

Time as a Network Good:

Evidence from Unemployment and the Standard Workweek *

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Abstract

The modern “time famine” is widely felt in America, but the benefits of extra free time are not well understood. We argue that time is a network good: the value of time depends on how it aligns with the free time of social others. This makes it difficult to individually unplug from the “rat race”, without social coordination. To illustrate this, we focus on how workers and the unemployed experience the weekend. Drawing on two large data sets, with more than half a million respondents, and with random assignment to weekends, we show that both workers and the unemployed experience remarkably similar increases in emotional well-being on weekends. Despite having large amounts of free time every day, the unemployed experience 75 percent of the rise in emotional well-being on weekends that workers experience. Roughly half the reason for this is that, when the unemployed are at home during the work week, family and friends are working and unavailable for social contact. We infer from this that time off work is positive but of limited value, and that what individuals most value about weekends is not rest from work but rather shared social time with others.

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Introduction

There is an extensive sociological literature on the time pressures facing individuals and families (Schor 1991; Hochschild 1997; Robinson and Godbey 2000; Jacobs and Gerson 2004; Bianchi, Robinson, and Milkie 2007; Verbakel and DiPrete 2008). Americans are facing a time famine, with some of the longest work hours in the western world, the challenge of women working “second shifts” (Hochschild 1997), growing expectations of men to both work and be active fathers (Williams 2010), and even many children with over-scheduled lives. There is broad evidence that time pressures have been growing, and that, at a basic level, Americans feel they do not have enough “time for life” (Robinson and Godbey 2000; Lyness et al 2012).

Time is often conceived in terms of quantity, in which time is analogous to money, and the principle problem is shortage: there are not enough hours in the day. We argue, in contrast, that time is a network good (DiMaggio and Cohen 2004). The value of free time depends on the ability to coordinate that time with social others (Winship 2009; Bittman 2005). Frustrations with time are a coordination problem as much as a quantity problem.

Unemployment is a useful analytical case in this respect. When people lose their jobs, they have limited income but large endowments of free time. For this reason, economic models of unemployment point out that joblessness brings with it not only costs but also benefits (Keane 2011; Blundell and MaCurdy 1999; Kruger and Meyer 2002). The downside of unemployment is losing one’s job; the upside is not having to go to work anymore. Of course, job loss comes with non-pecuniary costs that have been well documented: the loss of social status, growing insecurity, and declining emotional well-being that often comes with spells of unemployment (Jahoda 1982; Newman 1999; Dooley, Prause, and Ham-Rowbottom 2000; Burgard, Brand and House 2007; Young 2012). However, just as workers may value their jobs but complain about

their bosses, so might the unemployed lament the loss of work but also appreciate the extra free time. Exploring the possible upside of unemployment – and how much value it might actually have – simultaneously offers a unique perspective into modern frustrations with time.

From a quantity perspective, the free time that unemployment creates can be compared to an extended weekend. For most people, the weekend represents “two days of freedom” (Rybczynski 1991:7) in which workers live by their own schedules, do what they choose, and spend time with who they want – rather than living by the demands of their jobs. It seems to follow naturally, then, that more days off offers more freedom, more happiness, and more personal fulfillment.

This study explores two interrelated questions. First, what is it about weekends that people value? Is it simply having a rest day, or is there something more to weekends than time off work? Second, is extra free time a significant benefit for the jobless? Is there an upside to unemployment? In short, this is a study both of the experience of unemployment, and also a strategic testing ground for the broader characteristics of social time and network constraints.

We build our argument on two complimentary lines of work: the sociology of time and scheduling (Winship 2009; Zerubavel 1985, 1981; Bittman 2005); and the sociology of network goods (DiMaggio and Cohen 2004; DiMaggio and Garip 2011). We advance a simple model in which free time is a network good: people’s day-to-day happiness depends on how much quality time they can spend with family and friends (Kahneman 2011; c.f Fowler and Christakis 2008).

We make the case that the structure of the standard work week largely prevents unemployment from being a source of valued social time. Yet, the standardized work week also ensures that working people have rich social opportunities on their days off. Compared to an unstructured work week with no standardized rest days, the standard work week makes workers

better off (by coordinating their free time together) and makes the unemployed worse off (leaving them with few social opportunities during the week). Hence, there are both pleasures and sorrows of the standard work week (de Botton 2009): classically, the work week is an institution that both enables and constrains.

Drawing on half a million respondents from the Gallup Daily Poll, we show that workers and the unemployed have remarkably similar day-of-week patterns in their emotional well-being. Both experience a clear spike in their well-being on weekends, and a drop in well-being during the week. The unemployed have lower well-being than workers overall, but draw very similar enjoyment from weekends. This supports our theory that the standard work week limits what the unemployed can get from their extra free time. It also suggests that what people value most about weekends is not the day off work per se, but the social opportunities that are possible on *widely shared* days off.

We calibrate this finding by testing for similar patterns in social time with family and friends, using eight waves of the American Time Use Survey. Social time – for both workers and the unemployed – increases notably on weekends and drops during the week. Overall, the unemployed experience about 75 percent of the benefits of weekends, despite the fact that the unemployed have large amounts of free time every day of the week. Roughly half of this effect can be explained by the reduction in social time spent with family and friends during the week.

Network constraints in the value of time are important to understanding the problem of time pressure, and the difficulty of finding private, individual solutions to a problem that is at its core one of social coordination.

Scheduling Constraints and the Marginal Value of Time

Time, as Winship (2009) observed, comes with two basic kinds of limitations. One is the budget constraint: there are only 24 hours in a day. In this simple model, time is a homogeneous quantity: and hour is an hour, and the main problem is that there are not enough hours in a day. Labor economists have most clearly adopted this perspective, but it is also a simplifying assumption in excellent sociological work on time pressures (Schor 1991; Hochschild 1997; Jacobs and Gerson 2004). Indeed, the budget perspective is central to how most people think about time.

Winship's second limitation is the scheduling constraint, which shapes what individuals can do with their endowment of time. The scheduling constraint reflects one's ability to coordinate time and place with the people they want to interact with, and limits how one can transform free time into valued social time. Budget constraints are obviously important, but often people's real frustrations with time are due to the scheduling constraint: the challenge of aligning available time with that of others.

It is natural to think of having a time budget: we know that "time is money," and that we can spend time, waste time, and save time. However, the analogy between time and money has deep limitations. A budget of time is much less flexible or fungible than a budget of money, and is harder to manage (Winship 2009:502; Leclerc et al 1995). Unlike money, a surplus of time cannot be stored away and used later. Scheduled or anticipated free time can be quite precious since it allows planning and coordination to create high-value usage. Unexpected injections of free time, however, may have low marginal value.

Small pieces of extra time sprinkled throughout the day may also have limited value. Robinson and Godbey (2000) find that Americans' budgets of free time increased by 5 hours a

week between the 1960s and the 1980s. However, almost all of that gain – more than 90 percent – came in small increments during the Monday-to-Friday work week (p 128-9). This increase in free time, in turn, has largely become an increase in television viewing (340-42) – TV being a technology that is “ideally suited to taking up small gains in free time” (139). The main challenge is that bits of extra time cannot be stored away for later use.

In this sense, time is less like money and more like goods in a barter economy. Barter requires what Jevons (1890) called a “double coincidence of wants”: for exchange to occur, each party needs to have specific goods that the other party specifically wants.¹ If a farmer wishes to build a house, he must find someone who both (a) wants the farmer’s produce, and (b) has lumber or building supplies to exchange. Without a generalized currency, it is difficult to find exchange partners and the farmer’s produce has limited exchange value.

Time suffers from a similar lack of fungibility. Consider a person taking a trip to Hawaii. If they arrive at the airport an hour early, they simply wait. Even though they have nothing useful to do at the airport, they still can’t save that hour to use at the beach later. In contrast, if one saves \$50 on a cab by taking public transit, they can spend it later on surfing lessons. An injection of extra money has unique value because it can be stored; extra time cannot be saved, but only consumed in the moment, whether it is particularly wanted or not.² Time is a perishable good; money is not.

This means that unexpected time savings, rather than being a windfall gain, often leads to using time in ways that have low marginal value to individuals.³ Time slots increase in value when they can be shared with more people. For time to have a high marginal value, it often

¹ This can also be considered a matching problem (e.g. Stovel and Fountain 2009).

² In this sense, a surplus of free time is rather like being paid in hamburgers. It’s value depends on how many hamburgers you can enjoyably eat in one sitting.

³ The idea of “saving time” suggests a continuous schedule of activities, so that when one task is completed more quickly, one can start the next task ahead of schedule. The opposite of this is the “hurry up and wait” problem: the next task requires input from others who are not ready ahead of schedule.

requires a *double coincidence of wants* – one or more social others (spouse, friend, family member) who have the *same* schedule of free time. Otherwise, free time becomes spare time, and individuals face the prospect of “bowling alone” (Putnam 2000).

Time as a Network Good

Network goods are things that increase in value as more and more people have them. Whenever someone new acquires the good, it creates a positive externality for others. The telephone is a classic example. In 1910, few people had telephones in their home. As a result, there was little reason for a person to own a phone: there was no one to call. As the network of phone ownership expanded, there was more and more reason to invest in a phone. Every new household and business that had a phone created an incremental benefit to telephone ownership in general, as the technology increased in utility. Virtually all information technology have these kinds of network effects: the value of email, Facebook, Craigslist, PayPal, and text messaging all depend on how many other users there are (and often depend on how many users you personally know) (DiMaggio and Cohen 2005; Shapiro and Varian 1999). Things like dating or carpooling also likewise depend on how many other people want to do them (DiMaggio and Garip 2011); neither activity is possible without other available participants. When one person becomes single again, it creates a positive externality for other single people.

Time is a quintessential network good. Few things are best done alone. Most activities are either more enjoyable or more productive when done with others. The efficacy of things like factory production, political protests, church gatherings, Christmas parties, family dinners, and football games all depend on how many people show up for them. When an additional person goes to church, they create a positive externality for other church goers, who can enjoy a more

vibrant religious experience. The more family members show up for Thanksgiving dinner, the more a sense of family is created. Of course, network goods can run into diminishing returns and congestion problems. Production-line factory systems cannot run if only a few workers show up, but there can also be *too many* workers. Likewise, dinner parties can be too big, and there can be too many cooks in the kitchen. Infinitely increasing returns to population is not needed for network effects to be important. For many leisure activities, a handful of people make the difference between isolation and rich interaction. In any event, coordinating multiple participants to be engaged in the same social event is a basic precondition for successful “interaction rituals” that generate the emotional energy, mutual entrainment, collective effervescence, and feelings of solidarity and belonging that make up the micro-foundations of society (Collins 2004).

The Standard Work Week as a Coordinating Mechanism

The standard work week is one of the most important (and taken-for-granted) institutions that provide social coordination of time and participation. By coordinating everyone to work much the same hours and take the same days off, the standard work week makes both work *and* leisure more attractive (so long as they happen at the right times). First, a standardized work week means that when we have a day off work, so do most other people we know. This maximizes shared time available for social interaction on days off (weekends and holidays), and raises the value of leisure time for most people. Second, when we have to go to work, so does most everyone else. The standard work week eases the opportunity cost of going to work; there are few important events that people are missing during usual working hours. This reduces the desire to take extra time off, and encourages full-time work.

In contrast to a standardized work week, imagine a system in which there are no fixed weekends; all days are potential work days (Hornstein 2002). People choose which two days they want to take off. People work five out of seven days, and each day roughly $\frac{5}{7}$ ths of the labor force comes into work. Factories and office buildings run with a mostly full (70%) staff seven days a week. Since people would have greater choice over their working days, the system offers a net increase in freedom. It is analogous to ending the custom of church on Sundays, and letting church-goers at each congregation to sort out for themselves which day would really work best for worship.

A rotating, seven-day work week is not just a thought experiment. It was implemented on a mass scale in the Soviet Union in 1929, in an effort to maximize industrial production (Zerubavel 1985; Foss 2004). The central goal was to keep the factories running every day, transforming the 52 Sunday shutdowns per year into full production days. The new “Red Calendar” was a complex creation that divided the months into five-day, rather than seven-day, weeks. Factories would operate every day, with 80 percent of staff on duty. Each day, one-fifth of workers would have the day off. The new calendar allowed for the continuous operation of factories, and also increased the number of leisure days workers had. Soviet workers now rested one out of every five days (73 days a year), rather than the previous one out of seven (52 days a year) [as was the norm in the West at this time]. In effect, the new system increased the work week of *capital*, while reducing the work week of *labor*. Nonetheless, the Red Calendar survived only two years, and suffered many practical problems of implementation. Most importantly, as Foss (2004:47) notes, “workers hated it.”

The Red Calendar gave people more free time, but made it exceedingly difficult to coordinate that time with anyone else. Many families saw their shared rest day – the old Sunday

– disappear. They now had more days off, but many never had the same day off as their spouse. “Authorities essentially divided the entire society into five separate working populations, staggered vis-a-vis one another” (Zerubavel 1985:38). If spouses were assigned different work days, they would almost never have a shared day of rest. Only 20 percent of the workforce would share a common rest day, so the odds of connecting with family and friends were low. “In address books, people would add to the names of friends and acquaintances... the day of the week on which [those people] were off duty” (Zerubavel 1985:37). The official Soviet newspaper *Pravda* gave voice to the complaint: “What is there for us to do at home if our wives are in the factory, our children at school, and nobody can visit us...? *It is no holiday if you have to have it alone*” (quoted in Zerubavel 1985:38, emphasis added).

The central lesson from this experiment in re-engineering time is the primacy of scheduling constraints and the network properties of free time. Even large increases in the budget of free time matters little when those hours are disconnected from the lives of our social others. We do not just want time away from work; we want free time when *our family and friends* have free time.

A modest formalization helps to drive this point home. In a society without a standard work week, the chance of a rest day, r , jointly shared with n people is given by r^n . The coordination challenge increases exponentially with the number of people involved. With two rest days per seven-day week, each person has an $r = 0.28$ chance of being off work on a given day. What are the chances that their days off by coincidence align with others? For two friends (i.e., 0.28^2), the daily chance that they will have the same day off is only eight percent (once every 12 days), for three friends the chances are a mere two percent (once every 45 days), and for four friends the chances are roughly one-half of one percent (once every 162 days). The

occasion of four specific people having the same day off work purely by chance would happen only twice a year. Without coordination, friends and family members would rarely have the same day off work. The standard work week helps ensure that a person's rest day is simultaneously a widely shared day of rest – a social day.

Weekend Effects

What is a weekend? Is it a time of rest, where we are freed from having to go to work? Or is the weekend a social event, where we are able to spend more time with family and friends? Which aspect is most valuable to us: the rest time, or the social time?

In the standard work week, “rest days” and “social days” perfectly overlap as weekends. It is not possible to distinguish the value of rest, as apart from the value of greater social time with family and friends. A day off means a weekend, which means broadly-shared time away from work: rest *and* social time.

The unemployed allow us to unbundle these two aspects of the weekend. For the unemployed, all days are “rest days” – they may keep busy, but they do not go to work for an employer. Weekends to the unemployed are part of an undifferentiated sequence of days with plenty of free time to use as they wish (albeit with limited income every day of the week). What makes weekends special for the unemployed is that *other people also have time off* – two days per week when scheduling constraints are relaxed, and rest days can become social days. Weekends distinguish between “rest” days and “rest + social” days. To what extent does time off during the week compare to time off on the weekend? To answer this question, we compare time use (especially social time) and the emotional well-being of the unemployed on weekdays and weekends.

Workers alternate between “work” and a “shared day off work”. Thus, workers and the unemployed have notably different lifestyle changes on weekends. The difference between workers and the unemployed in how they value and experience a weekend sheds important light into what a weekend is, and also the value of having free time during the week.

Table 1. Time Use by Day-of-Week for Workers and the Unemployed

	Monday – Friday	Saturday - Sunday
Worker	Work (W_w)	Rest and Social (RS_w)
Unemployed	Rest (R_u)	Rest and Social (RS_u)

The key difference between workers and the unemployed is not what they do on a weekend (which is structurally similar) but what they do during the week. This makes a day-of-week difference model highly informative. The research strategy is not focused on making direct comparisons between workers and the unemployed. Rather, this is a difference-in-difference strategy, focused on how each group experiences the change from weekend to weekday, given the very different changes that a weekday represents for these groups. Those differences allow us to unbundle the experience of unemployment between “rest time” and “social time,” to gauge the (non-financial) cost of going to work versus staying home during the week, and estimate the extent to which people value weekends for rest time or for social time.

We believe that the unemployed make for a strong comparison group for this analysis, serving as a counterfactual case for understanding how working-age people react to large, uncoordinated injections of new free time.⁴

Data Sets

We use two independent datasets to test our hypotheses: the Gallup Daily Poll and the American Time Use Survey (ATUS). First, we use the Gallup Daily Poll to examine subjective well-being by day of week for workers and the unemployed. Second, we use both Gallup and the ATUS to examine the amount of social time enjoyed by both groups each day of week.

Since 2008, Gallup has interviewed at least 1,000 American adults each day, and by 2011 had sampled almost 1.3 million respondents. The Daily Poll includes questions on emotional well-being and labor force status and offers a unique opportunity to study small populations. For example, a key estimate of interest in this study is the well-being of unemployed people on weekends. However, less than five percent of the total sample is jobless⁵, and only one-in-five of those respondents were sampled on weekends. Despite this small baseline population, that leaves us with a sample of “unemployed people on the weekend” of nearly 9,000 respondents – larger than what most social surveys collect for their entire sample.

In this study, we focus on the data collected between January 2009 and December 2011. Prior to 2009, the Gallup data do not allow us to identify the unemployed. Even without the 2008 data, the Daily Poll includes more than 970,000 respondents. Some 54 percent of them were

⁴ An alternative, or complimentary, strategy could be focusing on people who have non-standard work hours. Nonstandard employment arrangements – rotating shifts, working nights, and the like – have been called “unsociable work” (Strazdins, et al 2006:394). A considerable literature documents the negative effect of unsociable work hours on families – declines in marital satisfaction, problems with children, and greater risk of divorce (White and Keith 1990; Presser 2000; Strazdins, et al 2006). We are planning future work to further explore the issue of non-standard work arrangements.

⁵ This corresponds to an unemployment rate in the sample of 7.5%, which is not far from the official unemployment rate during this time. Note that the unemployment rate excludes a large portion of the population that is out of the labor force.

either employed or self-employed at the time of survey. About 4.5% of all respondents, or 43,112 respondents, were unemployed: not working but “actively looking for employment” and able to start working if they were offered a job. Respondents are distributed approximately equally across the seven days of the week.

We focus on seven questions in the Daily Poll on positive and negative emotional well-being (Diener et al 2010; Diener 1994; Kahneman et al 2004). For positive well-being, the questions are whether respondents “smiled or laughed”, experienced “enjoyment”, and experienced “happiness” a lot on the previous day. Respondents answer yes/no to these questions. We consider this somewhat unfortunate, as a wider range of possible responses would capture more variation in well-being. Averaging the three responses, the variable for positive emotions ranges from 0 for people experiencing no positive emotions to 1 for people who experienced all of them. For negative well-being, four questions asked whether or not respondents experienced “worry”, “sadness”, “stress”, or “anger” a lot on the previous day. These scores are likewise averaged to range from 0 for respondents who did not experience any negative emotion to 1 for respondents who experienced all four negative emotions (see appendix for more details).

In addition to these measures of emotional well-being, the Daily Poll asks a simple question of how many hours respondents spent socially with friends or family the day before (including telephone, e-mail, or other online communications). With this question, we can examine how the amount of social time fluctuates from weekday to weekend.

To augment these data, and obtain a more robust measure of social time, we examine eight waves of the American Time Use Survey (ATUS). The ATUS is collected by the Bureau of Labor Statistics, and is an offshoot of the Current Population Survey (CPS), administered 2 to 5

months after a respondent has completed their CPS rotation. Respondents are asked to recount the activities of one single day, beginning at 4am ‘yesterday’ and ending at 4am on the morning of the interview. From these records we use the aggregate time spent with family, and time spent with friends. The categories are not completely exclusive, as people can spend time with both friends and family simultaneously. However, this provides a more detailed and comprehensive measurement of social time than in the Gallup Poll, allowing us to both calibrate and enrich that evidence.⁶

The 2003-2011 waves of the ATUS give a pooled sample 6,212 unemployed respondents, and 78,661 working people. The unemployment rate in the study (unemployed / labor force) is 7.3 percent. The survey substantially over-samples weekends. Half the sample is selected to report on a weekday (Monday to Friday), and half to report on a weekend (Saturday-Sunday). We treat the seven holidays included in the sample as weekend days (New Year’s Day, Easter, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas), as we do with the Gallup data. Missing data, primarily due to non-response on family income, reduces the final sample of labor force participants to 61,684. Appendix A shows the descriptive statistics for the ATUS data.

Random Assignment to Weekends

An important aspect of both these data sets is that respondents are randomly assigned to report on a weekday or a weekend. This means that our key estimates of interest are generated from a large-scale experimental design (Campbell and Stanley 1963).

⁶ Note that the ATUS social time measures are based on co-presence, and do not include time spent on electronic communication.

The key challenge of observational studies is that estimated effects could represent true impacts of a treatment, or unknown selection mechanisms that create artificial differences between treatment and control groups. Weekend effects could be due to true differences in well-being and social time on weekends (versus weekdays) or self-selection into reporting on weekends. If people could choose what day of the week they answer the survey, many (especially the most busy people) might delay until the weekend – making the weekend respondents a self-selected group that are quite different from people who answered on weekdays. This, in turn, casts doubt on what the estimated weekend effects represent: causal effects of the weekend, or a statistical artifact arising because different types of people answer the survey on the weekend. Random assignment to weekends rules out selection effects that could bias our core estimates.

As Lee and Lemieux (2010) suggest in the context of regression discontinuity designs (of which this study could be considered a special case), the effectiveness of the random assignment can be tested (see also Sacerdote 2001). The group that receives the “treatment” (in this case, the weekend group) should look otherwise identical to the control group (those reporting on the weekday). If this holds, then the random assignment is deemed successful and the resulting estimates from a simple comparison of means gives a causal estimate, without any need for regression adjustment or concern for omitted variable bias.

In Appendix A, we show that for both data sets, those reporting on the weekend are more or less demographically identical to those reporting on weekdays. There are small differences that achieve statistical significance due to our very large sample sizes, but which are substantively unimportant. For example, in the Gallup data, the difference in family income between the weekend and weekday groups is \$32 per month, a difference of one-half of one

percent (\$6,027 versus \$6,060). The difference in the percent of the sample that is Asian (1.8 percent on weekends, 1.7 percent on weekdays) is also statistically significant but clearly trivial. In the ATUS data, the average age of both groups rounds up to 42 years, though the one-quarter of a year difference achieves statistical significance. The only area of concern relates to small differences in the employment status of Gallup respondents. On the weekends, the Gallup respondents are 1.2 percentage points more likely to have a full time job, and 0.7 percentage points less likely to be unemployed. Our full regression specifications adjust for employment status, but we cannot rule out the possibility of small differences of this magnitude between the weekend and weekday samples on unobserved variables. Nonetheless, our conclusion is that random assignment was successful in both data sets. We infer from this test that the risk of bias from omitted variables (ie, substantive unobserved differences correlated with both the treatment and the outcome) is low in the Gallup data, and essentially zero in the ATUS data. The identification of treatment effects is unusually strong for a study based on observational data.

Model Specification

There are five outcome variables in this study: first we focus on (1) positive emotions, and (2) negative emotions, and next we focus on (3) social hours, (4) time spent with family, and (5) time spent with friends. The key treatment variable is day-of-week (simplified as weekday versus weekend), with employment status serving as a context variable for the treatment effect. To simplify the exposition, this paper excludes persons out of the labor force. This exclusion has no bearing on the estimation of the central parameters of interest.⁷ The basic well-being and time use model, without control variables, is written as

$$1. Y_i = \alpha + \beta_1 Worker_Weekend_i + \beta_2 Unemployed_i + \beta_3 Unemp_Weekend_i + \varepsilon_i$$

⁷ Data on people out of the labor force OLF is not relevant to computing coefficients listed in equation 1.

The parameters of this model give the simple average outcome (either well-being or social time) for four conditions:

- I. Working people on *weekdays* (Monday to Friday): α
- II. Working people on *weekends* (Saturday, Sunday, and holidays): $\alpha + \beta_1$
- III. Unemployed people on *weekdays*: $\alpha + \beta_2$
- IV. Unemployed people on *weekends*: $\alpha + \beta_2 + \beta_3$

This approach is equivalent to – and gives identical results as – computing well-being and social time averages for each of the four groups. The comparison of weekend effects is simpler. The increase in well-being / social time on weekends for workers is given by β_1 , while the weekend increase for the unemployed is given by β_3 .

We extend this basic model in the usual way by adding in control variables for age, gender, race/ethnicity, children in the home, education, and family income.⁸ Since this study already provides random assignment to weekends, we expect that our raw weekend effects will be unaffected by the inclusion of control variables. However, the controls are likely to allow a more accurate estimate of β_2 , the difference between workers and the unemployed during the week. This model is specified as

$$2. T_i = \alpha + \beta_1 \text{Worker_Weekend}_i + \beta_2 \text{Unemployed}_i + \beta_3 \text{Unemp_Weekend}_i +$$

$$\mathbf{X}_k \boldsymbol{\delta}_k + \varepsilon_i$$

in which \mathbf{X}_k is the $k \times 1$ vector of control variables, and $\boldsymbol{\delta}_k$ is the $1 \times k$ vector of coefficients. In this multiple regression model, the well-being and time use values of interest (I – IV) are computed

⁸ The list of control variables is calibrated as closely as possible across our two data sets. The only difference is that ATUS includes a measure of annual family income, while Gallup uses monthly family income.

the same as above, after adding $\mathbf{X}_k \boldsymbol{\delta}_k$ computed at the mean or representative value of each control term.

Descriptive Evidence:

Emotional Well-being on Weekends versus Weekdays

Since our core estimates of interest – the weekend effects for workers and the unemployed – are derived from random assignment and very large samples, we begin with a descriptive analysis of the raw data. After giving an intuitive “eyeball” analysis, we check the robustness of this using regression adjustment for a host of socio-demographic covariates.

As a starting point, we plot the average positive and negative emotions of workers and the unemployed by day of week. In figures 1 and 2, we start the graphs mid-week to give a clear view of the beginning and ending of weekends (which occurs at the mid-point of our figures). This reveals three basic findings. First, weekend effects are clear, with a rise in positive feelings and a drop in negative emotions on weekends. Second, the unemployed have notably lower well-being every day of the week (less happiness, more stress and worry) compared to workers. This is consistent with previous work on the experience of unemployment (e.g., Young 2012; Burgard, Brand and House 2007). Third, the weekend effects for workers are strikingly similar to those of the unemployed. Though the unemployed do not go to work, they seem to be looking forward to the weekend in the much the same way as workers.

Figure 1. Positive Emotions by Day of Week

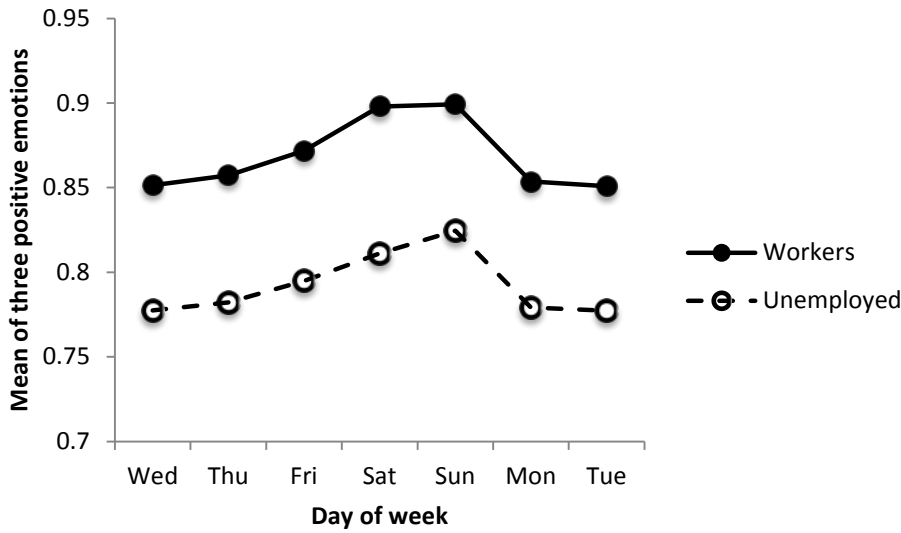
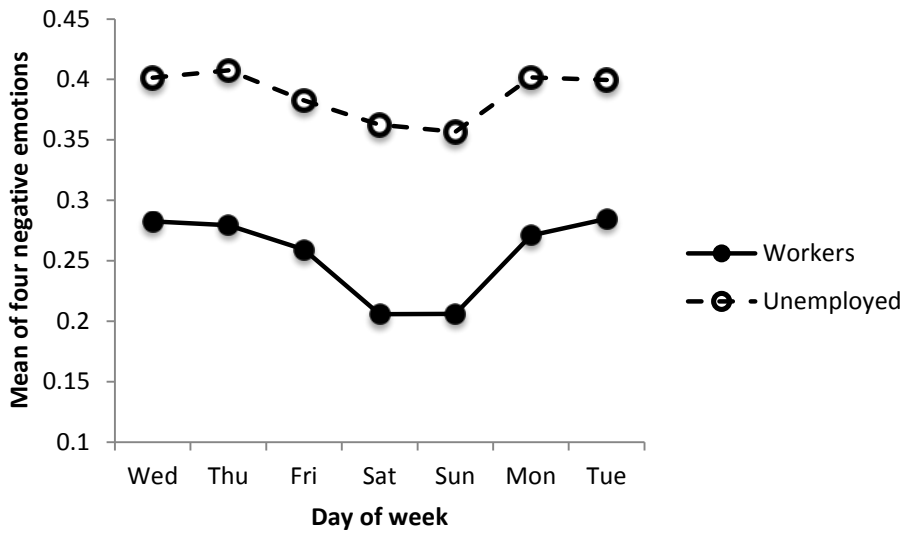


Figure 2. Negative Emotions by Day of Week



Source: Gallup Daily Poll, 2009-11.

To get another perspective on these data, in Table 1 we simplify the day-of-week comparison to weekends and weekdays, and look at each emotion variable separately. For employed people, the all three positive emotions increase on weekends by about 5 percent. Among the unemployed, the weekend boost is essentially the same. This is shown in the ratio of the weekend effects of the unemployed to the weekend effects for workers, which is 93 percent.

On weekends, workers see their negative emotions drop by about 24 percent on average (ranging from 10 to 35 percent, depending on the variable). Worry, stress, and anger show the largest drops, while sadness has the smallest decline. The jobless experience a drop in these emotions on weekends of about 12 percent. The average ratio indicates that the unemployed experience about 53 percent of the weekend reduction in negative emotions as workers.⁹

Weekends have greater effects on negative emotions, we suspect, for two reasons. First, there is simply a lower rate of reporting negative emotions. People are much more likely to report being happy than being angry, at least partly due to social acceptability bias. This low baseline rate of negative emotions makes the percent changes look larger. Second, as we will show in the regression results, the coefficients on almost all variables are larger in the analysis of negative well-being than in positive well-being. Reports of negative well-being seem more elastic to circumstances than reports of positive well-being.

In any event, taken across both positive and negative measures of well-being, the jobless take in nearly three-quarters as much of the weekend effect that working people enjoy. However, there is a clear difference, in that negative emotions decline more for workers than the unemployed on weekends. A visible portion of the relief from stress, worry, and anger on the weekend is unique to working people. Weekends are a decompression time – a relief from negative feelings – for workers more than they are for the unemployed. While the unemployed

⁹ The differences in this table can be thought of as semi-elasticities: the percent difference in well-being due to the difference in employment status. Using the marginal effects (unit differences in well-being) produces similar results. To exactly replicate our baseline regression model, the positive and negative groups would each be averaged (i.e., average positive, and average negative emotions) before calculating the ratio of weekend effects. Doing so with marginal effects gives average ratios of 84% and 63% for positive and negative well-being respectively. That leads to a very similar overall conclusion. The table (Table 1) as printed gives a more clear and simple representation of the data, and gives very similar average ratios as reported in our full regression models, below.

have more negative emotions during the week on every measure, the negatives do not drop on the weekend as much as they do for workers.

Regression Results

How robust are these conclusions to the addition of control variables for socio-demographic differences, including age, sex, race, family status, income, and education? In Table 2, we report the full details of our regression results for positive and negative emotions. Model 1 shows regression results for positive well-being by employment and weekend status. The weekend effect of unemployment (+.038) is very similar to that for workers (+.043), both of which are highly significant. The difference in coefficients between the two groups (.005) is small and non-significant.

Adding in controls (model 2) does not change the weekend effect estimates, as we expected since both workers and the unemployed are randomly assigned to report on weekends. The change in the estimated weekend effects from model 1 to model 2 is barely visible, changing only slightly for the unemployed and the difference is far from statistical significance.¹⁰ The controls *do* mute the negative baseline effect of unemployment, reducing it from -.075 to -.061, indicating that some of the raw effect of unemployment is due to demographic differences.¹¹ The point estimates indicate that the unemployed experience about 90 percent of the weekend effect that workers do.

It is worth noting that weekend effects are large relative to almost all other influences on well-being. The sociological significance of weekends for well-being is greater than socio-demographic factors including marriage, race, and education, but lesser than unemployment.

¹⁰ The t statistic is simply the difference in coefficients divided by the square root of the sum of the squared standard errors (Paternoster et al 1998; Gelman and Stern 2006). For the difference in weekend effects for the unemployed from model 1 to model 2, this is $\frac{(0.039 - 0.038)}{\sqrt{0.005^2 + 0.005^2}} = 0.14$.

¹¹ This difference is statistically significant with a t statistic of -3.29.

Model 3 looks at the determinants of negative well-being, and model 4 adds demographic controls. Weekends reduce negative feelings such as stress and worry for both groups, but more for workers (-.071) than for the unemployed (-.039). Again, these point estimates do not change when control variables are included (model 4). And the baseline effect of unemployment is significantly smaller in model 2 than model 1 (t-statistic = 4.94). While there is selection into unemployment based on observed covariates, this evidence continues to support the effectiveness of random assignment into weekends.

The point estimates indicate that the jobless experience 53 percent of the weekend effect that workers enjoy. The statistical test of the null hypothesis that the two groups have equal weekend effects is easily rejected, with a t-statistic of approximately 60. There is clearly reliable empirical support for weekends as having unique, additional value for workers.

Finally, as seen with positive well-being, weekend effects rank among the most important influences on negative well-being. Even for the unemployed, weekend effects equal or outweigh factors like education, gender, marriage, and parental status. Only unemployment itself has a clearly larger effect on well-being than do weekends. Averaging across positive and negative emotions, the unemployed experience about 73 percent of the weekend rise in well-being that workers enjoy.

Does Social Time Explain Weekend Effects in Well-being?

Something about the standard work week leads to higher well-being on weekends, even among the jobless. Going to back to work on Monday provides limited explanation for the drop in well-being. To what extent is this because social time declines during the week for both workers and the unemployed? Are the weekday patterns of social time similar to the patterns in well-being?

First, we plot social time use by day of week, using the raw data. Figure 3, time spent with friends in ATUS, shows large spikes around the weekends for both workers and the unemployed. Saturday is clearly the peak day for time with friends. The unemployed, compared to workers, spend more time with friends every day of the week. There is also some difference in the weekend effects for workers and the unemployed. For workers, time with friends is elevated on Friday, Saturday, and Sunday. For the unemployed, there is more noise in the day-to-day estimates, but their time with friends appears elevated on Friday and Saturday only; by Sunday, time with friends has returned to their weekday average.

Figure 4, time with family, also shows clear weekend effects, with Saturday and Sunday being roughly equal peak days of family time. The unemployed spend more time with family Monday to Friday, and their weekend increase is about half of what workers experience.

It is not the case that the unemployed have no one to spend time with on weekdays. Their social time is certainly lower than on weekends, but remains higher than the amount of social time that working people have Monday to Friday. A full assessment of the evidence clearly needs to take this fact into account. However, in supplementary analyses not reported here, the amount of time the unemployed spend alone is also higher Monday-to-Friday (+1.8 hours) than on weekends.

In summary, there are strong weekend effects in social time for both workers and the unemployed. This provides a promising account of why both groups have similar weekend effects in their well-being.

Figure 3. Time with Friends by Day of Week (ATUS)

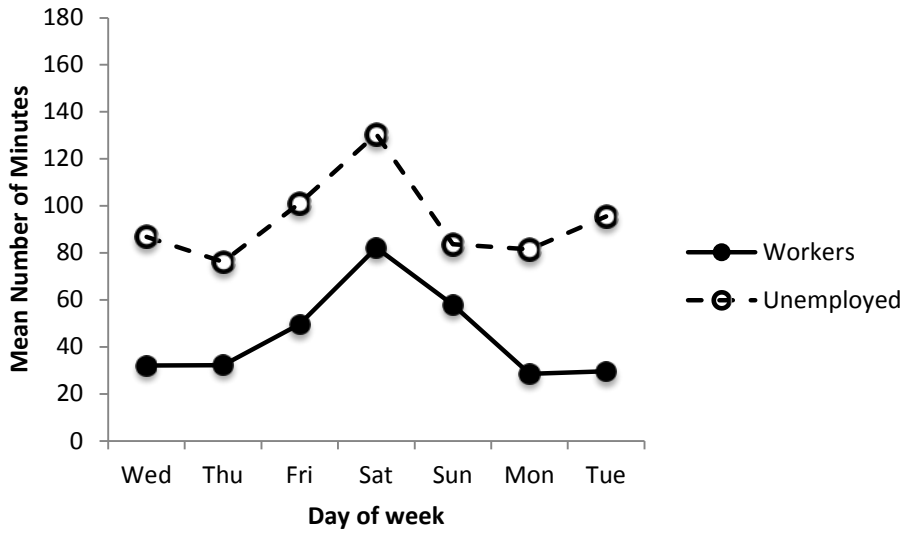
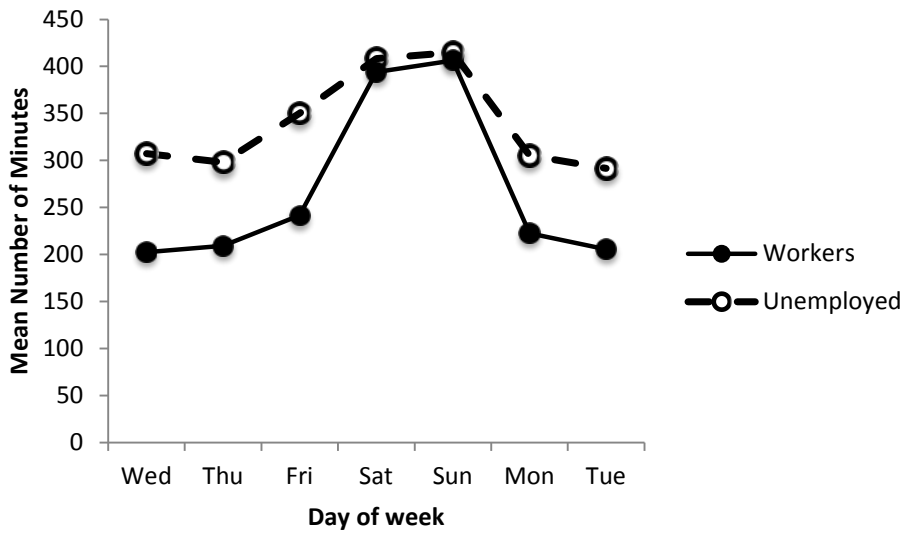


Figure 4. Time with Family by Day of Week (ATUS)



Source: American Time Use Survey, 2003-11

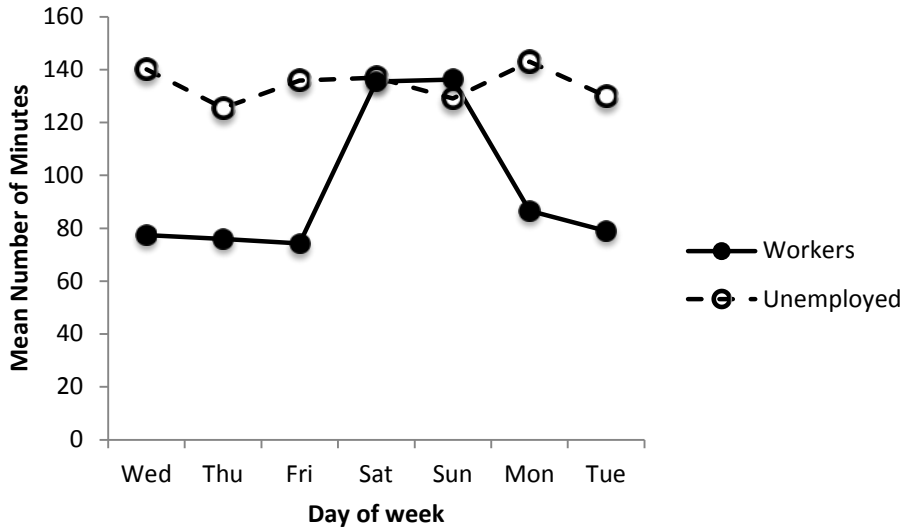
Table 3 shows the full regression results for social time in ATUS. Model 7 shows the results for time spent with friends including unemployment and weekend status without controls. For the unemployed, time with friends increases by 18.5 minutes, compared to 36.7 minutes for workers. With the full set of controls in model 8, the weekend effect for the unemployed rises

slightly to 20.2 minutes, and is unchanged for workers at 36.6 minutes. The difference in weekend effects is statistically significant (t-statistic = 3.69).

Model 9 shows estimated weekend effects for time spent with family. Working people increase the amount of time spent with family on weekends by 189 minutes – over three hours. For the unemployed, the increase is 103 minutes – roughly an hour and a half. Adding in demographic controls in model 10 changes the estimate for the unemployed weekend effect slightly, dropping to 97 minutes. Time spent with family increases by half as much for the unemployed as it does for workers. The difference is due to the greater ability of the unemployed to spend more hours with family during the week. Nonetheless, a clear limitation on social time with family during the week remains.

As a reference point, we also consider household labor. Chores around the house are not subject to social network constraints in the way that social time is. People do not need to coordinate with social others in order to productively engage in household labor: cleaning, cooking, yard maintenance, household repairs, and the like. Most household labor, we argue, is about as productively done alone as with others, and we expect to see no weekend effect in household work among the unemployed. Figure 5 shows that this is indeed the case.

Figure 5. Time on Housework by Day of Week (ATUS)

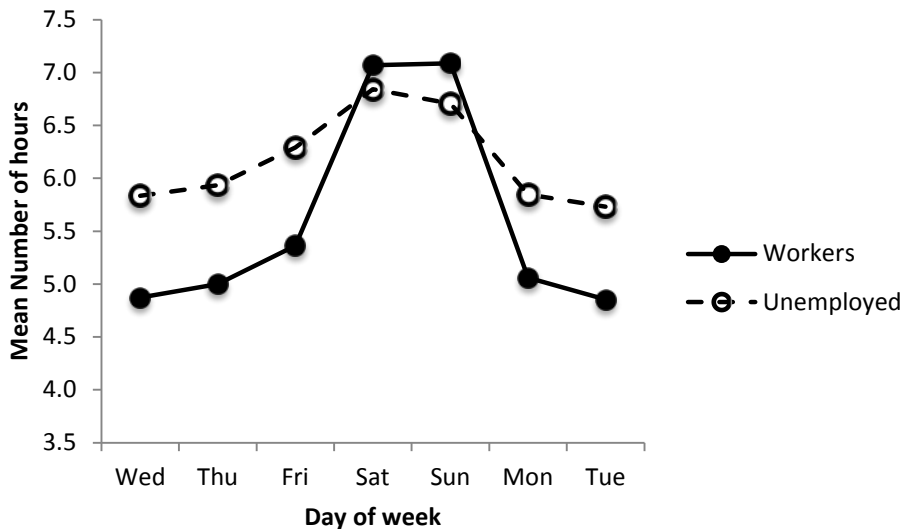


While workers increase their household work on weekends, the unemployed have a stable, high level of housework. Workers, in effect, coordinate their household labor to not conflict with their market work times. The jobless spend about 2 hours and 15 minutes per day on household work – equivalent to what workers do on weekends. With a “day off,” workers and the unemployed spend equal amounts of time on household work. It is just that the unemployed have five more days off per week. If social time was not subject to network constraints, this is what we expect patterns of time with friends and family would look like.

In Table 3, models 11 and 12 show that while there are clear weekend effects in household labor for workers, there is no weekend effect at all for the unemployed.

The Gallup data also provide evidence of how time use varies by day of week. Figure 6 shows a general measure of “social hours” for weekends and weekdays from the Daily Poll. The results are similar to the ATUS data. In table 2, models 5 and 6 show that workers see an increase in social time of 2.1 hours (125 minutes) per day on weekends, while the unemployed see an increase of 0.9 hours (55 minutes). Thus, in the Gallup data, the unemployed experience 43 percent of the weekend effect in social time. During the week the unemployed spend nearly an extra one social hour per day more than workers.

Figure 6. Social Hours by Day of Week (Gallup)



Source: Gallup Daily Poll, 2009-2011

In summary, the unemployed experience 55 percent of the weekend effect in time spent with friends that the employed experience, 52 percent of the weekend effect in time with family, and 43 percent of the social hours effect in the Gallup data. Overall, this suggests weekends should be about half as important for the unemployed as they are for workers. This does not seem to provide a complete explanation of why the unemployed enjoy three-quarters of the

weekend effect in well-being. But, the commonality of the patterns in well-being and social time suggest this is a prominent explanation. The next step is to test the underlying assumption that social hours increase well-being, and if so, do they increase well-being by enough to explain the weekend effects?

In Table 4, we incorporate the Gallup social hours variable into the initial well-being regressions. For roughly one-third of our observations, data on social hours is not available. This reduces the sample size down to about 333,000. Model 13, the determinants of positive emotions, replicates model 2 with the smaller sample. None of the estimates of interest are meaningfully affected by the sample size reduction. However, including social hours (model 14) does have a clear effect. The weekend effect for the unemployed drops by 38 percent, from .040 to .025, and drops for workers by 77 percent (from .044 to .010). The number of social hours explains about 57 percent of the increase in positive emotions on weekends. This is about what the simple day-of-week analyses suggested.

For negative emotions, models 15 and 16 show that when social hours are included, the weekend effects fall by 28 percent for the unemployed and 31 percent for workers. Thus, social hours explain about 29 percent of the reduction in negative feelings on weekends. This is somewhat less than expected from the simple day-of-week patterns. The reason is that the number of social hours people spend has less of an effect on negative emotions like stress and sadness (.011 in absolute value) than it does on positive emotions (.016 in absolute value).

Overall, averaging across positive and negative emotions for both workers and the unemployed, the number of social hours people enjoy explains 43 percent of the weekend wellbeing effects.¹² There remain weekend effects in wellbeing that are both statistically and

¹² This is the average reduction in the four weekend coefficients as a result of including social hours in the regression models.

sociologically significant for both workers and the unemployed. There is something *in addition* to social hours that makes weekends better than weekdays for both workers and the unemployed.

An important result from Table 4 is that social hours do not explain the baseline effect of unemployment – in fact, including social hours makes unemployment look even worse. This sheds light on why the unemployed have lower wellbeing even though they have more social time than workers. Social time during the week does partly compensate for the distress of unemployment. Without it, the unemployed would be more distressed. However, the negative effect of unemployment is very large compared to their gain in social hours. For positive wellbeing, the effect of unemployment is $-.080$, which is roughly five times as large as the effect of a social hour. For negative wellbeing, the effect of unemployment is $.118$, which is ten times the effect of a social hour. In other words, it would take five extra hours of social time each day to compensate for the drop in happiness among the unemployed, and 10 extra social hours to compensate for the increase in stress and sadness. But, in the Gallup data, unemployment gives people an extra *one* hour of social time. Unemployment is a very costly way to leverage extra social time.

Discussion and Conclusion

The goal of this paper has been to address two basic questions. What is it about the weekend that people most value: rest from work, or social contact? And, to what extent does extra free time give a valued benefit that can offset the socio-economic costs of unemployment? Both these questions feed into a basic understanding of time. Is time best understood as analogous to money, in which the primary concern is one's budget of free time? Or is time better

understood as a network good, in which the marginal value of extra time can vary widely (Winship 2009; DiMaggio and Garip 2011)?

The analyses here present a series of new and potentially important social facts. First, weekends have an effect on wellbeing that is clear and large relative to other determinants of wellbeing: weekend effects are sociologically important. However, the benefits of weekends are *not* primarily due to having time off from work: the jobless experience about three-quarters of the benefit of weekends. Only about a quarter of the weekend rise in wellbeing can be readily-attributed to rest from work. In other words, if days off work were not socially-coordinated via a standard work week, workers would gain only one-quarter of the benefits of a rest day. That is the portion of the weekend effect that is unique to workers, who are enjoying a day off.

Second, the amount of social time that people have increases substantially on weekends, for both workers and the unemployed (although more so for workers). Weekends are uniquely social times, and this is key to understanding their value. Increases in social time explain nearly half (43 percent) of the weekend rise in well-being. A large part of why weekends are better than weekdays is that friends and families spend more time together (regardless of employment status). This is a byproduct of the standard work week, which coordinates large numbers of people to have free time on these days.

Third, a significant part of weekend well-being remains unexplained by either time off work or extra social hours. Controlling for social hours, there is still something qualitatively better about life on weekends. Central to understanding this is to note that much of this residual benefit accrues to the unemployed as well as workers.

We think the residual weekend effect is due to differences in the quality – rather than just quantity – of social time on weekends. There may be a variety of reasons for this, including social multipliers, compensating stresses, and network dynamics during joblessness.

A social multiplier extends the idea of macro-social benefits to having a large portion of the workforce with a shared day off. The *direct* effect of having the day off is relief from job pressures and time-stress. This, in turn, may have indirect effects on others. People with a day off may interact with the world in a more positive way – they are less busy, less tired, and have more emotional energy to share with others (cf, Collins 2004). The increased quality of interaction produces a social multiplier that increases with the share of the population that has a given day off. When much of the population has a day off, employed people have the most direct benefit, but non-working people also benefit from more enjoyable interactions with workers who are enjoying their rest day. People’s happiness is partly a function of the happiness of the people around them (Fowler and Christakis 2008). Conversely, stressed out people become even more stressed when surrounded by other stressed people. Having a day off creates a positive externality for non-workers.

There may also be compensating stresses during the week for unemployed people. In secondary analyses not reported, the ATUS data show that unemployed people schedule most of their job search activities during the week. Thus, Monday-to-Friday may be the principle time when the jobless ruminate about their predicament and experience job-application rejection from employers (Pager 2007; Krueger and Mueller 2012). Weekends offer reprieve from this, and “going back to unemployment” when the weekend is over may be similarly unpleasant as “going back to work”. This is a model in which the standard work week structures how and when the jobless reflect on their difficult life circumstance.

Finally, there may be important network dynamics that occur during joblessness, in which people's networks of association change. Unemployed people during the week may spend time with more distant friends who also happen to be unemployed or out of the labor force, which is not as rewarding as spending time with the closer friends that they see on weekends. Do social contacts shift during unemployment from a homophily principle towards an availability principle? Is there a shift from social others they *want* to spend time with towards those they are *able* to spend time with? In the General Social Survey, the unemployed are much more likely to have other unemployed people in their trusting social networks than random mixing would suggest (DiPrete et al 2011). Moreover, evidence suggests that being around other unemployed people makes the jobless feel worse, rather than better (Nordenmark 1999). If the unemployed fill in their weekdays with social contact with people less close to them, and with people who are more depressed and anxious, this could help explain the residual difference in weekend effects between workers and the unemployed.

Those three factors may round out our knowledge of weekend effects, and more fully clarify the social dynamics that make weekends rewarding social times, even when they are not uniquely days off from work.

Further, we reiterate that the unemployed are people who have gained large amounts of free time. This has come at a steep cost: a loss of income, diminished social status, and personal anxiety about their role as a productive member of society (Young 2012; Burgard et al 2007; Newman 1999). Nevertheless, the jobless may resent being unemployed but simultaneously value their extra free time away from work (in the same way that one might value their job but dislike their supervisor). We find that this is true, but only weakly so. The jobless spend more social time with people than working people do, showing a tangible benefit of unemployment.

However, the social-psychological costs of unemployment are very large relative to the extra social time that is available during unemployment. Social time does moderate the distress of unemployment, but we find the jobless would need five to ten times more hours of social contact than they actually get in order to erase the social-psychological harms of job loss.

In short, our evidence supports 1) that free time is a network good, whose value depends on how many of your social contacts also have free time; and 2) that the unemployed are disadvantaged by this dynamic. The dilemma of the unemployed is that while they have additional free time during the week, other people still have to go to work. Equivalently, working people may think of their job as “a drag” because they compare it to their life on the weekend – not to the achievable alternative of staying home during the week.

The standard work week coordinates work life in a way that maximizes social time and well-being on weekends, and creates a strong perceived relationship between workdays and unhappiness. Yet, it also means that individuals cannot easily avoid the unhappiness of the work week by not going to work. Individual days off during the week seem to fall very far short of the experience of shared weekends. This emphasizes that the standard workweek is an institutional structure that both enables and constrains (eg, Brinton and Nee 1998; Ingram and Clay 2000).

A key implication of this study for the time famine literature is its emphasis on the structural nature of time pressures. Because time is a network good, it is hard to find individual solutions to problems of time pressure. Collective solutions are more valuable and effective than individual ones. Weekend well-being is a collectively-produced social good; time famine is a collectively-produced rat race. Individualistic solutions are hard to sustain against collective action problems.

Much focus has been placed on achieving greater individual flexibility in work schedules. Such flexibility no doubt has many benefits, but the down side of time-flexibility is that it moves us towards the privatization of personal schedules and ever further from coordinated social time. Privatized personal schedules generate individual convenience but make unplanned social time increasingly difficult to find: it sets up the “bowling alone” problem. Greater synchronization with the standard work week may ultimately be a more successful solution. For example, the European norm of long summer holidays – “vacation en masse” – likely does more to limit the rat race than individual work-day flexibility. Indeed, evidence suggests that work-time flexibility leads to working longer, rather than shorter, hours (Alesina et al 2005; Barley et al 2004). Relief from time pressure is hard to find on one’s own.

In an era of high unemployment, network properties of time and the difficulty of unplugging from the rat race are important social issues. More research is needed to fully understand the pleasures and sorrows of the standard work week.

Table 1. Average Number of Emotions Experienced, by Variable

	Positive Emotions			Negative Emotions			
	Happy	Smile	Enjoy	Worry	Stress	Anger	Sad
Employed							
Mon-Fri	0.89	0.83	0.85	0.31	0.45	0.13	0.14
Weekend	0.92	0.87	0.91	0.23	0.29	0.10	0.12
Difference	4%	4%	7%	-26%	-35%	-27%	-10%
Unemployed							
Mon-Fri	0.82	0.75	0.78	0.49	0.51	0.19	0.28
Weekend	0.84	0.79	0.83	0.42	0.44	0.17	0.26
Difference	3%	5%	6%	-14%	-14%	-12%	-7%
Ratio of Weekend Effects (Unemp / Worker):	74%	122%	84%	54%	39%	43%	75%
Average Ratio		93%			53%		

Source: Gallup Daily Poll, 2009-11.

Table 2. Determinants of Positive Emotions, Negative Emotions, and Social Hours

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Positive Emotions	Positive Emotions	Negative Emotions	Negative Emotions	Social Hours	Social Hours
Unemployed	-0.075*** (0.003)	-0.061*** (0.003)	0.122*** (0.003)	0.101*** (0.003)	0.910*** (0.040)	0.919*** (0.039)
Unemployed x Weekend	0.038*** (0.005)	0.039*** (0.005)	-0.039*** (0.005)	-0.039*** (0.005)	0.888*** (0.072)	0.908*** (0.069)
Worker x Weekend	0.043*** (0.001)	0.043*** (0.001)	-0.071*** (0.001)	-0.071*** (0.001)	2.080*** (0.019)	2.083*** (0.018)
Age		-0.001*** (0.000)		-0.001*** (0.000)		-0.044*** (0.001)
Female		0.007*** (0.001)		0.033*** (0.001)		0.236*** (0.016)
One or more children		-0.010*** (0.001)		0.032*** (0.001)		0.454*** (0.018)
Married		0.026*** (0.001)		-0.023*** (0.001)		0.491*** (0.019)
Monthly Income		0.004*** (0.000)		-0.006*** (0.000)		0.032*** (0.002)
Education						
Less than High School		-0.022*** (0.003)		0.034*** (0.003)		-0.403*** (0.045)
High School Diploma (reference category)						
Some College		0.005*** (0.001)		0.017*** (0.002)		0.042 (0.023)
College Degree		0.006*** (0.001)		0.011*** (0.002)		-0.448*** (0.024)
Post-graduate education		0.003 (0.002)		0.021*** (0.002)		-0.483*** (0.026)
Race / Ethnicity						
White (reference category)						
Black		0.005** (0.002)		-0.062*** (0.002)		0.219*** (0.031)
Asian		0.005** (0.002)		-0.008*** (0.002)		-0.844*** (0.058)
Hispanic		-0.023*** (0.004)		-0.018*** (0.004)		-1.257*** (0.030)
Other		-0.010** (0.003)		0.010** (0.003)		0.202*** (0.045)
Constant	0.856*** (0.001)	0.858*** (0.002)	0.277*** (0.001)	0.326*** (0.003)	4.986*** (0.010)	6.367*** (0.040)
Observations	503,284	503,284	503,284	503,284	333,354	333,354
R-squared	0.011	0.019	0.026	0.045	0.060	0.105

Standard errors in parentheses. Gallup Daily Poll Data, 2009-11.

* p<0.05 ** p<0.01 *** p<0.001

Table 3. Determinants of Time Use: Friends, Family and Housework

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
	Time with Friends	Time with Friends	Time with Family	Time with Family	Household work	Household work
Unemployed	54.8*** (3.3)	36.4*** (3.2)	96.2*** (6.2)	132.1*** (5.4)	57.2*** (3.0)	75.3*** (3.0)
Unemployed x Weekend	18.5*** (4.4)	20.2*** (4.3)	103.2*** (8.4)	96.9*** (7.2)	-1.6 (4.1)	-3.7 (3.9)
Worker x Weekend	36.7*** (1.2)	36.6*** (1.1)	189.2*** (2.2)	187.4*** (1.9)	58.4*** (1.1)	58.7*** (1.1)
Age		-1.7*** (0.0)		-0.2** (0.1)		1.7*** (0.0)
Female		-7.3*** (1.1)		58.1*** (1.9)		42.4*** (1.0)
One or more children		-23.7*** (1.3)		142.1*** (2.2)		16.0*** (1.2)
Married		-49.5*** (1.3)		203.0*** (2.2)		18.5*** (1.2)
Family Income (annual)		1.3*** (0.1)		-0.4 (0.2)		-0.4** (0.1)
Education						
Less than High School		18.4*** (2.1)		-20.7*** (3.5)		-12.6*** (1.9)
High School Diploma (reference category)						
Some College		4.0** (1.5)		-4.6 (2.6)		1.5 (1.4)
College Degree		3.7* (1.7)		-2.4 (2.8)		-0.5 (1.6)
Post-graduate education		3.9 (2.0)		-4.6 (3.4)		-9.3*** (1.9)
Race / Ethnicity						
White (reference category)						
Black		-20.8*** (1.8)		-25.1*** (3.0)		-29.2*** (1.6)
Asian		-4.0 (3.2)		-17.7*** (5.3)		-10.7*** (2.9)
Hispanic		-23.3*** (1.7)		14.2*** (2.9)		-1.0 (1.6)
Other		-3.6 (4.1)		-4.1 (6.9)		-1.7 (3.8)
Constant	33.6*** (0.8)	143.1*** (2.8)	211.9*** (1.6)	1.2 (4.6)	77.6*** (0.8)	-25.1*** (2.5)
Observations	61,684	61,684	61,684	61,684	61,684	61,684
Adjusted R-square	0.022	0.087	0.107	0.349	0.047	0.111

Standard errors in parentheses. American Time Use Data, 2003-11.

* p<0.05 ** p<0.01 *** p<0.001

Table 4. Determinants of Well-being, Including Social Hours (Gallup)

	Model 13	Model 14	Model 15	Model 16
	Positive	Positive	Negative	Negative
	Emotions	Emotions	Emotions	Emotions
Unemployed	-0.062*** (0.003)	-0.080*** (0.003)	0.107*** (0.003)	0.118*** (0.003)
Unemployed x Weekend	0.040*** (0.006)	0.025*** (0.005)	-0.036*** (0.006)	-0.026*** (0.006)
Worker x Weekend	0.044*** (0.001)	0.010*** (0.001)	-0.072*** (0.001)	-0.050*** (0.001)
Social Hours		0.016*** (0.000)		-0.011*** (0.000)
Demographic Controls	Yes	Yes	Yes	Yes
Constant	0.858*** (0.003)	0.756*** (0.003)	0.323*** (0.003)	0.389*** (0.003)
Observations	333,354	333,354	333,354	333,354
R-squared	0.020	0.065	0.047	0.063

Standard errors in parentheses. Gallup Daily Poll Data, 2009-11.

* p<0.05 ** p<0.01 *** p<0.001

Appendix A. Descriptive Statistics and Weekend Randomization Tests

1. Gallup Daily Poll

Variable	Full Sample	Monday-Friday	Weekend/Holidays	Difference	t-stat
Emotional well-being					
Average positive emotion	0.86	0.85	0.89	0.04	43.26
Average negative emotion	0.27	0.29	0.22	-0.07	-60.23
Social hours	5.67	5.07	7.04	1.98	109.13
Demographics					
Unemployed	8.6%	8.8%	8.1%	-0.7%	-5.89
Age	42.39	42.35	42.48	0.1	2.59
Female	45.7%	45.7%	45.8%	0.2%	0.92
Race/Ethnicity					
White	73.1%	73.2%	72.9%	-0.3%	-1.66
Black	9.9%	9.8%	9.9%	0.1%	0.74
Hispanic	12.4%	12.4%	12.4%	0.0%	0.19
Asian	1.8%	1.7%	1.8%	0.1%	1.32
Other	2.9%	2.9%	3.0%	0.1%	1.77
One or more children at home	45.4%	45.5%	45.1%	-0.4%	-2.18
Married	61.4%	61.4%	61.4%	0.0%	0.01
Family income (monthly)	\$5,432	\$5,431	\$5,433	\$1	0.08
Educational Attainment					
Less than high school	7.0%	6.9%	7.1%	0.2%	1.41
High school degree/diploma	25.4%	25.4%	25.6%	0.3%	1.42
Some college	31.0%	31.0%	31.0%	0.0%	-0.08
College degree	20.7%	20.9%	20.4%	-0.4%	-3.07
Post-graduate education	15.9%	15.9%	15.9%	0.0%	0.14
Sample Size	503,284	348,452	154,832		

Data: Gallup Daily Poll, 2009-11.

2. American Time Use Survey

Variable	Full Sample	Monday-Friday	Weekends / Holidays	Difference	t-stat
Time Use (Minutes per Day)					
With Family	313	218	402	183	84.56
With Friends	56	37	73	35	30.91
Household Labor	109	81	136	54	51.38
Demographics					
Unemployed	6.7%	6.7%	6.6%	-0.1%	-0.53
Age	41.3	41.4	41.1	-0.3	-2.86
Female	51.6%	51.3%	51.9%	0.7%	1.67
Race/Ethnicity					
White	83.2%	83.3%	83.1%	-0.2%	-0.76
Black	11.7%	11.6%	11.8%	0.1%	0.53
Hispanic	12.9%	12.4%	13.4%	1.0%	3.73
Asian	3.2%	3.2%	3.2%	0.0%	0.02
Other	1.9%	1.8%	1.9%	0.1%	0.81
One or more children at home	55.3%	54.8%	55.8%	1.0%	2.41
Married	58.7%	58.7%	58.8%	0.2%	0.41
Family Income (annual)	\$65,276	\$65,169	\$65,377	\$208	0.55
Educational Attainment					
Less than high school	11.8%	11.6%	12.1%	0.5%	1.9
High school degree/diploma	24.6%	24.8%	24.5%	-0.2%	-0.72
Some college	28.7%	28.7%	28.8%	0.1%	0.32
College degree	22.1%	22.2%	22.1%	-0.1%	-0.31
Post-graduate education	12.7%	12.8%	12.5%	-0.3%	-0.95
Sample Size	61,684	29,884	31,800		

Data: American Time Use Survey, 2003-11.

References

- Alesina, Alberto, Edward Glaeser, and Bruce Sacerdote. 2005. "Work and Leisure in the U.S. and Europe: Why So Different?" *NBER Macroeconomics Annual*. Vol. 20:1-100.
- Barley, Stephen, James Evans, and Gideon Kunda. 2004. "Beach Time, Bridge Time and Billable Hours: The Temporal Structure of Technical Contracting." *Administrative Science Quarterly*. Vol. 49: 1-38
- Bianchi, S. M., Robinson, J. P., & Milkie, M. A. (2007). *Changing Rhythms of American Family Life*. Russell Sage Foundation Publications.
- Bittman, Michael. 2005. "Sunday Working and Family Time." *Labour and Industry*. Vol. 16(1):59-83.
- Blundell, Richard, and Thomas MaCurdy. 1999. "Labor Supply: A Review of Alternative Approaches," in Orley Ashenfelter and David Card, eds., *Handbook of Labor Economics, Volume 3*, North-Holland.
- Brinton, Mary, and Victor Nee (eds). 1998. *The New Institutionalism in Sociology*. New York: Russell Sage.
- de Botton, Alain. 2009. *The Pleasures and Sorrows of Work*. New York: Pantheon Books.
- Burgard, Sarah A., Jennie E. Brand, and James S. House. 2007. "Toward a Better Estimation of the Effect of Job Loss on Health." *Journal of Health and Social Behavior* 48:369-384.
- Campbell, Donald, and Julian Stanley. 1963. *Experimental and Quasi-Experimental Designs for Research*. Wadsworth Publishing.
- Collins, Randall. 2004. *Interaction Ritual Chains*. Princeton: Princeton University Press.
- Diener, Ed. 1994. "Assessing Subjective Well-Being: Progress and Opportunities." *Social Indicators Research*. Vol. 31: 103-157.
- Diener, Ed, Daniel Kahneman, William Tov, and Raksha Arora. 2010. "Income's Association with Judgments of Life Versus Feeling." Pp. 3– 15 in *International Differences in Well-Being*, edited by E. Diener, J. F. Helliwell, and D. Kahneman. New York: Oxford University Press.
- DiMaggio, Paul, and Joseph Cohen. 2005. "Information Inequality and Network Externalities: A Comparative Study of the Diffusion of Television and the Internet." *The Economic Sociology of Capitalism*, edited by Victor Nee and Richard Swedberg. Princeton: Princeton University Press.

- DiMaggio, Paul and Filiz Garip. 2011. "How Network Externalities Can Exacerbate Intergroup Inequality." *American Journal of Sociology*. Vol. 116(6):1887-1933.
- DiPrete, Thomas, Andrew Gelman, Tyler McCormick, Julian Teitler, and Tien Zheng. 2011. "Segregation in Social Networks Based on Acquaintanceship and Trust." *American Journal of Sociology*. Vol. 116(4):1234-83.
- Dooley, David, Joann Prause, and Kathleen A Ham-Rowbottom. 2000. "Underemployment and Depression: Longitudinal Relationships." *Journal of Health and Social Behavior*. Vol. 41: 421-36.
- Foss, Clive. 2004. "Stalin's Topsy-Turvy Work Week." *History Today*. September: 46-7.
- Fowler, James, and Nicholas Christakis. 2008. "Dynamic Spread of Happiness in a Large Social Network: Longitudinal Analysis Over 20 Years in the Framingham Heart Study." *British Medical Journal*. Vol. 337: a2338.
- Gelman, Andrew, and Hal Stern. 2006. "The Difference between 'Significant' and 'Not Significant' is not Itself Statistically Significant." *The American Statistician*. Vol. 60 (4): 328-331.
- Hochschild, A. R. 1997. *The Time Bind: When work becomes home and home becomes work*. Metropolitan books.
- Hornstein, Andreas. 2002. "Towards a Theory of Capacity Utilization: Shiftwork and the Workweek of Capital." *Federal Reserve Bank of Richmond Economic Quarterly*. Vol. 88(2):65-86.
- Ingram, Paul, and Karen Clay. 2000. "The Choice-Within-Constraints New Institutionalism and Implications for Sociology." *Annual Review of Sociology*. Vol. 26: 525-46.
- Jacobs, Jerry, Gerson, Kathleen. 2004. *The Time Divide: Work, family, and gender inequality*. Harvard University Press.
- Jahoda, Marie. 1982. *Employment and Unemployment: A Social-Psychological Analysis*. London: Cambridge University Press.
- Jevons, Stanley. 1890. *Money and the Mechanism of Exchange*. New York, D. Appleton and Company.
- Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. Farrar, Strauss and Giroux: New York.

- Kahneman, Daniel, Alan Krueger, David Schkade, Norbert Schwarz, Arthur Stone. 2004. "A Survey Method for Characterizing Daily Life Experience: The Day Reconstruction Method." *Science*. Vol. 306(5702):1776-80.
- Keane, Michael. 2011. "Labor Supply and Taxes: A Survey." *Journal of Economic Literature*. Vol. 49:4: 961-1075.
- Krueger, Alan, and Andreas Mueller. 2012. "The Lot of the Unemployed: A Time Use Perspective." *Journal of the European Economic Association*. Vol. 10(4): 765-794.
- Krueger, Alan and Bruce Meyer. 2002. "Labor Supply Effects of Social Insurance." In Alan Auerbach and Martin Feldstein (editors), *Handbook of Public Economics*, Vol 4. North-Holland: Amsterdam.
- Leclerc, France, Bernd Schmitt, and Laurette Dube (1995), "Waiting Time and Decision Making: Is Time like Money?" *Journal of Consumer Research*. Vol. 22 (June), 110-19.
- Lee, David, and Thomas Lemieux. 2010. "Regression Discontinuity Designs in Economics." *Journal of Economic Literature*. Vol. 48 (June):281-355.
- Lyness, Karen, Janet Gornick, Pamela Stone, and Angela Grottoa. 2012. "It's All about Control: Worker Control over Schedule and Hours in Cross-National Context." *American Sociological Review*. Vol. 77(6):1023-1049.
- Newman, Katherine S. 1999. *Falling from Grace: Downward Mobility in the Age of Affluence*. University of California Press: Berkeley, CA.
- Nordenmark, Mikael. 1999. "The Concentration of Unemployment within Families and Social Networks: A Question of Attitudes or Structural Factors?" *European Sociological Review*. Vol. 15(1):49-59.
- Paternoster, Raymond, Robert Brame, Paul Mazerolle, and Alex Piquero. 1998. "Using the Correct Statistical Test for the Equality of Regression Coefficients." *Criminology*. Vol. 36(4):859-66.
- Presser, Harriet B. 2000. "Nonstandard Work Schedules and Marital Instability." *Journal of Marriage and the Family*. Vol. 62 (1): 93-110.
- Putnam, Robert. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Robinson, John P. and Geoffrey Godbey. 2000. *Time for Life: The Surprising Ways Americans Use Their Time*. Second Edition. University Park, PA: Pennsylvania State University.

- Rybczynski, Witold. 1991. *Waiting for the Weekend*. Penguin.
- Sacerdote, Bruce. 2001. "Peer Effects with Random Assignment: Results for Dartmouth Roommates." *Quarterly Journal of Economics*. Vol. 116(2): 681-704.
- Schwartz, Barry. 2004. *The Paradox of Choice: Why More is Less*. New York: Harper & Collins.
- Schor, Juliet B. 1991. *The Overworked American*. New York: Basic Books.
- Shapiro, Carl, and Hal Varian. 1999. *Information Rules: A Strategic Guide to the Network Economy*. Boston: Harvard Business School Press.
- Strazdins, Lyndall, Mark S. Clements, Rosemary J. Korda, Dorothy H. Broom, and Rennie M. D'Souza. 2006. "Unsociable Work? Nonstandard Work Schedule, Family Relationships, and Children's Well-being." *Journal of Marriage and Family*. Vol. 68 (2): 394-410.
- Verbakel, Ellen and Thomas DiPrete. 2008. "The Value of Non-Work Time in Cross-National Quality of Life Comparisons: The Case of the United States vs. The Netherlands." *Social Forces*. Vol. 87(2): 679-712.
- White, Lynn, and Bruce Keith. 1990. "The Effect of Shift Work on the Quality and Stability of Marital Relations." *Journal of Marriage and Family*. Vol. 52 (2): 453-462.
- Williams, Joan. 2010. *Re-Shaping the Work Family Debate: Why Men and Class Matter*. Cambridge: Harvard University Press.
- Winship, Christopher. 2009. "Time and Scheduling." Pp 499-520 in Hedström, Peter, and Peter Bearman (eds). *Oxford Handbook of Analytical Sociology*. Oxford: Oxford University Press.
- Young, Cristobal. 2012. "Losing a Job: The Non-Pecuniary Cost of Unemployment in the United States." *Social Forces*. Vol. 91 (2): 609-634.
- Zerubavel, Eviatar. 1981. *Hidden Rhythms: Schedules and Calendars in Social Life*. Berkeley: University of California Press.
- Zerubavel, Eviatar. 1985. *The Seven Day Circle: The History and Meaning of the Week*. Chicago: University of Chicago Press.