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REVITALIZING LANGUAGE ACTION IN THE LAST PLANNER SYSTEM™

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ABSTRACT

The Last Planner System™ has been instrumental in advancing construction through improved collaboration, reliability, and workflow planning. Building on the foundational principles of the Language-Action Perspective, this paper emphasizes the need to make critical elements of project planning more explicit, namely: the importance of saying 'no' and the visibility of actual work.

An evolution of the Should-Can-Will-Did framework is proposed by explicitly stating *Shouldn't, Cannot, Won't,* and *Did Not*. Incorporating these elements in the presentation of the Last Planner System emphasizes the importance of not taking the preferred outcome for granted while creating space for genuine commitment. Representing the work itself in the system's presentation highlights the dynamic nature of execution, reinforcing the integration of planning and doing. These refinements aim to create a more transparent, resilient, and actionable framework, aligning planning efforts more closely with the complexities of project delivery.

KEYWORDS

Commitment, Language Action, Last Planner System.

INTRODUCTION

The ability to say 'no' is fundamental to fostering trust, reliability, and effective collaboration in construction projects. In Lean Construction, where coordination and commitments are central to project success, the cultural and operational environment must enable participants to openly decline unrealistic or unfeasible requests. Without this capacity, commitments become hollow, weakening trust and the foundations of collaborative planning systems such as the Last Planner System™ (LPS).

Drawing on the Language-Action Perspective (LAP), shaped by Fernando Flores (Flores & Ludlow, 1976; Flores, 1982) and introduced to lean construction by scholars such as Macomber et al. (2003, 2004, 2005), Howell et al. (2004), and Salazar et al. (2018), this paper explores the cultural and practical dimensions of enabling 'no' in the Last Planner System. LAP emphasizes that language is not merely a tool for communication but a form of action through which commitments are made, renegotiated, or declined. Saying 'no,' in this context, is not a rejection of collaboration, but a necessary act to ensure commitments are realistic and reliable. This paper builds on these foundational ideas to propose refinements to the Last Planner System, emphasizing the importance of incorporating the possibility to say no.

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IGLC LITTERATURE REVIEW ON LANGUAGE ACTION

Several works highlight the significance of Language-Action and its application in Lean Construction. Searching for the word language' in earlier IGLC proceedings, 48 hits are listed. Limiting the search to "language action' gives 13 papers, "linguistic' gives 14 papers, and "commitment' 98 papers. Macomber and Howell (2003) introduce the foundational idea of 'conversations for action,' where requests, promises, and declarations form a network of commitments. They argue that enabling explicit and honest conversations, including the ability to decline, is essential for trust and reliability. Cleary et al. (2008) explore promise-based management, emphasizing the cultural shift required to support meaningful promises. This approach highlights that allowing refusals builds trust by aligning expectations with capabilities. Salazar et al. (2018) operationalize LAP principles within LPS by introducing measurable indicators for commitments and trust. In their 2019 study, Salazar et al. further evaluate these indicators by measuring how linguistic commitments impact trust and plan reliability in practice. Their work underscores that a culture of reliable promises depends on explicit agreements, including the right to say 'no.' Parrish (2014) provides a practical example of LAP implementation, demonstrating how improved linguistic clarity, including the ability to negotiate or decline commitments, enhances coordination and organizational effectiveness (Long & Arroyo, 2018; Viana, Formoso & Isatto, 2011; Azambuja et al., 2006).

These perspectives collectively argue that creating a setting where participants can decline requests requires cultural and procedural changes:

1. Cultural Shift: Organizations must normalize refusals as a professional response, framing 'no' as a commitment to reliability rather than a rejection of collaboration.
2. Explicit Agreements: Planning systems like LPS should make the conditions for commitments—including constraints and limitations—explicit and negotiable.
3. Trust and Psychological Safety: Leaders must cultivate an environment of psychological safety where participants feel empowered to express their limitations without fear of reprisal.

While this paper builds on perspectives emphasizing the importance of enabling refusals and fostering trust in commitment-based planning, its primary aim is to propose refinements to the current representation (Ballard & Tommelein, 2021) of the Last Planner System (LPS). The suggested updates seek to better reflect the dynamic nature of commitments by explicitly integrating the possibility of refusal and making the actual work more visible. In doing so, the paper contributes to a broader ambition: to prioritize the integrity of commitments in a way that supports both the human and operational dimensions of project success.

LAST PLANNER SYSTEM BENCHMARK

PURPOSE AND USE

In the latest update of the Last Planner System (Ballard & Tommelein, 2021), the Last Planner extends beyond 'Master Scheduling' to include 'Project Execution Planning' as part of the system. At the highest level, a Go/No-Go decision is introduced, enabling a deliberate assessment of whether a project objective should be included or not.

The subsequent levels are termed Master Scheduling and Phase Scheduling, where decisions are made about what SHOULD be done and by whom. The next level, known as Lookahead Planning, focuses on preparing tasks to ensure they CAN be executed.

Following this, the system progresses to the WILL level, where commitments are made by those responsible for completing specific tasks. Finally, at the lowest level, the focus shifts to comparing what the team DID against the commitments made at the WILL level.

This lowest level, referred to as the Learning Level in the Last Planner System, is designed to facilitate learning from both mistakes and successes, enabling continuous improvement based on reflection and analysis.

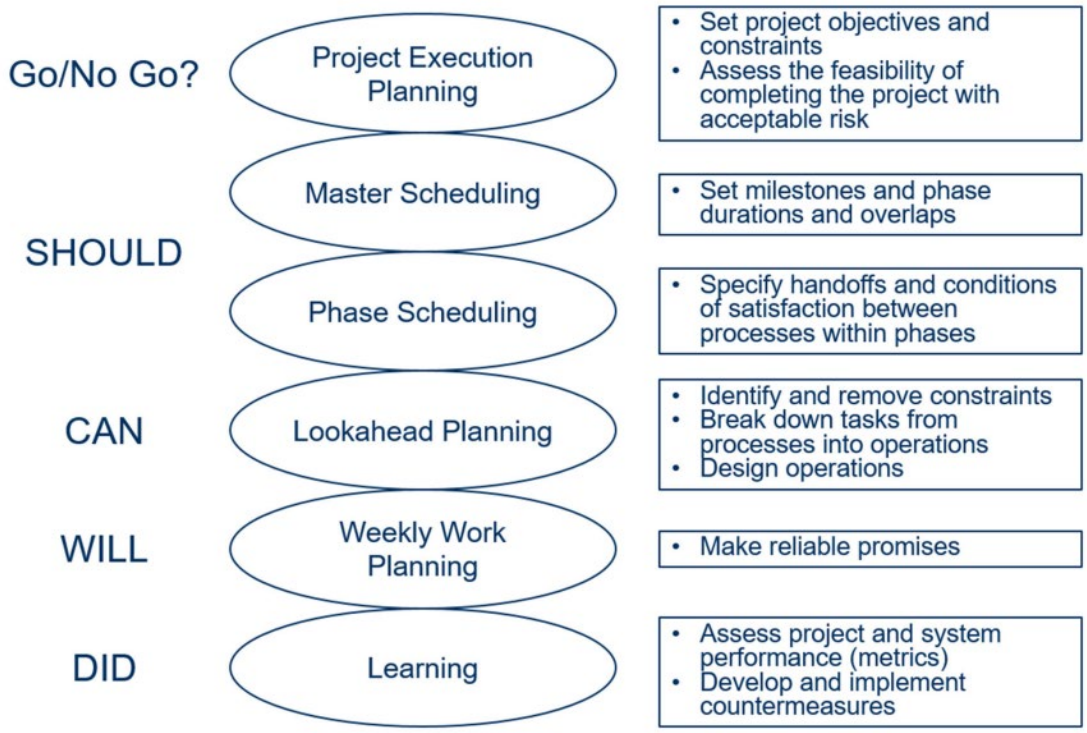

Figure 1 From Ballard and Tommelein, 2021: Figure 2: Last Planner System of Planning and Control - Go/No Go?-SHOULD-CAN-WILL-DID

DISCUSSION

NO GO (PROJECT EXECUTION PLANNING)

We do not elaborate on the Project Execution Planning level in our discussion, as our focus is on planning directly related to production planning and not project planning. By concentrating on these levels, we ensure that our proposed refinements address the practical and operational aspects of work planning.

SHOULD NOT (MASTER AND PHASE SCHEDULING)

A should not statement may prompt disagreements about the scope, level of detail (breakdown structure), and/or sequence of the Master or Phase schedule. As stated by an experienced planner to the first author, *A good plan is one where everyone has made some sort of sacrifice to contribute to the whole and deliver on the project's intended outcomes,* This underscores the importance of reaching compromises to secure the commitment of all parties involved. Emphasizing the principle of 'pull' by delivering on costumer need (Janes & Succi, 2009) can be a valuable guide in identifying the most effective solutions.

Effective project management requires explicitly assessing the acceptability of a plan and creating an environment where individuals feel comfortable providing honest feedback. Any objections or concerns raised must be taken seriously and addressed appropriately. However, if an objection stems from internal priorities or sub-optimization rather than what is best for the project, the argument for prioritizing the overall project must take precedence. When the needs of the whole take priority over sub-optimization, the trade involved must commit to the adjustment for the plan to be considered sound.

If there are indeed stakeholders who believe that a SHOULD NOT statement is appropriate at the master or phase planning level, it is highly advantageous to uncover this perspective at these overarching planning stages. Having someone willing to assert that something SHOULD NOT be done is a significant strength for any planning system.

At this level, it is usually possible to take actions that can transform a SHOULD NOT into a SHOULD, ensuring alignment and commitment. We therefore strongly advocate for a planning process that is open enough to allow all participants to safely express their concerns if they believe something should not be executed.

Neglecting to allow participants to say, *This should not be done*, weakens the integrity of the planning process. Ensuring such openness is essential to the integrity and effectiveness of the planning system.

One could argue that milestones at the master level should be referred to as 'Must Be Done' to emphasize their fixed and non-negotiable nature within the project timeline. Unlike other tasks that may allow some flexibility, true milestones serve as critical anchors that structure the flow of work and coordination across multiple teams. Their stability ensures reliability in project execution and prevents cascading disruptions when dependencies exist. A milestone that lacks significant entanglement with other tasks may not function as a true milestone. Instead, it might be better categorized as a 'Target Date' or 'Checkpoint', reflecting its lower impact on overall project sequencing. The distinction between 'Must Be Done' milestones and less critical deadlines helps reinforce clarity in planning, ensuring that only genuinely crucial constraints are treated with the level of rigidity necessary for effective project control. Depending on how a milestone is interpreted, it may be beneficial to introduce a MUST/MUST NOT distinction at the milestone level. While this paper discusses the potential benefits of such a distinction, we do not incorporate it into the proposed figure, as reaching a conclusion on this matter requires further considerations beyond the scope of this study.

CANNOT (LOOKAHEAD PLANNING)

To identify and establish the preconditions for tasks to be sound before they are allowed to be pulled into the weekly work plan is a core and proactive element of LPS. If tasks are unsound, this creates a CANNOT situation. However, even if tasks are initially deemed sound, many of them still end up lacking something during execution. The culture surrounding task readiness can easily shift toward reporting tasks as sound even when they are not, due to the perception that failing to confirm soundness signals inadequate preparation for the job.

Conversely, if individuals state that they have not checked tasks for soundness and there are no consequences for being unprepared, this could foster a culture where no one sees the need to adhere to the system at all.

Striking the right balance is crucial: creating a safe environment where participants feel comfortable admitting when tasks are not sound, while also setting expectations and requiring that everyone prepares adequately.

WILL NOT (WEEKLY WORK PLANNING)

At the WILL level in the Last Planner System, the focus is on securing a strong commitment to the work to be executed. It is equally important to commit to the work as it is to voice concerns if one believes the commitment cannot be fulfilled.

Our recommendation is that the team leader commits the execution to the level above but ensures that this commitment is grounded in prior agreement with those who will actually perform the work. Each individual must be given the opportunity to say no and express their concerns about why the commitment might not be achievable. When they do so, their eventual yes becomes even stronger and more reliable.

Declining a task does not make the plan obsolete; rather, it prompts the team to take concrete steps to ensure execution remains feasible. Crucially, rejecting a task requires more than vague

responses like 'I'll try' or 'We'll see.' A refusal should be backed by a clear rationale, enabling the team to grasp the constraints and seek alternative solutions. This transparency fosters trust and accountability, ensuring that commitments are based on realistic assessments rather than uncertainty or unwillingness to say no. In such cases, the culture should encourage an extra effort to meet the commitment, reinforcing the importance of reliability. If achieving the commitment is deemed impossible, it is equally critical to raise the issue as soon as possible to allow timely adjustments and minimize disruption.

NOT TO DO (DAILY HUDDLES)

The original figure (Figure 1) depicting the levels of schedules includes only the past and the future of the actual work. We argue for explicitly identifying the actual work in the system, in other words, the present. The practice surrounding the Last Planner System is centered on both the work and the process. Therefore, the system's illustration should clearly convey this priority.

We aim to emphasize this aspect and create space for discussions around the actual work being performed. Daily huddles can, of course, focus on preparations for upcoming tasks, but if the work and commitments are divided at the weekly level, one might consider whether daily huddles should instead be positioned within the scope of the work already committed to.

Daily huddles offer a forum to raise concerns or decline previously committed tasks. This serves as a critical checkpoint, particularly in cases where safety is compromised, or circumstances have changed beyond what was originally planned.

In cases where workers exceed the planned workload, it is beneficial to recognize and provide positive feedback to those involved. Recognizing and responding to high-quality work fosters a culture of collaboration and improvement. Meeting commitments, falling short of them, and exceeding them are all important aspects of the 'to-do' process.

DID NOT (AFTER TASK EXECUTION)

The Did Not events serve two distinct purposes: one qualitative and one quantitative. Qualitatively, they are reintegrated into the scheduling process, where measures are taken to make tasks sound. Quantitatively, the number and trend of Did and Did Not events are made visible through the calculation of Percent Plan Complete (PPC). This visibility provides a foundation for reflecting on and improving the scheduling system in general and the weekly work planning specifically.

The current system effectively tracks Did/Did Not performance through PPC metrics. The lowest level of the system is referred to as 'Learning,' emphasizing the importance of learning from failures, continuously improving, and raising the bar (Ballard & Tommelein, 2021). However, we find this designation somewhat misleading. Following the logic of the planning levels, this stage primarily involves checking and recording the actual work completed against the planned work. Positioning learning only at the bottom of the system suggests that learning is confined to this level (Kalsaas, 2012), whereas every experience throughout the system can trigger learning or contribute to a learning curve (Kolb, 2014).

Ballard and Tommelein (2021) identify five key metrics within the Last Planner System that are designed to improve production performance: Commitment Level (CL), Percent Plan Complete (PPC), Task Anticipated (TA), Tasks Made Ready (TMR), and Frequency of Plan Failures. Underperformance in any of these metrics and others similar metrics represents an opportunity to trigger learning (Kalsaas, 2012), initiated by identifying and addressing deficiencies in one or more metrics. This approach aligns with the system's intent to foster continuous improvement at all levels of planning and execution.

THE POSSIBLE IMPLICATIONS OF THE REFINEMENT

The incorporation of negative outcomes in commitment-making within the Last Planner System (LPS) is not proposed with a simplistic or naive interpretation of its implications. The cultural

dimensions of enabling 'no' in LPS are shaped by significant variations in workplace dynamics, power structures, and professional norms. Factors such as power imbalances embedded in industry-specific jargon, the influence of specialized expertise, strategic maneuvering, communication styles, organizational hierarchies, and defined roles all contribute to the complexity of fostering an environment where refusals can be meaningfully integrated (Howell et al., 2004; Parrish, 2014). Recognizing these challenges is crucial for ensuring that the ability to decline commitments strengthens, rather than undermines, collaboration and reliability. Macomber and Howell (2003) emphasize that linguistic precision and cultural adaptation are necessary for commitments to be effective, reinforcing the need for a nuanced approach to integrating refusals.

From a practical perspective, explicitly integrating the possibility of 'no' in LPS requires mechanisms that allow refusals to be acknowledged and managed constructively. This involves creating clear criteria for when and how commitments can be renegotiated, establishing safe channels for communication, and ensuring that declining a commitment is not perceived as a failure but as a means to uphold the integrity of the planning process (Cleary et al., 2008; Salazar et al., 2018). The notion of trust and psychological safety is critical in this regard. Folkestad and Howell (2007) highlight how early warning signs of unreliable commitments must be addressed proactively rather than suppressed. Similarly, Skaar et al. (2023) argue that commitments should be framed in a way that allows participants to express constraints without fear of negative repercussions. The intention behind the proposed change is to make these issues more visible and to encourage a structured dialogue that enhances trust, accountability, and decision-making within production planning.

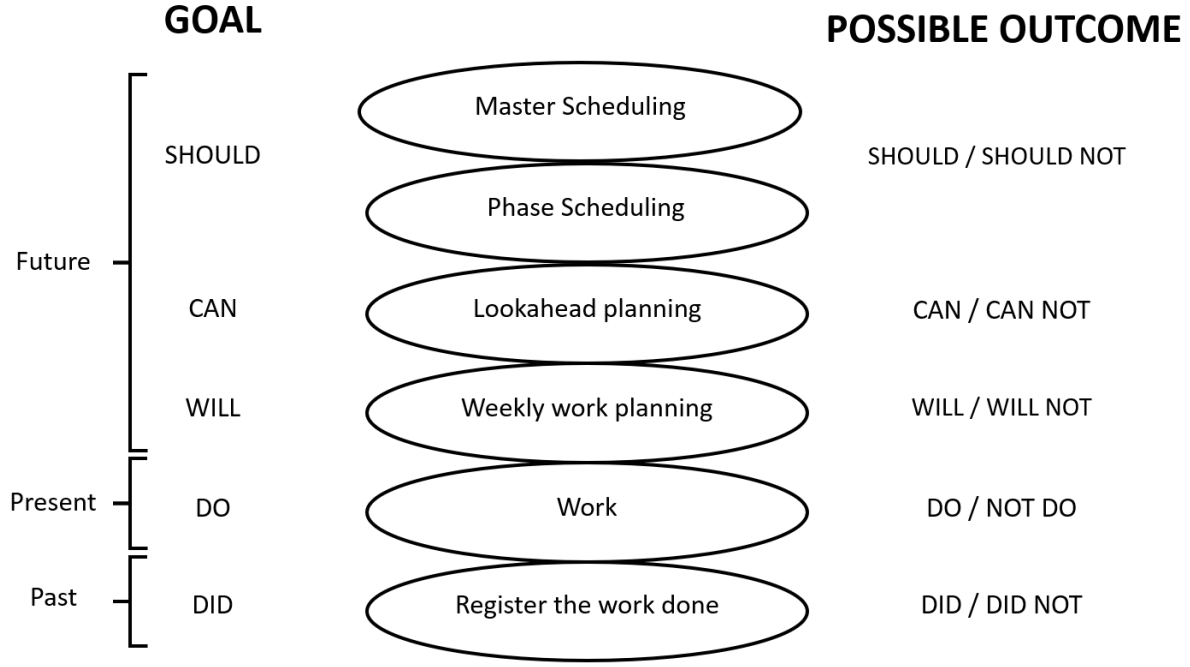

Figure 2 Proposal to include specific visualization of work and negative outcomes from desired goals

CONCLUSIONS

This paper explores refinements to the Last Planner System (LPS), emphasizing the importance of incorporating refusal mechanisms and explicitly recognizing the actual work being performed. Refining the *Should-Can-Will-Did* framework to include *Shouldn't-Cannot-Won't-Did Not* provides a more comprehensive approach to addressing the complexities of project

execution. Additionally, explicitly representing the actual work within the system strengthens the fundamental purpose of planning — ensuring that work is carried out efficiently and safely. Introducing the concepts of *Do* and *Not Do* highlights the inherent complexity and real-time adaptability of execution. Allowing dialogue at this stage can be a crucial feature of the system, enabling responsive decision-making and continuous alignment with project conditions.

Central to these refinements is the cultural and procedural shift toward fostering environments where individuals feel empowered to say 'no' when necessary. This capability strengthens commitments, builds trust, and ensures that promises are grounded in reality rather than misplaced optimism. These changes require cultural adjustments, clear communication frameworks, and procedural improvements at every level of planning. By enabling meaningful discussions about refusals during master and phase scheduling, to ensuring task soundness in lookahead planning, and creating additional checkpoints at the daily huddle level, this refined system provides opportunities for reflection, learning, and continuous improvement.

Ultimately, the integration of these refinements enhances the transparency, resilience, and adaptability of the LPS, ensuring it remains a robust tool for addressing the complexities of construction. By prioritizing the integrity of commitments and the visibility of work, this evolved framework supports both the human and operational dimensions of project success.

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