

WHEN DELAY CASCADES: HOW TASK DEFERRAL, TEAM COMPENSATION, AND GOVERNANCE MASKING DISRUPT PROJECT SCHEDULES

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ABSTRACT

Purpose. Workplace procrastination is predominantly studied through self-report instruments that cannot capture how temporal deferral propagates through interdependent project networks. This study investigates the behavioral signatures of procrastination-consistent task deferral and the mechanisms through which such deferral disrupts project schedule adherence.

Design/Methodology. A partially disclosed non-participant observational design was employed across three maximum-variation projects (construction, information technology, and public-sector infrastructure) over 14 weeks, yielding 186 observation records and 312 hours of field observation. Data were analyzed using structured codebook thematic analysis. A three-level evidentiary framework was used as a construct-validity screen to distinguish directly observable deferral from stronger procrastination-consistent interpretations; it was not treated as a separate frequency-coding scheme.

Findings. The study identifies a Behavioral Deferral Cascade in which task-initiation deferral around project phase transitions interacts with network dependencies, downstream task starvation, team compensation, and governance visibility. The source data show that task-initiation deferral at phase boundaries was coded in 67 of 186 observation records, while downstream task starvation was coded in 54 records, schedule compression in 41, silent workload absorption in 41, and insufficient progress visibility in 31. The pattern suggests that localized temporal variance can be amplified structurally and then concealed when teams preserve milestones through unplanned compensatory effort.

Originality/Value. The study advances a process model, the Behavioral Deferral Cascade, linking individual temporal behavior to project-level disruption. It distinguishes Nominal Schedule Adherence (NSA) from Compensated Schedule Adherence (CSA) and proposes the Temporal Amplification Ratio (TAR) as an exploratory construct for future validation rather than as an established project-control metric.

Keywords: task deferral; project schedule adherence; behavioral project management; temporary organizations; temporal amplification; team compensation; observational methods; project governance

1. INTRODUCTION

Project schedules constitute the temporal architecture of temporary organizations, translating strategic objectives into sequenced, interdependent activities governed by precedence logic, resource constraints, and milestone commitments (Lundin, Arvidsson, Brady, Ekstedt, Midler, & Sydow, 2015; Project Management Institute [PMI], 2021). Schedule adherence—the degree to which actual project execution aligns with the approved baseline—remains a primary indicator of project competence and organizational reliability (Flyvbjerg, 2014). Yet projects routinely

experience schedule deterioration despite sophisticated scheduling methodologies and critical-path analysis. Behavioral execution, coordination, and resource-allocation problems remain consequential because technical schedules are implemented through human action rather than algorithms alone (Wu, Ramachandran, & Krishnan, 2014).

Among the behavioral factors contributing to schedule deterioration, procrastination occupies a difficult analytical position. Defined as the voluntary delay of intended action despite foreseeable negative consequences (Steel, 2007; Sirois & Pychyl, 2013), procrastination is extensively documented in psychological research through self-report instruments such as the Tuckman Procrastination Scale (Tuckman, 1991), the Pure Procrastination Scale (Steel, 2010), and the Procrastination Assessment Scale (Solomon & Rothblum, 1984). Meta-analytic evidence associates procrastination with lower conscientiousness and self-efficacy, and with higher impulsiveness and task aversiveness (Steel, 2007; van Eerde, 2020).

The dominant self-report paradigm, however, encounters important limitations in the interdependent, deadline-driven context of project teams. Self-report instruments cannot directly capture the sequential mechanisms through which one actor's temporal deferral propagates through a project network (Wu et al., 2014). Respondents may also conflate procrastination with rational reprioritization, workflow friction, or legitimate risk management, while the social undesirability of admitting procrastination may bias professional self-reports (Klingsieck, 2013; Webb, Campbell, Schwartz, & Sechrest, 1966). Individual disposition measures alone cannot explain how project structures, task interdependence, team responses, and governance mechanisms transform localized temporal behavior into system-level disruption (Piperca & Floricel, 2023; Yang et al., 2022).

This gap raises two connected questions: How does procrastination-consistent temporal behavior, once observable in project work, propagate through the structural architecture of a project? Through what mechanisms can the resulting disruption become less visible to the formal project-control systems intended to detect schedule variance?

To address these questions, we conducted a 14-week, partially disclosed non-participant observational study across three heterogeneous projects, encompassing 186 observation records and approximately 312 hours of field observation. Rather than relying solely on participants' retrospective accounts, we documented observable temporal behaviors in coordination meetings, site activities, work periods, and governance interactions, and cross-referenced them against project schedules, meeting records, sprint boards, risk registers, issue logs, and milestone trackers.

This paper makes three contributions to behavioral project management. First, it advances a process theory, the Behavioral Deferral Cascade by explaining how task-initiation deferral can interact with network dependencies, downstream disruption, informal team compensation, and governance visibility. Second, it proposes the Temporal Amplification Ratio (TAR) as an exploratory analytical construct for future validation where source schedules permit consistent measurement of initial deferral and downstream disruption in the same time unit. Third, it distinguishes Nominal Schedule Adherence (NSA) from Compensated Schedule Adherence (CSA), highlighting how a milestone can be preserved while unplanned overtime, workload redistribution, re-sequencing, or quality-buffer consumption remain largely invisible in aggregate status reporting.

The paper proceeds as follows. Section 2 develops the theoretical framework integrating Temporal Motivation Theory with temporary-organization and project-control perspectives. Section 3 details the observational methodology and construct-validity safeguards. Section 4 presents the findings around the Behavioral Deferral Cascade. Section 5 develops theoretical propositions, boundary

conditions, and practical implications. Section 6 concludes with limitations and future research directions.

2. THEORETICAL FRAMEWORK

2.1 Temporal Motivation Theory and Phase-Boundary Vulnerability

Temporal Motivation Theory (TMT) provides a micro-foundational rationale for understanding individual task initiation and temporal deferral (Steel, 2007, 2011). TMT posits that subjective task utility is governed by expectancy, outcome value, sensitivity to delay, and temporal distance to reward or deadline. As temporal distance increases or task clarity diminishes, immediate motivational utility declines, creating psychological latitude for task deferral—particularly when immediate task engagement involves ambiguity or perceived task aversiveness.

To bridge individual self-regulation with organizational dynamics, this study integrates TMT's micro-foundations with Structural Temporal Systems Theory (Ancona, Okhuysen, & Perlow, 2001; Bluedorn, 2002). Project phase boundaries represent distinct structural temporal transitions where micro-level utility shifts intersect with organizational architecture. At a phase gate, the immediate pressure of a preceding milestone recedes, while the succeeding phase frequently introduces handoff ambiguity, unestablished task framing, role transition, and coordination friction (Ancona et al., 2001; Sydow, Lindkvist, & DeFillippi, 2004). These structural boundary conditions systematically depress perceived task utility and expectancy, creating predictable windows of temporal vulnerability.

Because this non-participant observational design does not directly measure internal cognitive or affective states, such as subjective expectancy, perceived value, impulsiveness, or individual task aversiveness. TMT is employed strictly as an interpretive micro-foundation rather than a tested psychological model. The analytical focus remains squarely on the structural-behavioral realization of these shifts: how procrastination-consistent task deferral systematically manifests at project phase transitions and how those observable behaviors interact with the surrounding project network.

2.2 Temporary Organizations and Temporal Amplification

Projects are temporary organizations defined by finite lifespans, unique governance structures, and intense task interdependence (Bakker, 2010; Lundin et al., 2015). Unlike more loosely coupled operational environments, projects often operate with compressed horizons and precedence relationships that link the start or completion of one activity to another (Kelley & Walker, 1959; Turner, 2014).

Where an upstream activity is delayed, downstream activities may be blocked, resources may become idle or be reassigned, and available float may be consumed. The project network can therefore amplify a localized temporal variance into wider schedule disturbance. This study treats amplification as a process phenomenon rather than assuming a fixed mathematical relationship across cases.

Behavioral project management emphasizes how project actors adapt to temporal disruptions through work resequencing, resource redistribution, and informal coordination (Piperca & Floricel, 2023; Yang et al., 2022). Such adaptations can preserve delivery but may also conceal originating schedule variances and weaken organizational learning when recovery efforts are not adequately documented or escalated (Fang et al., 2024).

2.3 Project Controls and the Visibility Problem

Conventional project-control measures are designed to surface deviations from baseline and progress against planned value, milestones, or activity dates (PMI, 2021; Kerzner, 2022). Yet aggregate control metrics may remain insensitive to the unplanned behavioral effort, workload redistribution, or buffer consumption used to preserve reported milestones.

When teams compensate for upstream deferral through extended hours, informal task substitution, re-sequencing, or compressed review periods, the formal status may remain acceptable while the delivery system experiences substantial hidden strain. This study calls the first condition Nominal Schedule Adherence (NSA): compliance visible in formal milestone reporting. Compensated Schedule Adherence (CSA) refers to milestone compliance preserved through exceptional, unplanned effort or buffer consumption that is not fully represented in formal project reporting.

The visibility problem is especially salient when governance emphasizes output completion over process variance. Where status reporting is self-assessed, task ownership is ambiguous, or recovery work is not logged, the project-control system may capture successful output without capturing the temporal pathway by which that output was achieved.

3. METHODOLOGY

3.1 Research Design and Epistemological Positioning

This study employed a partially disclosed non-participant observational design. The researcher's physical presence was known to project teams; however, the specific theoretical focus on procrastination-consistent temporal behavior was not disclosed. Participants were informed that the researcher was observing project coordination and workflow dynamics. This approach was intended to limit potential demand characteristics associated with participants' awareness of the study's specific theoretical focus, while preserving opportunities to observe naturally occurring project activities and schedule deviations in their organizational settings. Because awareness of research can influence participant behavior in ways that vary across contexts, the design sought to reduce hypothesis-specific reactivity rather than assume its elimination (Coles et al., 2025; Marchionni et al., 2024; Seetahul & Greitemeyer, 2024; Zahle, 2023).

The study is grounded in a critical realist epistemology, which distinguishes between the existence of reality and the necessarily fallible knowledge researchers develop about it (Bhaskar, 1975; Brøns Kringelum & Brix, 2021; Fuchs & Robinson, 2024). The empirical domain comprises events and behaviors observed or experienced by the researcher; the actual domain includes events that occur independently of whether they are observed; and the real domain concerns the structures, causal powers, and generative mechanisms that may produce those events (Bhaskar, 1975; Brøns Kringelum & Brix, 2021; Fuchs & Robinson, 2024). In this study, potential mechanisms include temporal discounting, task interdependence, and governance ambiguity. Critical realism is appropriate because the study seeks to move beyond descriptions of observed schedule deviations toward plausible explanations of the mechanisms that generate them, while recognizing that such explanations remain provisional and open to revision (Fuchs & Robinson, 2024; Hoddy, 2019).

3.2 Construct Validity: Three-Level Evidentiary Screen

A central methodological challenge is distinguishing procrastination-consistent behavior from rational reprioritization, workflow friction, legitimate risk management, and coordination uncertainty. Recent research emphasizes that delay alone is insufficient to establish procrastination, which involves the postponement of an intended action despite anticipated negative consequences (Svartdal & Nemtcan, 2022; Lauderdale et al., 2024). Because the researcher cannot directly infer an actor's intentions, perceived voluntariness, or expectations about the consequences of delay from

observed behavior alone, such observations are treated as indicators of possible procrastination rather than definitive evidence of the construct. This distinction is particularly important in project environments, where delays may reflect strategic choices or organizational constraints rather than individual self-regulatory failure.

To discipline interpretation, the analysis used a three-level evidentiary screen. Level 1 denotes observable deferral: a task did not commence within the expected temporal window, regardless of cause. Level 2 denotes observable deferral accompanied by behavioral signatures such as activity substitution, unnecessary preparatory activity, or vague temporal displacement. Level 3 denotes a high-confidence procrastination-consistent interpretation in which the Level 2 pattern is supported by documentary or verbal evidence that prerequisites were satisfied, commencement was expected, and no defensible task-related blocker could be identified.

The three-level framework was used as a construct-validity screen for interpreting episodes and selecting illustrative cases; it was not a separate frequency-coding scheme in the source dataset. Accordingly, the results do not report dataset-level counts of Level 1, Level 2, or Level 3 episodes. Frequency reporting is based on the source codebook and observation-record coding.

3.3 Case Selection and Context

Maximum-variation purposive sampling (Bouncken et al., 2026) was used to select three active projects that varied by sector, governance arrangement, team composition, and scheduling method while sharing multi-phase, interdependent work.

Case	Context	Scale	Observed phase span	Scheduling/governance
Project A	Commercial construction	18 months; 42-person team	Design finalization → procurement → early erection	CPM; procurement and site-control artifacts
Project B	IT systems integration	12 months; 28-person team	Requirements → development → integration testing	Agile-hybrid; two-week sprints with fixed client milestone
Project C	Public-sector infrastructure planning	10 months; 19-person team	Planning → stakeholder consultation → reporting	Milestone-based public-sector governance

3.4 Researcher Positionality and Reflexivity

Access was negotiated through an organizational research arrangement. The lead researcher held no managerial authority, employment relationship, or performance-evaluation jurisdiction over participants. The researcher possessed substantial professional experience in project scheduling and control, which supported interpretation of Gantt charts, critical-path logic, sprint boards, and governance artifacts.

This expertise also introduced interpretive risk. Familiarity with project-control norms could encourage normative judgments about how teams should behave. Reflective notes were therefore maintained to distinguish descriptive observation from interpretation, and codes were applied only where observable behavior or documentary evidence supported the classification.

3.5 Data Collection and Unit of Analysis

Data collection spanned 14 weeks and comprised 186 observation records totaling approximately 312 hours: 72 sessions (126 hours) in Project A, 64 sessions (108 hours) in Project B, and 50 sessions (78 hours) in Project C. Observation sessions included coordination meetings, site-monitoring blocks, stand-ups, progress reviews, stakeholder-preparation work, and related project activities.

The observation record/session is the principal coding unit. A single session could contain multiple codes across multiple domains, and the same individuals could appear repeatedly across sessions. Code-frequency counts therefore represent the number of observation records in which a code was applied; they are not counts of unique individuals or independent behavioral incidents.

Field notes were structured around scheduled versus actual task execution, observable behavioral signatures, team responses, governance conditions, and documentary cross-reference. Documentary evidence included meeting minutes, project schedules, sprint-board exports, risk registers, issue logs, milestone trackers, and deliverable files. Negative cases were retained, and saturation was assessed iteratively; the source codebook records coding saturation at Session 174, with the final 12 sessions coded against the existing framework.

3.6 Analytical Strategy and Coding Reliability

Data were analyzed using structured codebook thematic analysis (Roberts, Dowell, & Bunker, 2019), combining deductively specified behavioral and project-control indicators with inductively refined higher-order themes. The final codebook contained 17 codes across four domains: task-initiation deferral signatures, downstream schedule effects, team compensation, and governance conditions. Codes were not mutually exclusive.

A subset of 40 observation records (21.5% of the dataset) was independently coded by a second researcher trained in the codebook. The source research package reports agreement on presence/absence of Domain 1 codes of 89.1%, Domain 2 codes of 91.4%, Domain 3 codes of 84.6%, and Domain 4 codes of 86.2%, for an overall pre-resolution agreement of 87.3%. Discrepancies were discussed, the codebook was refined, and the 40 records were re-coded jointly; the source package reports 96.8% post-resolution agreement. Because the available research package does not contain the coder-by-code contingency matrix required to independently verify a chance-corrected coefficient, this study reports the supported agreement statistics rather than an unverified Cohen's kappa.

3.7 Schedule Disruption and the Temporal Amplification Ratio

Schedule disruption was assessed by tracing observed upstream deferral into downstream consequences using the native project-control artifacts available in each case. In Project A, procurement plans, issue logs, risk registers, and the approved schedule were used to establish precedence and timing. In Project B, sprint-board dependencies and blocked integration tasks were used to trace propagation. In Project C, milestone trackers and deliverable deadlines provided the primary temporal reference.

The Temporal Amplification Ratio (TAR) is proposed as an exploratory construct for future validation: downstream schedule disruption divided by initial task-initiation deferral, measured in the same time unit and under conditions where precedence attribution is defensible. $TAR \approx 1$ would indicate direct propagation; $TAR > 1$ would indicate amplification; $TAR < 1$ would indicate buffering or absorption. The present data package demonstrates qualitative amplification and contains case-specific timing evidence, but it does not provide a harmonized, cross-case set of

TAR-eligible episodes measured consistently in the same time unit. Accordingly, no population-like TAR range or mean is claimed in this study.

TAR = Downstream schedule disruption / Initial task-initiation deferral'

3.8 Ethical Considerations

This study was conducted in full compliance with the ethical principles of the Declaration of Helsinki and organizational research governance protocols for non-invasive, minimal-risk workplace observation. Because the research involved observational data collection during routine, naturally occurring organizational activities and collected no personal, health, or sensitive human-resources data, the protocol fell under standard institutional exemptions for minimal-risk organizational observation.

Prior formal organizational consent to conduct non-participant observation of project activities, coordination meetings, and workflow dynamics was obtained from the executive management of all participating projects. Participants were informed that observational research concerned project coordination, scheduling practices, workflow efficiency, and team interaction patterns. To prevent hypothesis-specific reactivity and demand characteristics, the specific analytical focus on procrastination-consistent temporal behaviour was not disclosed during data collection—a standard methodological approach in observational organizational research designed to capture unprompted workplace behaviours.

Rigorous risk-mitigation protocols were established and maintained throughout the study. No sensitive human-resources records, performance evaluations, compensation data, or personally identifying information were collected. All participating organizations and individual team members were systematically anonymized using alphanumeric identifiers (e.g., Project A, Session B-019), and all contextual or geographic details capable of revealing institutional identity were removed or generalized in the research records.

Observational field notes were strictly confined to project-related behaviours, workflow sequences, scheduling consequences, and governance interactions rather than individual personal attributes. Verbatim workplace statements were recorded only when directly relevant to process dynamics and reported in a manner that precludes speaker identification. All raw research data were stored on encrypted, secure media accessible solely to the primary investigator.

By evaluating observable workplace actions and documentary evidence rather than imputing internal psychological traits, the study minimizes personal risk while upholding rigorous organizational research ethics standards.

3.9 Limitations of the Observational Method

Partially disclosed observation cannot eliminate reactivity, and internal cognitive states such as task aversiveness, subjective voluntariness, and perceived negative consequences cannot be directly observed. The evidentiary screen reduces but does not remove construct uncertainty. The study therefore uses the language of procrastination-consistent task deferral and observable behavioral signatures rather than claiming direct observation of procrastination as a psychological state.

4. RESULTS

4.1 Coding Profile Across 186 Observation Records

The source dataset comprises 186 coded observation records. Because codes were non-mutually exclusive, the appropriate descriptive summary is code frequency by observation record rather than

a mutually exclusive event flow. Table 1 reports the frequencies most directly relevant to the Behavioral Deferral Cascade. The full 17-code profile appears in Appendix A.

Code / mechanism	Project A (n=72)	Project B (n=64)	Project C (n=50)	Total (n=186)
Task-initiation deferral at phase boundary (TID-PHASE)	28	22	17	67
Activity substitution (ASUB)	24	21	14	59
Temporal displacement (TDISP)	12	10	9	31
Information-seeking displacement (ISD)	6	11	4	21
Downstream task starvation (CASCADE-D)	18	20	16	54
Schedule compression (CASCADE-C)	15	14	12	41
Resource idle period (RES-IDLE)	10	5	8	23
Critical-path elongation (CRIT-PATH-EXT)	7	9	6	22
Silent workload absorption (COMP-ABS)	8	12	21	41
Normalization of delay (COMP-NORM)	14	16	11	41
Compensatory intensification (COMP-INTENS)	9	13	5	27
Unclear task accountability (GOV-ACC)	11	6	7	24
Insufficient progress visibility (GOV-VIS)	12	9	10	31
Absence of escalation protocol (GOV-ESC)	4	7	5	16
Self-assessed reporting (GOV-REP)	6	5	8	19

Note. Frequencies are numbers of observation records in which the code was applied. A record may contain multiple codes; totals across codes must not be summed as unique incidents. (Because multiple codes were assigned within individual observation sessions, frequencies reflect co-occurrence across observational contexts rather than independent statistical events).

4.2 Behavioral Deferral Cascade

The coded records and documentary cross-references revealed a recurring process pattern: task-initiation deferral around phase transitions, downstream dependency effects, compensatory team responses, and governance conditions that reduced visibility of the originating temporal variance. Figure 1 summarizes the resulting Behavioral Deferral Cascade.

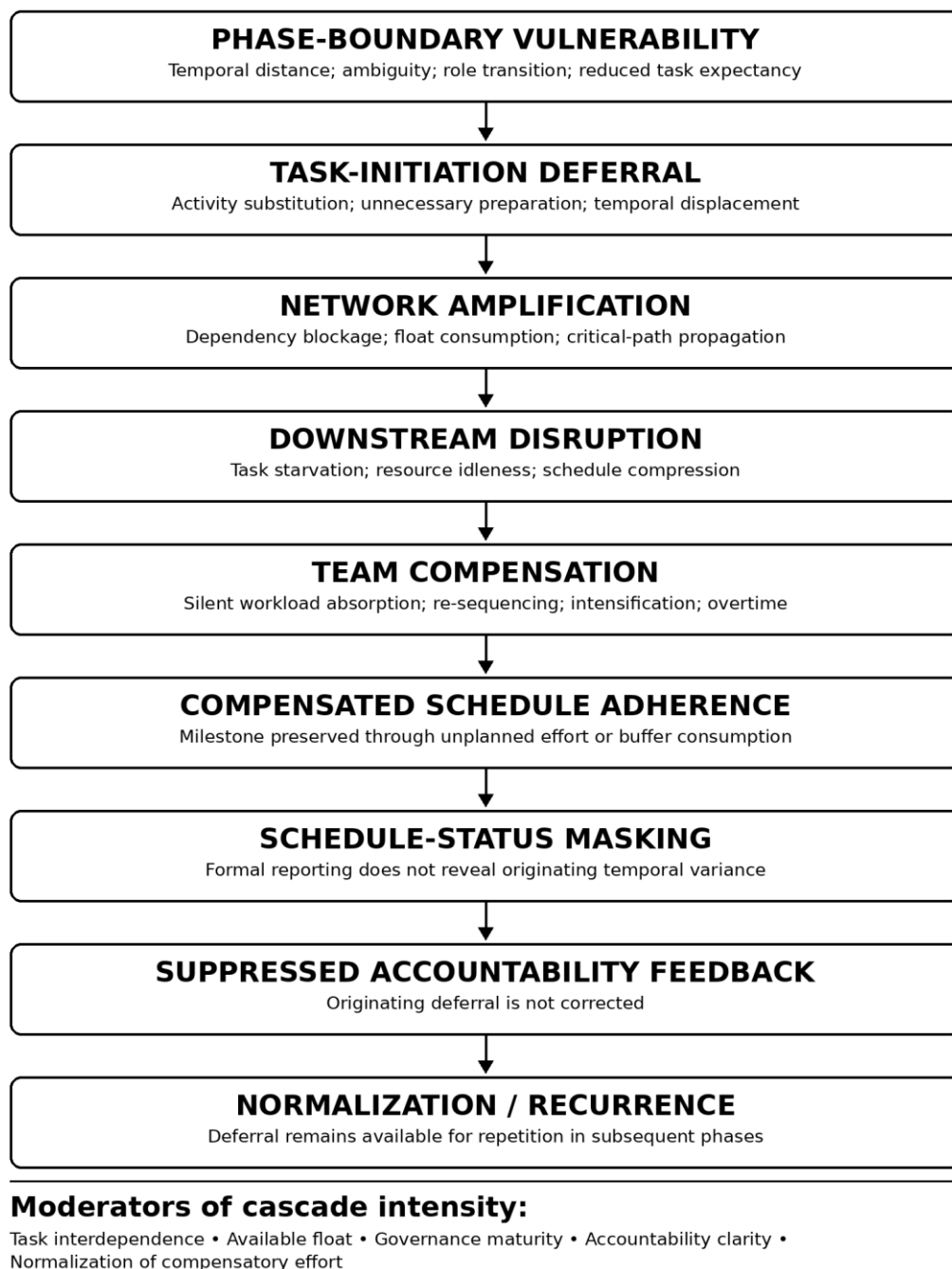


Figure 1. Behavioral Deferral Cascade Model

4.3 Stage 1: Phase-Boundary Task-Initiation Deferral

Task-initiation deferral at phase boundaries (TID-PHASE) was coded in 67 of 186 observation records: 28 of 72 records in Project A, 22 of 64 in Project B, and 17 of 50 in Project C. Because these are session-level code frequencies rather than independent episodes, they should be interpreted as evidence of repeated occurrence across the three project contexts, not as a prevalence estimate for individual procrastination.

Project A provides a well-documented example. The structural design package was signed off on 13 March. In Session A-034, the procurement coordinator reported that specifications were still

being finalized, yet the researcher verified that the complete signed package—including the referenced connection details—was available and that no relevant RFI was outstanding. During the observed work period, the coordinator reorganized files, responded to unrelated email, updated unrelated spreadsheet entries, and reformatted a procedure document without initiating the structural-steel purchase order. A later interaction with the structural engineer again confirmed that the required details were already available.

Project B exhibited a similar pattern following requirements sign-off. In Session B-019, the developer assigned to API-07 spent part of the observed period re-reading the requirements document but then moved to generalized technical forums, unrelated legacy code, and wiki formatting. No API-07 code was written and no clarification request was raised, despite the sprint assignment being visible.

In Project C, the stakeholder consultation officer spent observed work periods on venue logistics, email, archived-document review, and presentation formatting while the core community-briefing document remained substantially incomplete close to its deadline. The milestone tracker nevertheless continued to show the deliverable as in progress.

4.4 Stage 2: Network Amplification and Downstream Disruption

Downstream task starvation (CASCADE-D) was coded in 54 observation records and schedule compression (CASCADE-C) in 41. Resource-idle periods were coded in 23 records and critical-path elongation in 22. These patterns show that observed temporal variance was not confined to the originating task; it appeared in blocked dependent work, idle or reassigned resources, and compressed downstream activities.

In Project A, the procurement plan required the structural-steel purchase order to be issued within two working days of design sign-off. The source records show that the PO was ultimately issued on 24 March after the 13 March sign-off. The field notes subsequently recorded delayed steel delivery, reassignment of the eight-person erection crew to non-critical landscaping, and formal compression of the erection and quality-inspection periods during schedule recovery. The risk register later attributed the delivery problem to supplier scheduling, while the field evidence documented the earlier internal procurement deferral.

In Project B, the sprint board showed API-07 five days behind its planned completion date, with three dependent integration tasks blocked. The project manager responded by authorizing weekend recovery work rather than formally revising the client timeline. In Project C, incomplete briefing materials created a one-day-before-delivery crisis that was resolved only through unassigned compensatory work by junior analysts.

These observations support the conceptual logic behind TAR: downstream consequences can exceed or broaden beyond the originating deferral because project dependencies, resource commitments, and recovery actions transform a localized variance into wider temporal disruption. The present study does not report a generalized TAR range because the source records do not provide a harmonized set of cross-case calculations in consistent time units.

4.5 Stage 3: Team Compensation and Compensated Schedule Adherence

Silent workload absorption (COMP-ABS) was coded in 41 observation records, schedule re-sequencing in 22, normalization of delay in 41, and compensatory intensification in 27. Three recurring forms of compensation were particularly visible: unassigned workload absorption, extended or weekend work, and compression or re-sequencing of downstream activities.

In Project C, two junior analysts independently identified that the community briefing was substantially incomplete one day before a 42-person engagement session. Over approximately six hours, they extracted content from the planning report, produced a 14-page briefing document and a 12-slide presentation, and emailed the completed materials to the project director. The assigned stakeholder consultation officer was not observed participating in this compensatory work. The next day, the community session proceeded successfully using the analysts' materials, while the assigned officer received public praise for the briefing.

In Project B, weekend work absorbed part of the API-07 delay. A senior developer's observed comment that the milestone still appeared green despite integration work being shifted onto others captures the distinction between formal status and hidden recovery effort. In Project A, the recovery plan included 11-hour shifts, additional temporary labor, and reduction of the planned three-day quality-inspection period to one day.

These cases motivate the distinction between Nominal Schedule Adherence (NSA) and Compensated Schedule Adherence (CSA). NSA refers to milestone compliance visible in formal reporting. CSA refers to milestone compliance achieved through exceptional, unplanned compensatory effort or buffer consumption that is incompletely represented in formal project-control records.

4.6 Stage 4: Governance Visibility and Normalization

Governance conditions repeatedly co-occurred with the cascade. Unclear task accountability (GOV-ACC) was coded in 24 records, insufficient progress visibility (GOV-VIS) in 31, absence of an escalation protocol (GOV-ESC) in 16, and self-assessed reporting (GOV-REP) in 19.

In Project A, meeting minutes described procurement as 'in progress' without a formal action item or deadline, even though the procurement plan identified the procurement coordinator as the responsible party. The risk register subsequently framed the steel delay as supplier scheduling, leaving the earlier internal initiation delay largely absent from the formal account. In Project B, the delayed API task appeared on the sprint board, but no change request or risk-register update was triggered before the team moved to weekend recovery. In Project C, the milestone tracker relied on self-assessed status; the briefing was described as being in final review when the document remained substantially incomplete.

We define schedule-status masking functionally as a condition in which formal project reporting fails to reveal the originating temporal variance, whether intentionally or unintentionally. The evidence indicates that successful compensation can weaken accountability feedback: if the milestone is ultimately achieved and the recovery pathway is not recorded, the system may preserve the appearance of control while losing information about the behavioral and governance conditions that produced the crisis.

4.7 Cross-Case Persistence of Cascade Mechanisms

Mechanism	Project A (72 records)	Project B (64 records)	Project C (50 records)
Phase-boundary deferral (TID-PHASE)	28	22	17
Downstream task starvation (CASCADE-D)	18	20	16
Schedule compression (CASCADE-C)	15	14	12

Mechanism	Project A (72 records)	Project B (64 records)	Project C (50 records)
Silent workload absorption (COMP-ABS)	8	12	21
Normalization of delay (COMP-NORM)	14	16	11
Insufficient progress visibility (GOV-VIS)	12	9	10
Unclear task accountability (GOV-ACC)	11	6	7

The principal cascade mechanisms appeared in all three project contexts, although their relative frequencies differed. Project A showed comparatively more records coded for unclear accountability; Project B showed comparatively more downstream task starvation and intensification; and Project C showed particularly frequent silent workload absorption. These variations are consistent with the model's boundary-condition logic: the cascade is shaped by project architecture and governance rather than occurring identically across settings.

5. DISCUSSION

5.1 Theoretical Contributions

Behavioral Deferral Cascade as process theory. The primary theoretical contribution is a process model linking micro-level temporal behavior to project-level disruption. The evidence indicates that task-initiation deferral can be amplified through dependency structures, absorbed by team compensation, and rendered less visible when governance records emphasize completed outputs over the temporal pathway to completion.

The compensation paradox. Team compensation can simultaneously protect short-term delivery and weaken long-term corrective feedback. Silent workload absorption, weekend recovery, re-sequencing, and compressed review periods may preserve a milestone while reducing the visibility of the originating variance. The adaptive act therefore contains a paradox: resilience at the delivery level may reproduce vulnerability at the governance level.

Nominal versus Compensated Schedule Adherence. The NSA/CSA distinction extends project-control vocabulary by separating the reported fact of milestone compliance from the mode by which compliance was achieved. A milestone can be delivered through planned execution, through compensated recovery that imposes hidden effort or buffer consumption, or after an acknowledged formal re-baseline. These modes are not equivalent from a governance or organizational-learning perspective.

Temporal Amplification Ratio as exploratory construct. TAR is retained as a theoretical and analytical proposal rather than an empirically validated metric in the current study. The source records demonstrate amplification qualitatively, but consistent cross-case TAR estimation would require harmonized event definitions, schedule-quality controls, common time units, and explicit treatment of parallel dependencies, lag/lead relationships, float, and concurrent external delays.

5.2 Theoretical Propositions

- **Proposition 1.** Procrastination-consistent task-initiation deferral is more likely to be observed around project phase transitions than during stable execution periods when temporal distance, ambiguity, and handoff uncertainty are higher.
- **Proposition 2.** The schedule consequences of task-initiation deferral increase with task interdependence and decrease with available temporal slack. In tightly coupled networks,

local temporal variance is more likely to generate downstream starvation and schedule compression.

- **Proposition 3.** Team compensation attenuates visible milestone variance while increasing hidden resource costs, workload redistribution, and buffer consumption.
- **Proposition 4.** Governance systems that emphasize output completion over process variance, and that rely heavily on self-assessed progress reporting, increase the likelihood that originating temporal variance remains insufficiently visible.
- **Proposition 5.** Repeated compensatory masking weakens accountability feedback and increases the likelihood that similar deferral patterns recur in subsequent project phases.

5.3 Boundary Conditions

Conditions likely to amplify the cascade:

- High task coupling and sequential dependence
- Low available float on schedule-critical work
- Ambiguous task ownership or verbal-only assignment
- Self-assessed progress reporting without independent verification
- Cultural normalization of compensatory overtime or silent workload absorption
- Governance emphasis on milestone compliance over variance transparency

Conditions likely to attenuate the cascade:

- Loose task coupling and modular or parallel workstreams
- Substantial schedule float or usable contingency
- Explicit task ownership with named accountability
- Independent deliverable verification at phase gates
- Formal logging of compensatory effort and workload redistribution
- Mandatory governance review when recovery actions materially alter workload, quality buffers, or schedule logic

5.4 Practical Implications

The findings suggest that project governance should pay attention not only to whether a milestone is met but also to the recovery pathway used to meet it. Phase transitions warrant particular scrutiny because the source dataset repeatedly coded task-initiation deferral in these contexts.

Organizations may consider combining self-reported status with observable deliverable checkpoints, especially during handoffs. Clear task ownership, dated action items, and explicit escalation triggers can improve visibility without assuming that every delay is behavioral in origin.

Compensatory effort should be logged when it materially alters workload, overtime, sequencing, or review buffers. The objective is not to discourage adaptive teamwork but to preserve organizational learning by ensuring that successful recovery does not erase information about the source of disruption.

TAR should not yet be implemented as a formal control metric on the basis of this study alone. Its practical value depends on future validation using higher-quality schedule datasets and consistent event-level measurement.

5.5 Alternative Explanations

Some observed deferrals may reflect prudent waiting, workload conflict, or risk management rather than procrastination-consistent behavior. Documentary cross-reference strengthens interpretation in selected cases but cannot eliminate all ambiguity.

Compensatory behavior may reflect prosocial organizational citizenship rather than dysfunctional masking. The study does not dispute prosocial motivation; its analytical concern is that the successful compensation can remove the visibility of the originating variance regardless of motive.

Governance deficiencies may arise from resource constraints, organizational immaturity, contractual structure, or deliberate managerial trade-offs rather than poor design. The model concerns their functional effect on visibility and feedback, not an assumption about managerial intent.

6. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

6.1 Conclusion

This study investigated how procrastination-consistent task deferral appears in project work and how observable temporal variance can propagate into wider schedule disruption. Across 186 observation records from three maximum-variation projects, the analysis identified a recurring pattern linking phase-boundary deferral, downstream dependency effects, team compensation, and governance visibility.

The Behavioral Deferral Cascade reframes project delay as more than an isolated individual failure of self-regulation. In interdependent temporary organizations, localized temporal behavior can interact with schedule architecture and governance processes in ways that broaden its consequences. The distinction between Nominal Schedule Adherence and Compensated Schedule Adherence further shows why a formally successful milestone can coexist with substantial unplanned effort, workload redistribution, or buffer consumption.

The study therefore provides an empirically grounded foundation for a behavioral view of project schedule disruption. Achieving genuine schedule adherence requires governing not only milestone dates but also the temporal and compensatory processes through which those milestones are achieved.

6.2 Limitations

First, the study covers three projects in one metropolitan context; transferability to other cultural, contractual, and institutional environments requires further research.

Second, partially disclosed observation cannot establish participants' internal cognitive states. The study therefore reports procrastination-consistent task deferral rather than claiming direct observation of procrastination as a psychological state.

Third, the 14-week observation window may not capture rare or extreme temporal behaviors across complete project lifecycles.

Fourth, the source code frequencies are observation-record frequencies, not independent incident counts. Repeated observations of the same actors and multiple codes within the same session preclude treating the frequency table as inferentially independent data.

Fifth, TAR remains an exploratory construct. The current source package does not contain a harmonized cross-case set of event-level calculations in consistent time units sufficient to establish a reliable TAR range, mean, or predictive validity.

Sixth, the researcher's project-management expertise supported schedule interpretation but may have shaped which temporal variances were noticed and how they were interpreted. Reflective memoing and documentary cross-reference reduce, but cannot remove, this influence.

6.3 Future Research

Longitudinal research across complete project lifecycles should test whether phase-boundary patterns persist, whether compensation accumulates over time, and whether recurrent masking predicts later cost, schedule, quality, or burnout outcomes.

Mixed-method designs combining observation with post-project interviews or experience-sampling could triangulate observable deferral against subjective task aversiveness, voluntariness, perceived consequences, and motivational states.

TAR requires formal validation using high-quality scheduling datasets with consistent working-day calendars, explicit precedence logic, documented float, and event-level attribution. Such work should examine its behavior under parallel dependencies, lag/lead relationships, schedule recovery, and concurrent delays.

Experimental or quasi-experimental research could manipulate governance visibility—for example, independent deliverable verification, mandatory compensation logging, or phase-gate accountability—to test whether the cascade can be interrupted.

The compensation paradox also warrants dedicated study. Future research should identify the point at which adaptive resilience becomes dysfunctional masking and examine the consequences for team morale, workload equity, psychological safety, and organizational learning.

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Appendix A: Full Code-Frequency Summary

Domain	Code	Definition (abbreviated)	A	B	C	Total
Domain 1	TID-PHASE	Task-initiation deferral at phase boundary	28	22	17	67
Domain 1	ASUB	Activity substitution	24	21	14	59
Domain 1	TDISP	Temporal displacement	12	10	9	31
Domain 1	ISD	Information-seeking displacement	6	11	4	21
Domain 2	CASCADE-D	Downstream task starvation	18	20	16	54
Domain 2	CASCADE-C	Schedule compression	15	14	12	41
Domain 2	RES-IDLE	Resource idle period	10	5	8	23
Domain 2	CRIT-PATH-EXT	Critical-path elongation	7	9	6	22
Domain 3	COMP-ABS	Silent workload absorption	8	12	21	41
Domain 3	COMP-RESEQ	Schedule re-sequencing	6	9	7	22
Domain 3	COMP-NORM	Normalization of delay	14	16	11	41
Domain 3	COMP-INTENS	Compensatory intensification	9	13	5	27
Domain 4	GOV-ACC	Unclear task accountability	11	6	7	24
Domain 4	GOV-PRI	Ambiguous priority signals	5	8	4	17
Domain 4	GOV-VIS	Insufficient progress visibility	12	9	10	31
Domain 4	GOV-ESC	Absence of escalation protocol	4	7	5	16
Domain 4	GOV-REP	Self-assessed reporting	6	5	8	19

Source-note: one observation record could carry multiple codes; frequencies are session-level code occurrences, not unique incidents.

Appendix B: Observation Protocol Checklist (Blank Template)

Field	Entry
Observation ID	
Date / Time	
Project (A / B / C)	
Project Phase	
Phase-boundary window?	
Location	
Activity Observed	
Number of Participants	
Duration (minutes)	
BEHAVIORAL INDICATORS	
Task-initiation deferral observed?	
Activity substitution observed?	
Information-seeking displacement?	
Temporal displacement?	
Description of observed behavior	
SCHEDULE CONTEXT	
Planned task/activity	
Actual task/activity	
Critical/near-critical relationship	
Downstream tasks affected	
Observed downstream disruption	
Concurrent external delays present?	
TEAM RESPONSES	
Compensatory behavior observed?	
Workload redistribution?	
Schedule re-sequencing?	
Formal escalation triggered?	
Change request submitted?	
GOVERNANCE CONTEXT	
Task assignment documented?	

Field	Entry
Named accountability?	
Progress independently verified?	
Reporting mechanism	
DOCUMENTARY CROSS-REFERENCE	
Meeting minutes reviewed?	
Schedule/sprint board reviewed?	
Issue/risk log reviewed?	
Deliverable evidence reviewed?	
REFLECTIVE NOTES	
Researcher interpretive observations	
Alternative explanations considered	
Follow-up required	

Appendix C: Codebook Summary (Version 3.2)

Domain	Code	Code Name	Definition (Abbreviated)
1. Deferral Signatures	TID-PHASE	Task-Initiation Deferral at Phase Boundary	Observable non-initiation within the planned temporal window around a phase transition.
	ASUB	Activity Substitution	Engagement in peripheral tasks during time allocated to the schedule-critical task.
	TDISP	Temporal Displacement	Postponement without formal schedule adjustment, often accompanied by vague temporal language.
	ISD	Information-Seeking Displacement	Tangential information gathering that does not materially advance the critical task.
2. Downstream Effects	CASCADE-D	Downstream Task Starvation	Dependent work is blocked by upstream non-delivery.
	CASCADE-C	Schedule Compression	Subsequent activity duration is reduced to absorb delay.
	RES-IDLE	Resource Idle Period	Resources are idle or diverted because upstream work is unavailable.
	CRIT-PATH-EXT	Critical-Path Elongation	Schedule-critical duration is extended in association with upstream deferral.
3. Team Compensation	COMP-ABS	Silent Workload Absorption	Team members assume deferred work outside the original assignment.
	COMP-RESEQ	Schedule Re-sequencing	Work order is informally adjusted to accommodate delay.
	COMP-NORM	Normalization of Delay	Delay is treated as routine without root-cause attribution.
	COMP-INTENS	Compensatory Intensification	Extended hours or increased work pace are used to recover schedule.
4. Governance Conditions	GOV-ACC	Unclear Task Accountability	Named individual responsibility is absent or insufficiently explicit.
	GOV-PRI	Ambiguous Priority Signals	Conflicting or unclear priorities enable rationalized deferral.
	GOV-VIS	Insufficient Progress Visibility	Self-assessed status is not independently verified.
	GOV-ESC	Absence of Escalation Protocol	Delay does not trigger a defined formal escalation mechanism.
	GOV-REP	Self-Assessed Reporting	Qualitative task status is provided without independent quantitative evidence.