Infrastructure Research*, 15 (3), 282–285.

- Sanderson, J., 2012. Risk, uncertainty and governance in megaprojects: A critical discussion of alternative explanations. *International Journal of Project Management*, 30 (4), 432–443.
- Sayer, A., 2000. *Realism and social science*. London: Sage.
- Schneider, C.Q. and Wagemann, C., 2012. Set-theoretic methods for the social sciences: A guide to qualitative comparative analysis. Cambridge: Cambridge University Press.
- Short, J. and Kopp, A., 2005. Transport infrastructure: Investment and planning. Policy and research aspects. *Transport Policy*, 12 (4), 360–367.
- Söderholm, A., 2008. Project management of unexpected events. *International Journal of Project Management*, 26 (1), 80–86.
- Teisman, G.R., Van Buuren, A., and Gerrits, L.M., eds., 2009. *Managing complex governance systems: dynamics, self-organization and coevolution in public investments*. New York: Routledge.
- Verbraeken, H. and Weissink, A., 2014. Nieuwe Botlek-brug zorgt voor grootste kostenoverschrijding A15-project. *Het Financieele Dagblad*, 10 Jul.
- Verweij, S., 2015a. Once the shovel hits the ground: Evaluating the management of complex implementation processes of public-private partnership projects with qualitative comparative analysis. Rotterdam: Erasmus University Rotterdam.
- Verweij, S., 2015b. Voorsorteren op de belofte van DBFM: Het juist managen en evalueren van de complexiteit in DBFM-transportinfrastructuurprojecten. *Verkeerskunde*, 66 (2), 16–17.
- Verweij, S., 2015c. Achieving satisfaction when implementing PPP transportation infrastructure projects: A qualitative comparative analysis of the A15 highway DBFM project. *International Journal of Project Management*, 33 (1), 189–200.
- Verweij, S., 2015d. Producing satisfactory outcomes in the implementation phase of PPP infrastructure projects: A fuzzy set qualitative comparative analysis of 27 road constructions in the Netherlands. *International Journal of Project Management*, 33 (8), 1877–1887.
- Verweij, S. and Gerrits, L.M., 2013. Understanding and researching complexity with qualitative comparative analysis: Evaluating transportation infrastructure projects. *Evaluation*, 19 (1), 40–55.
- Verweij, S. and Gerrits, L.M., 2015. How satisfaction is achieved in the implementation phase of large transportation infrastructure projects: A qualitative comparative analysis into the A2 tunnel project. *Public Works Management & Policy*, 20 (1), 5–28.
- Weiss, R.S., 1994. *Learning from strangers: The art and method of qualitative interview studies*. New York: The Free Press.