



White Paper 2016-08

What the Psychological Factors At Work in Scheduling Are, and How They Affect Schedule Optimism

Project Scheduling is not just science and rationality. Many psychological factors come into play when designing a Project schedule and then during Project execution that greatly influence events and outcomes. Some of these are compounded by intrinsic weaknesses of the scheduling approaches and methods used. At the end of the day, always remember that [Projects are a Human Adventure!](#)

Major psychological factors at work in project schedules

A number of psychological factors have been identified over the years that apply to many human endeavours, and particularly to Project schedules.

- **Parkinson's law:** work tends to fill the time available (if the task is planned for longer than it would take, work will still take at least that duration),
- **Student's syndrome:** if people have time to do a task they will always wait for the last possible moment to start,
- **Commitment syndrome:** people will always 'pad' their duration estimates when they are asked (consciously or unconsciously) to commit to a duration. Hence they announce durations that can be much longer than what is achievable,
- **Planning Fallacy:** an optimistic bias on the duration of own's future tasks, irrespective of benchmark data on past duration distribution of similar tasks (Daniel Kahneman, Amos Tversky),
- **Lack of calibration of estimates:** when people have not calibrated their estimates comparing to actual durations, they will tend to be pessimistic (conservative) for usual tasks and optimistic for unknown tasks.

These psychological factors are quite substantial as they can easily influence schedule forecasts by 30-50% either way. In addition, some of these factors actually compound or only reveal themselves during the course of Project execution.

Psychological Factors and Project Planning Optimism

Conventional Project schedules are fundamentally optimistic because Project planning almost never accounts for:

- inefficiencies in the handover of tasks between contributors,
- intrinsic complex issues like workplace congestion and similar constraints to

simultaneous works (e.g. when working on different levels of the same facility),

- effective coordination of contributors,
- resource multitasking (between tasks on a single Project or between different Projects), etc.

Through these effects, we believe that traditional scheduling techniques lead to an intrinsic schedule optimism of about 15-20% on average (this subject and how to address it depending on the Project's complexity is further developed on our White Paper ['Crude Estimates of Possible Project Overrun' \[2013-09\]](#))

Well-Known Tasks

The effect of the psychological factors on familiar tasks is that generally, durations of well-known tasks are often exaggerated by those responsible for them as they feel it is a commitment on which they might be judged later. This psychological effect to 'pad' one's estimates of the duration needed to do the job might seem to be a factor that could compensate the relative optimism of Project planning. Yet we

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also know that once a task duration is entered in a schedule, activities tend to fit within that timeframe (through such effects as the Student's effect, Parkinson's law or

simply because people lack of incentive to be effective when they feel that they have time to do a particular activity). Finally, statistically, these effects imply that tasks almost always take more time than what was entered in the baseline schedule.

In this case, the intrinsic optimistic nature of the scheduling method is somewhat balanced by the pessimistic estimates of each individual task.

Unknown Tasks with No Benchmark

For unknown tasks it would rather seem that psychology points to an optimism bias, which can be significantly reinforced with low-detail estimates of aggregated activities, in particular if there is no tangible benchmark for comparison. In that case, the naturally optimistic nature of the scheduling method will compound with the psychological

optimism of the duration estimates and create a widely unrealistic schedule expectation.

We should therefore be particularly weary of 'first-of-a-kind' situations and the schedules proposed for the realization of such prototypes. A particular effort should be developed to find suitable benchmark comparisons for most of the activities in the schedule, and ample buffers should also be added to manage expectations and budgets.

Psychological Factors and Project Execution

Beyond the influence of psychological factors at the Project planning stage, they can also be disastrous during Project execution.

These are actually the issues behind fighting 'virtual float' (refer to our White Paper [2016-07 on the Virtual Float Fallacy](#)) and implementing float monitoring techniques with fixed milestones (refer to our White Paper [2016-06 on Float Monitoring Techniques](#)).

Project Schedules are intrinsically optimistic. Be careful not to reinforce this effect through improper understanding of psychological factors!

Conclusion

Psychological factors play a decisive role in actual Project Scheduling and execution. Neglecting them is often disastrous, in particular because the net effect is often an optimistic initial plan, which

subsequently progressively slips into delays.

Prevention methods must be implemented at the planning stage, which need to take into account whether familiar tasks or new tasks are being discussed. During Project execution, specific methods such as adequate project buffers, virtual float elimination and float monitoring, will also help minimize the effect of these psychological factors.

Find all these principles of Advanced Scheduling exposed in a comprehensive manner in our Handbook, [Advanced Project Scheduling for Project Managers](#) (2nd edition available in [Paperback](#) and [Kindle](#) versions!)



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