

BRINGING LIGHT TO THE DARK SIDE OF LEAN CONSTRUCTION: A RESPONSE TO STUART GREEN

Gregory A. Howell¹ and Glenn Ballard²

ABSTRACT

Stuart Green proposes that researchers have ignored the “Dark Side” of lean construction, taking for granted it is a good thing. He charges that these academics are ignoring the debate about the transferability of Japanese automobile manufacturing to other settings, and that lean leads to the repression of trade unions and to regressive human resource management. Along the way he attacks Womack and Jones for their evangelical tone, the rhetoric of lean for its similarity with that of business process reengineering and total quality management, and the failure of lean to apply other lessons from organizational thinkers.

This paper attempts to sharpen the debate by exposing the false foundations of his argument that the debate hinges on “Whether Japanese Methods are based on nice things like loyalty, empowerment, consensus etc. or whether they are based on nasty things like management-by-stress and exploitation.” We argue that Green misses the key foundations of lean which are drawn from a long history of production management thinking which first attempts to manage the physics of production in the service of higher performance.

KEY WORDS

Lean construction, critical theory.

¹ P.E., Director, Lean Construction Institute, Box 1003, Ketchum, ID 83340, 208/726-9989 Fax 208 726 0699, ghowell@micron.net

² Director of Research, Lean Construction Institute, and Lecturer, Construction Engineering and Management Program, Dept. of Civil and Environmental Engineering, University of California at Berkeley, 4536 Fieldbrook Road, Oakland, CA 94619, 510/530-8656, FAX 510/530-2048, ballard@ce.berkeley.edu

INTRODUCTION

Stuart Green in “The Dark Side of Lean Construction: Exploitation and Ideology” (Green 1999b) has attacked various aspects of Lean Construction. Green’s complaints about the propaganda of the marketplace and capitalism and the rhetorical use of lean to achieve political ends mislead the reader into thinking that lean is some sort of political movement or ideology with the aim and result of exploiting workers. In this paper, he extends these ideas from other papers (Green 1998, 1999a) and makes a sharp attack on lean production, the related researcher community, and the application of lean in construction. Issues of exploitation of the workers and ideology are at the heart of his complaints. We believe his attacks are ill considered and themselves rest on a basic misunderstanding of the nature of lean production in general and lean construction in particular. In this paper, we will expose these failures.

THE ARGUMENT

Green claims that the debate about whether Lean is a good thing hinges on “Whether Japanese Methods are based on nice things like loyalty, empowerment, consensus etc. or whether they are based on nasty things like management-by-stress and exploitation.” He then supports his arguments with reference to the history of labor relations and work conditions in Japan and the impact of global competitiveness on the workplace.

While he does cite papers by Howell and Koskela, and *Lean Construction* edited by Alarcon, Green appears not to understand that production management is first about how things are made and not about how people are treated. He simply misses the fact that lean springs from a different way to manage the physics of production, in particular the effects of dependence and variation, and a different way to relate to customers than in mass or craft forms of production. Mass aims to minimize the cost of each activity and ignores the relationship between those activities, working to deliver a product meeting the general requirements of a market place of customers. In contrast, Lean aims to speed delivery of a product meeting the unique requirements of a specific customer. Rapid delivery requires speedy and reliable workflow. The systems necessary to achieve these goals are different than those in place under mass or craft forms of production. (Craft of course can work to meet specific requirements but it is slow and filled with product variations unacceptable in today’s world of electronics and speed.)

New systems with new goals require different organizations. Green claims that “Despite the relatively high wages available (under lean), workers were found to express frequent concerns regarding safety, stress of work, loss of individual freedom and discriminatory practices.” We must suppose he would prefer the same set of concerns with the relatively low wages of other forms of production management. According to Green, other researchers have found that flexibility, quality and teamwork (supposedly the characteristics of a lean organization) in practice become control, exploitation and surveillance. Green continues to question whether lean can be applied beyond the Japanese auto industry despite the success of plants organized around lean production in the United States and Europe. (This argument was

first raised by Western business managers trying to explain away the power of Japanese business methods and to avoid having to change to keep up.)

Again, he may not like the reality of global competition and its potential to destroy industries that do not adopt new thinking such as occurred in the British auto industry, but he is correct to say the choice may be modernize or perish. We are not going to argue that employees have not, are not and will not be abused in the workplace. But Green misunderstands what lean aims to control, that is the speed and variation in the flow of work needed to deliver a custom product.

How is this control achieved under lean? We share, along with Ohno and Green a deep distrust of over-centralization. Where Green sees centralization as always a political decision mostly unpleasant in its expression, we see centralization as one approach to control. Here Green seems to have missed the contributions relating to the application of distributed and centralized control of organizations and systems by Thompson (1967), Galbraith (1973), Mintzberg (1983), Tushman and Nadler (1978), Perrow (1984).and Kelley (1985).

Lean production could attempt to achieve its goals by central or decentralized control. Beginning with Ohno, the balance has shifted toward decentralized control. Decentralized control occurs when workers stop the line to prevent a defective part from passing to the next station. Decentralized control occurs when information on the state of the system is available to everyone operating parts of the system. Surely this is a more empowering circumstance than forcing people to pass along errors and hiding real information.

Green's charge that lean is another example of totalitarian management does not stand scrutiny. He claims that implementing lean first requires greater control of the work force due to the demands of globalization. (We are not going to respond to Green's complaints about capitalism in general and government under Thatcher and Reagan.) Lean is about reducing waste but it has no intention or mechanism to add stress and it is unfair to make such a claim. It is far more reasonable to assume that the stress derives from an inadequate response to global competition. Linking Lean with Taylor likewise misses the point (Although Green does not say exactly where how Taylor offends) In any case Taylor's focus was on activities and their centralized management. Lean is not.

Green moves on to question customer responsiveness. Here again he misses the point and finds darkness. First, he suggests that customer responsiveness in a supply chain requires workers to "act as mindless cogs in a remorseless machine." A visit to a construction site operating under lean or a review of reports from people working on those sites would reveal a different circumstance. Next he claims that meeting customer needs rests on the assumption that such needs exist and raises tobacco as an example. He complains that people buy to enhance status or to enhance self esteem and that the marketing of such products can be traced to techniques developed in Germany and Italy before WWII. So was the jet engine central to travel but can we argue that evil attaches from origin? (He might have raised an interesting argument from Veblen's view that all consumption by the leisure class is waste. (Veblen 1994)

While Green complains that gains from Lean might not translate to the benefit of the customer, and well they may not unless the very competition he fears is in place, he tries to blame lean for the tendency of managers to seek increased wages at the expense of customer

interests . How the gains are to be distributed as a result of reorganizing a production system is a different from how those gains are created. Taylor was attractive to capitalists because it created gains for them; Lenin was attracted to Taylor because its benefits could go to the workers.

In concluding, Green claims that efforts to improve performance should not be undertaken by academics at all. Rather they should work to increase thoughtfulness.

CONCLUSION

Green's argument that the dark side of lean is exploitation and ideology does not hold together. Lean offers a new way to organize production. Exploitation may result from its application but is not a requirement for it. Green must realize this is true for any production technique (or technology in general) is neutral in that they can be used for good or ill purposes. We do not believe lean is a rhetorical cover for greater exploitation.

Is there anything in lean thinking itself that requires harming workers? We don't think so. Green admits that workers under lean earn more. We claim that they have more autonomy in production decisions and enriched jobs as a consequence of the lean principles regarding distributed decision making, multi-skilling, and pursuit of perfection. We doubt that safety and health are worse under lean regimes than mass, even in manufacturing. In construction, lean thinking is arguably the precondition for the next major step forward in accident reduction. Which is more stressful, trying to look busy when there's nothing to do, or working to achievable targets in order to insure flow reliability?

Lean may well have been presented by enthusiastic early adapters as an ideology and this was a mistake. We share Green's distaste for overblown rhetoric that makes some new idea appear to be simple and without challenge. Those in construction who have adopted lean have been uniformly wary that lean may be another buzz word laden ideology and not a real change. They are comforted when they understand that lean solves production problems that cannot be seen or understood in current practice. Green acts as if lean offers no contribution to the theory and practice of production, but is merely a rhetorical cover for exploitation.

On the role of Academics: Green says that we should not work to improve performance and should instead work to increase intellectual capital. Surely ideas that work add to our capital base and those that do not work as well but are in use should be viewed as liabilities. What would Green have us do? It seems to us that he would have construction academics endorse nothing because every theory, technique, and tool may be used for evil purposes. Should we sit on our hands and wait for the advent of the workers paradise?

A PROPOSAL

We cannot test all of Mr. Green's claims, for example that customers would want something else if marketing had not been invented. But we can test his concern that workers under lean are simply unthinking cogs.

We pose the issue as a practical one; i.e., how can we gain the benefits of lean principles and techniques without harming – or better yet enriching - those who do the work? Does reducing lead times, structuring work for flow, pulling materials and information, increasing

plan reliability, and other lean techniques cause workers to do less fulfilling jobs or work harder? We doubt it.

REFERENCES

- Galbraith J. (1973). *Designing Complex Organizations*. Addison-Wesley, Publications, Readings, MA.
- Green, S. (1998). "The Technocratic Totalitarianism of Construction Process Improvement: A critical perspective." *Engrg. Construction and Architectural Management*, 4, 376-386.
- Green, S. (1999a). "The Missing Arguments of Lean Construction" *Construction Management and Economics*, 17(2), 133-137.
- Green, S. (1999b). "The Dark Side of Lean Construction: Exploitation and Ideology" *Proceedings of the International Group for Lean Construction*.
- Kelley, K. (1985) *Out of Control*. Perseus Press.
- Mintzberg, H. (1983). *Structure in Fives: Designing Effective Organizations*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Perrow, C. (1985). *Normal Accidents: Living with High Risk Technology*. Basic Books (Out of print, updated edition available September 1999, Princeton University Press.)
- Thompson, J. (1967). *Organizations In Action*. San Francisco: McGraw-Hill Book Company.
- Tushman, L.M., and Nadler, A D. (1978). "Information Processing as an Integrating Concept in Organizational Design." *Academy of Management Review*, July, pp. 613-624.
- Veblen, T. (1994 Reprint). *Theory of the Leisure Class*. Penguin USA.

