Extrapolations of Parkinson's Law: How to Accomplish Work Without Working

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Abstract

Throughout the beginnings of my undergraduate carreer, I have seen how people often cite "having too much work to do" as an frequent excuse to avoid hanging-out or playing games. However, I have also observed these same people working, and have noticed that their time spent working is slow and frequently filled with social and electronic distractions. Thus, what would have been a simple mathematics problem set has become a day-long endevour. This brings to mind Parkinson's Law, the famous adage that "work expands so as to fill the time available for its completion". While originally stated in almost a quasi-jest, its dominant concept is one that has basis in reality. In this paper, I indend to show how through work allocation, one can both maximize happiness and productivity. Initially, using a mathematical intrepretation of Parkinson's Law, we can thus determine how time constrains promote efficient laboring and a more effective completion of work. Through these results, I hope to challenge the current standard for work and relieve readers of the desire at times to work perpetually.

1 Introduction

Almost everyone can relate to the feeling of moving into "hyper-drive" to complete an important task solely a few moments before it must be accomplished. Even less dramatically, it always seems when there are only a few hours until something is due, our attention is at max alert, our eyes focus, and we dismiss social interactions and other distractions. When we are pressed for time, we work efficiently and effectively. Additonally, the invsere is true. It isn't hard to remember long days in the library where at the end of the day, you feel as if nothing was accomplished. The difference between

these long days in the library and this hyper-panic mode is the time constraint. When one has all-day to do something, lacking any formal pressure, one will take potentially far longer to complete the task than had one been given only a short period to do it. When there is plenty of time, urgency and efficiency aren't necesssary and we succumb to disctaction. However, when time runs scarse, inhuman speeds emerge.

Maximizing these "inhuman" speeds can be extremely beneficial in both a productivity-sense and a social-sense. Let us consider a student. He decides to do homework in lieu of a group trip. He spends the day working on homework, occasionally checking his phone, and takes frequent breaks to talk to the people next to him. He checks social media to keep updated with his friends on the trip, and slowly wades through his homework. However, his friend who went on the trip, upon returning, sits down and completes the same homework in a few hours. His friend works alone and productively, and understands there is a time pressure because she decided to go on a fun trip. In the end, they both submit the assignment at the same time and get similar grades. The question is, who made the best choice?

There are many methods out there that attempt to capitalize on this innate human tendency to act quickly under time pressure. The Pomodoro Technique is a popular working technique where the user sets a timer for 25-minutes and hopes to accomplish as much of a task as possible. Then the user receives a 5-minute break before repeating. This technique hopes to induce a time pressure and cause more efficient laboring. The Pomodoro Technique can be very effective, but after many uses of it the artificial time constraint loses its effect. Another idea is a "flipped sleep" approach, where someone decides to put off nightly work in the evening to head straight to bed. Then, after appropriately setting an early alarm, uses the coming of the day as a pressure motive.

2 Mathematics of Productivity

To mathematically describe the following ideas, we must use consistant language. Let us define:

Definition 1.1 (Work) *Work*: Work, W, is a set of tasks needing completion, measured in the number of hours an average similar professional could complete it in. Note, this is a set constant and does not vary given other constants. Additionally, work always takes some non-zero time.

Definition 1.2 (Time) *Time*: Time, t, is the amount of time allocated towards completing the work. Time is measured in hours. Also, the function

$T(W) = t \in \mathbb{R}$ describes the amount of time, t, some work, W, takes in average conditions.

Definition 1.3 (Productivity) *Productivity*: Productivity, P, is a measurement of the amount of work that one can complete per unit of time. It can be expressed as:

$$P = \frac{W}{t}$$

Note, this also means that

$$Pt = W$$

Definition 1.4 (Instantaneous Happiness) *Instantaneous Happiness*: Instantaneous happiness, $h(t)$, is a measure of emjoyment given an instant in time. Let's assume that while doing work, $h(t) = 0$

Definition 1.5 (Net Happiness) *Net Happiness*: Net happiness, H, is the total amount of happiness accumulated over a period of time. We seek to maximize this value in our computations. Net happiness can be modeled as:

$$H = \int h(t)dt$$

From Parkinson's Law, when it refers to "work expand[ing]", we can assume it refers to the time it takes to complete work rather than the work itself, for the intrinsic amount of tasks you have to do in a period of time doesn't change. Since one then can complete the same work in a shorter time, Parkinson's Law can be rephrased as "productivity increases as time decreases". However, this statement doesn't always hold. For example, there exists a time, t_{min}, in which it is a physically impossibility to complete the work. When 0 time remains, it is absurd to think one could work infinitely fast.

3 Happiness

Because of Parkinson's Law, if one has W work to complete and $t >> t_{min}$ time allocated to do it, choosing to complete the work in t hours results in the work taking t hours to complete. However, had the individual procrastinated the difference, $t - t_{min}$, the same work would have been completed in t_{min} hours and $t - t_{min}$ hours would have been saved for personal pleasure. Let us look at this with respect to happiness.

Given that when t is spent on work, $h(t) = 0$, we know for those t hours,

$$H = \int_0^t h(t)dt = 0$$

meaning no net happiness.

However, in the case that the individual procrastinates the $t - t_{min}$ difference,

$$H = \int_0^{t-t_{min}} h(t) + \int_{t-t_{min}}^{t} h(t) >= 0$$

for the left component can greater than 0.

Thus, through delaying, as long as one leaves some $t > t_{min}$ to complete the work, they can expirence a larger net happiness. Of course, this conclusion assumes that one leaves at least t_{min} time to complete the task. The real-life applicability of Parkinson's Law fails here, for people may overestimate the minimum time it takes to complete the work. However, assuming one can perfectly appraise the minimum amount of time work takes, or at least approximate it, they can save many unproductive hours.

4 How to Do Work Without Working

Notice in the above situation, the work one has to do is constant. Regardless of the time constraint on the work one must do, there is no affect on the actual quanity. Figure 1 visualizes this, where one can see a set of isoquants such where productivity and time run inverse, and their product is an amount of work.

However, let's introduce another way of conceptualizing work completion. To begin, let's assume when people begin working with a certain time constraint t hours away, they work at a constant productivity (ex. complete a page an hour). In the case of the individul above, during the time period $(0, t)$ hours, they complete W work at a constant rate. Thus, during the first portion $(0, t - t_{min})$ (while our second individual is out having fun), they complete

$$\frac{t - t_{min}}{t} W$$

.

Our second more fun-loving individual, while doesn't actually complete work during this time, does reduce the number of hours her work will take by procrastinating. During the $t - t_{min}$ hour delay, while no actual work is being completed, she does reduce the number of hours needed to complete the work. Notice, this is no different than actually doing the work, for when she finishes having fun and decides to begin working with t_{min} hours remaining, she has the same amount of time remaining on the work as the first individual. We can thus grossly consider that she did complete

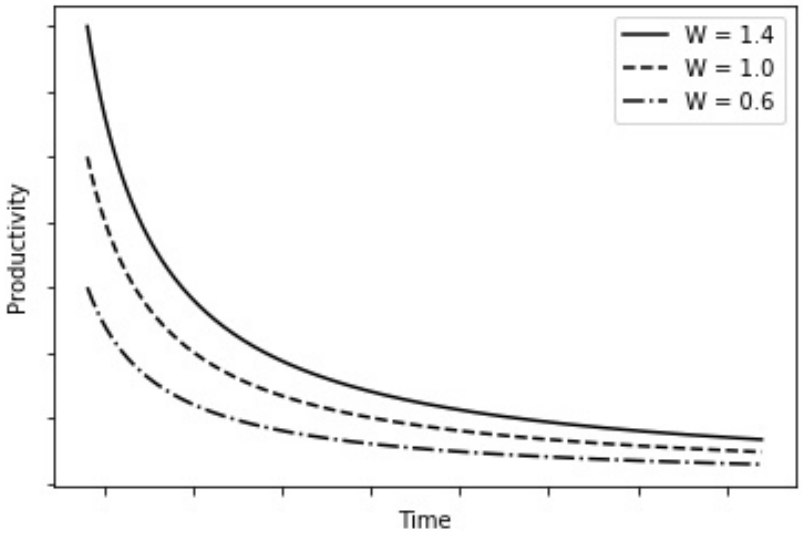

Figure 1: Work isoquants

something by causing her work to take less time. Notice, she also in this scenario would have

$$\frac{t - t_{min}}{t} W$$

remaining as well.

Let us now consider an individual who, upon the introduction of time pressure, expirences an increase in productivity greater than that which Parkinson's Law would dictate. Instead of having productivity increase along the isoquant depicted in Figure 1, productivity moves to a point P^* slightly above the same-work curve, P. In this case, the individual would have progressed to a higher isoquant, meaning given a set time, he or she would be able to complete more work than needed to be accomplished. This is not impossible to imagine. Perhaps one works better under stress (other than Parkinson's efficiency boost) or perhaps because they are playing "catch-up" with their peers they have a greater access to resources for help and questions. These are all additional components that Parkinson's Law doesn't reflect.

In this case, the work you can do is shown as

$$W_{P^*} > W_P$$

but

$$T(W_{P^*}) = T(W_P)$$

Notice, the individual only needed to complete W_P work to begin with, so in the same time period, completes an extra $W_{P^*} - W_P > 0$ work. However, given that work always takes a non-zero time to complete, the individual has thus "gotten ahead" and saved an additional

$$T(W_{P^*} - W_P)$$

hours. Thus, in a sense, by and only by delaying, extra work is accomplished. In the case of our two individuals above, our fun-loving girl actually would have completed *more* work while having fun than her library-loving companion.

To recap, we have four cases:

- Case 1: Had an individual started working with $t > t_{min}$ hours remaining, it would have taken him / her t time to complete the work.
- Case 2: If the individual delays to the last possible moment (assuming able to calculate this reasonably) t_{min}, by Parkinson's Law, they would take $t - t_{min}$ hours to complete the work. Parkinson's Law allows this individual to exchange fun for future productivity. While this individual is delaying, we can image him / her completing the same amount of work as the Case 1 counterpart.
- Case 3: An individual works even more productively by delaying than Parkinson's Law describes (due to factors listed above) and thus we can image him / her completing more work procrastinating than had he or she actually been doing work.
- Case 4: An individual works less productively than Parkinson's Law describes. While not yet mentioned, there are many people who under an immense time pressure may work more slowly while stressed and develop an almost deer-in-the-headlights response to pressure. In this case, procrastination still causes productivity increases, but less so than the inverse relationship. A solution would simply be recalculating the t_{min} value given one's response to pressure.

5 Conclusion

As we've discovered, there is a real advantage to intentionally procrastinating work. As long as one permits at least t_{min} to accomplish the task, and

assuming that one is able to well-approximate how long their work takes, one can maximize happiness through enjoying the company of others and rest assured that their increased productivity under stress will permit them to finish the task on time. Like people who under immense stress or anger develop almost super-human strength, through intentially procrastinating, one too can develop super-human speed and finish the work by a deadline.

Even such, there are cases where it is possible to complete more work playing ping-pong with friends that had one actually been in the libary studying for that time. Choosing the former option both allows one to both accomplish their necessary tasks and additionally have fun and enjoy the company of others. Steps like this go a far way towards improving happiness and preventing burnout.

In conclusion, although there are many instances where the above explicit computations are unnecessary, I hope simply being cognizant of these ideas brings to light a new perspective on labor that enables people to live happier and more poductive lives.