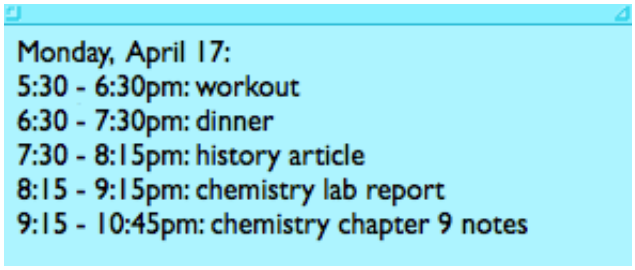
CogBlog – A Cognitive Psychology Blog

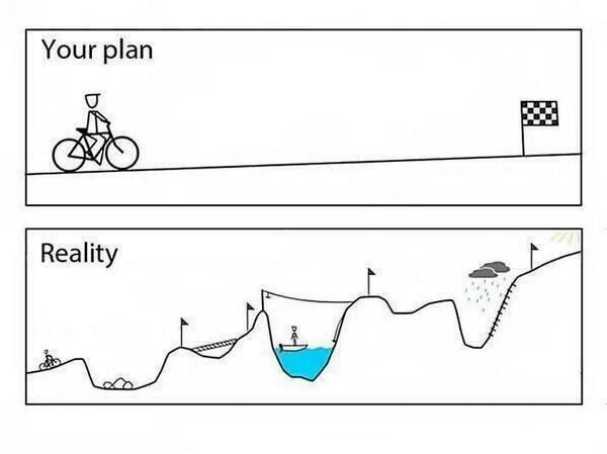
You are a busy college student who has a lot to do after a long day of classes. So you decide to try to organize your life and make a detailed schedule for your evening. You set aside an hour to get that workout in, and then another generous hour for dinner with your friends. Then to the library, you give yourself 45 minutes to read a history article and an hour to finish your lab report, followed



Evening Schedule

by an hour and a half for that chapter of chemistry notes. If all goes as planned, you'll be back in your room snuggled up with Netflix by 11pm. The problem is, halfway through that chemistry chapter, you glance at your phone and it reads 11:43pm. What happened? You planned out everything you had to do and thought you had given yourself enough time to do it. Unfortunately, you have fallen victim to the planning fallacy.

The planning fallacy is a phenomenon first proposed in 1979 by Daniel Kahneman and Amos Tversky that says that you tend to underestimate the time it will take for you to complete a future task, which represents an optimistic bias, meaning an overconfidence in your ability to complete the task within the given time. This also applies to predicting the budget for a project you are working on. However, the planning fallacy also says that when predicting for someone else, we tend to overestimate the time and budget required to complete a task, which represents a pessimistic bias, which is an underconfidence in your ability to complete the task within the given time. A possible explanation for this difference is that we may have greater expectations for ourselves than for others. These phenomena hold true regardless of one's past experiences with similar tasks. One reason for the planning fallacy is a failure to consider obstacles that may slow down progress on a task.



Representation of My Life http://theincidentaleconomist.com/wordpress/wp-content/uploads/2014/08/planning-fail.jpg

Within your perfectly planned evening, you failed to realize that you'd want to take a shower after your workout. Then, while trying to print your history article, the printer was out of paper and you had to walk over to the info desk to ask for more paper. These unexpected setbacks, along with each task taking slightly longer than you predicted, led to a much longer night than you had anticipated. However, you did do one thing correctly in planning out your night, which was to divide your evening into individual tasks like working out and reading an article. In 2008, Forsyth and Burt conducted a study to test how the segmentation effect impacts predicting completion times on future tasks. Segmentation is when you divide a single large task into smaller subtasks and then allocate time to each subtask rather than the single large task as a whole. By summing the times for each subtask, you can figure out how long the larger task will take. They found that this method significantly reduces the planning fallacy because the summation of time estimates for the segmented tasks was longer than the estimated time for the single larger task, and this more accurately represents the time it will take to complete a task. To read more about this study, click here. The implications of this study are that by dividing a large task, such as "homework," into several smaller tasks, such as "chemistry notes, history article, etc.," one can possibly reduce the effects of the planning fallacy.

You can also improve your time predictions for future tasks by taking advantage of the idea that you tend to overestimate when predicting times for other people. Buehler et al. (2012) examined how visualizing someone else doing a certain task instead of you can reduce the planning fallacy. They found that when people used third person imagery when predicting completion times, they generally considered more possible setbacks and thought less about motivational sources of bias such as one's desires to complete a task more quickly. This technique can therefore be used to reduce the impact of the planning fallacy and more accurately predict task completion times. For example, if you have a friend in the same class, you can try to imagine how long it would take for them to complete the assignment to estimate how long it will take you. For more information about this study, click here.

However, it's important to note that the planning fallacy doesn't impact everyone in every situation. Rodon and Meyers (2012) conducted a study based in the Netherlands that looked at how the planning fallacy impacted individuals' time estimations to finding answers using Web searches. What they found is quite interesting. When predicting times and performing Web-based search tasks, Rodon and Meyers found that individuals actually showed a pessimistic planning fallacy, in that they overestimated the time it would take them to find answers on the Web. This was an interesting result, considering that people usually display optimistic time estimations for completing tasks. One possible explanation for the appearance of a pessimistic planning fallacy is that users understand that they do not have full control over the Internet. Sometimes the Internet is slow or the connection fails, and so this lack of control causes people to make more cautious time estimations for how long it will take them to obtain information on the Web. When we have a task to do, we often think that we have full control over how fast we can complete it and do not account for unanticipated complications, and thereby end up underestimating the time needed to complete the task. The researchers also found that short task length, a variability of task difficulty, and whether the answer is qualitative, such as a general fact or quantitative, such as a price for something, all contributed to the overestimation in task completion times (Rodon & Meyers, 2012; to read more about this study, click here).

The planning fallacy isn't just responsible for you getting to bed later than you'd hoped. It can happen in large-scale projects as well, which can have more significant consequences. One such example is in the construction of the Sydney Opera House in Sydney, Australia.

The Sydney Opera House
https://media.timeout.com/images/103085276/630/472/image.jpg

Construction at the site began in 1959 with an expected completion date of 1963 and estimated budget of $7 million. The Opera House was officially completed in 1973 and ended up costing $102 million. This gross underestimation in both time and budget for this structure was due in large part to unexpected difficulties that the planning crew had failed to take into account, such as inclement weather during which they could not

work and changes in the original contract documents (https://en.wikipedia.org/wiki/Sydney_Opera_House).

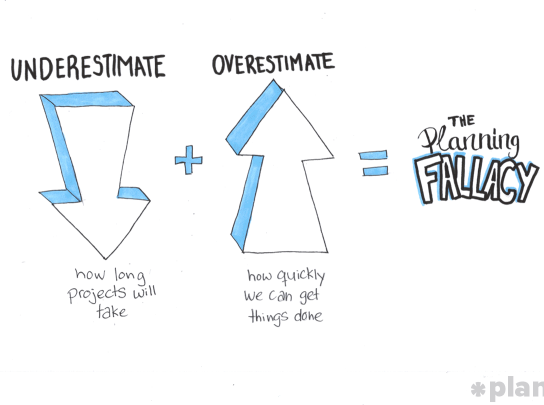
Another example that occurred in the United States was the construction of the Denver International Airport. It is currently the largest airport in the country by total land area, but it opened sixteen months later than was originally scheduled, reportedly due to poor planning and design changes. In addition,

Inside View of Denver International Airport http://www.denverpost.com/wp-content/uploads/2016/07/denver-international-airport-terminal.jpg

and perhaps more significant, is that the project cost $4.8 billion, nearly double the allocated budget! While often resulting in grand and iconic structures, projects such as the Sydney Opera House and the Denver International Airport come with a price, not just in actual cost, but in terms of labor and time as well.

But what does any of this have to do with cognitive psychology? Well, in order to plan out your day, you must engage in metacognition, which involves thinking about how much you know. People with good metacognition will likely be less impacted by the planning fallacy because they have good awareness of their capabilities and how they will perform. The planning fallacy can also be related to attention, because our time predictions are likely assuming that we direct our full attention to the task that we are working on. However, distractions are inevitable, and when we shift even part of our attention away from the present task, we become less productive on that task, causing it to take more time to complete.

So, now you've learned about the planning fallacy, and how you are probably subject to it every day. Hopefully in the future, when you schedule out your busy evening, you'll be sure to plan for unexpected obstacles and always give yourself more time than you think you'll need to complete a task.



Basic Gist of the Planning Fallacy https://blogassets.plan.io/planning-fallacy.png

If you don't think you'll be able to reduce the planning fallacy on your own, you can do what I did and give your friend your weekly schedule as well as a list of everything you have to do during the week and when all of your assignments are due, and have your friend plan every hour of your day. Guess what? It worked for me, and I felt really efficient all week because I wasn't constantly going over my allotted time for every task. Instead, I often finished my assignments before the allocated time was up, which meant I could either get started on the next assignment (haha just kidding, I was obviously watching Netflix) or have a few minutes to relax and reward myself for beating the planning fallacy.

For a related article on metacognition and recognizing one's abilities to perform a task, check out this great post on the Dunning-Kruger Effect!

References

Buehler, R., Griffin, D., Lam, K. H., & Deslauriers, J. (2012). Perspectives on prediction: Does third-person imagery improve task completion estimates?. *Organizational Behavior And Human Decision Processes*, *117*(1), 138-149. doi:10.1016/j.obhdp.2011.09.001

Forsyth, D. K., & Burt, C. B. (2008). Allocating time to future tasks: The effect of task segmentation on planning fallacy bias. *Memory & Cognition*, *36*(4), 791-798. doi:10.3758/MC.36.4.791

Rodon, C., & Meyer, T. (2012). Searching information on the Web and Planning Fallacy: A pilot investigation of pessimistic forecasts. *European Review Of Applied Psychology / Revue Européenne De Psychologie Appliquée*, *62*(2), 103-109. doi:10.1016/j.erap.2011.12.004