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Get a Taste of Your Leisure Time: The Relationship Between Leisure Thoughts, Pleasant Anticipation, and Work Engagement

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Abstract

During the working day, employees do not only think of their work but also occasionally of their upcoming leisure time. Accordingly, we introduce two constructs, namely thoughts of leisure time (ToLT) and thoughts of a planned leisure activity (ToPLA). We assumed that employees report more ToLT/ToPLA at the beginning and the end of the working day. We further hypothesized that employees with higher pleasant anticipation of a planned leisure activity generate more ToPLA. As leisure thoughts distract attention from work, we expected a negative relationship between ToLT/ToPLA and work engagement within one hour and across the working day. Regarding the subsequent hour, we assumed that when the leisure plan is positive/negative, the relationship between ToPLA and work engagement is positive/negative. We conducted an hourly online-survey across one working day ($N = 89$ employees, 438 measurement points). Our results revealed the expected time trend for ToLT/ToPLA and a positive relationship between pleasant anticipation and ToPLA. We further found negative relationships between ToPLA and work engagement (within one hour) and between ToLT and work engagement (across the day). Contrary to our expectations, for positive leisure plans, the relationship between ToPLA and work engagement in the subsequent hour was negative.

Keywords: leisure thoughts; pleasant anticipation; leisure time; work engagement; hourly measurement

Get a Taste of Your Leisure Time: The Relationship Between Leisure Thoughts, Pleasant Anticipation, and Work Engagement

During their leisure time, many employees cannot detach from their work and still report work-related thoughts (e.g. Flaxman et al., 2018; Querstret, Cropley, & Fife-Schaw, 2017; Weigelt, Syrek, Schmitt, & Urbach, 2019). For instance, employees think of unfinished tasks (Weigelt et al., 2019) and negative interactions with customers (Wang et al., 2013). Furthermore, negative social events at work spill over into leisure time and increase employees' negative affect as employees ruminate about these work events (Volmer, 2015; Volmer, Binnewies, Sonnentag, & Niessen, 2012). Thus, employees think of their work during their leisure time. Flipping the coin, we suggest that employees also think of their leisure time (e.g. of some planned leisure activity) during their working day. We refer to such thoughts as *leisure thoughts*.

Leisure thoughts can be described as off-task thoughts (Beal, Weiss, Barros, & MacDermid, 2005; Gardner, Dunham, Cummings, & Pierce, 1989; Kanfer & Ackerman, 1989), as employees are usually encouraged to think of their work (i.e., on-task thoughts) and not of their leisure time (i.e., off-task thoughts). Off-task thoughts are important for maintaining behaviour (e.g. goal selection, making plans) by keeping higher-order goals and upcoming future events in mind (Atance & O'Neill, 2001; Marchetti, Koster, Klinger, & Alloy, 2016; Martin & Tesser, 1996; Mason & Reinholtz, 2015; Szpunar, 2010). Although research has shown that one content of off-task thoughts is leisure time (Barsics, van der Linden, & D'Argembeau, 2016; D'Argembeau, Renaud, & van der Linden, 2011), leisure thoughts themselves have received little attention. Past research on the consequences of off-task thoughts did not differentiate between leisure thoughts and other types of off-task thoughts (e.g. Dimitrova, van Dyck, van Hooft, & Groenewegen, 2015; Kanfer & Ackerman, 1989) and revealed that off-task thoughts impair task performance (for a meta-analysis see Randall, Oswald, & Beier, 2014). Contrary to this stream of research, Dane (2018) proposed positive consequences of off-task thoughts on employees' task performance if they remind employees of future goals. Yet the question remains as to

whether leisure thoughts have positive or negative consequences for employees' work engagement. We focus on work engagement as work engagement is both, a subjective motivational state (Bakker, Demerouti, & Sanz-Vergel, 2014) and an antecedent to objective performance (Hakanen, Schaufeli, & Ahola, 2008; Salanova, Schaufeli, Martinez, & Breso, 2010). More specifically, work engagement is a positive motivational reaction (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009) which includes the feeling of vigor, dedication, and absorption concerning one's work (Schaufeli & Bakker, 2004).

In the present study, we address three topics and contribute to the literature in several ways. First, we introduce the construct leisure thoughts and examine their occurrence over the working day. We refer to construal level theory (Trope & Liberman, 2010; Wiesenfeld, Reyt, Brockner, & Trope, 2017) and assume that employees generate more leisure thoughts at the beginning and at the end of the working day because work and leisure time are more proximate. As we investigate the time trends of different types of thoughts (leisure thoughts, on-task thoughts, thoughts of other things), we extend the research on thoughts at work by adding a temporal perspective, enabling us to understand whether employees think of their work from the beginning to the end of their working day to the same degree at every hour or whether there is a smooth transition from work to leisure time and vice versa. Second, we posit that employees differ in their feelings of excitement and joy due to an upcoming planned leisure activity. We refer to this unique experience as *pleasant anticipation* and hypothesize that employees with higher pleasant anticipation think more frequently of a planned leisure activity. Since research on pleasant anticipation has so far been limited to special events like Christmas (Syrek, Weigelt, Kühnel, & de Bloom, 2018) or holidays (Nawijn, de Bloom, & Geurts, 2013), we shed light on pleasant anticipation of more usual events like daily leisure time. Third, we posit that leisure thoughts have both positive and negative consequences for work engagement. On the one hand, as leisure thoughts might distract employees from their current tasks, we assume that the

frequency of leisure thoughts is negatively related to work engagement within one hour and across the working day. On the other hand, we build on conservation of resources (COR) theory (Hobfoll, 1989; Hobfoll, Halbesleben, Neveu, & Westman, 2018) and argue that thoughts of a planned leisure activity either indicate an upcoming resource gain or an upcoming resource loss. We assume that when *leisure plan valence* is positive, thoughts of a planned leisure activity are associated with higher work engagement. In contrast, we suppose that these thoughts are negatively related to work engagement, when leisure plan valence is negative. As leisure thoughts may initially distract employees from the task at hand, we assume that these relationships emerge for work engagement in the subsequent hour. With our research, we aim to ascertain whether an anticipated resource gain/loss in the future relates to present work engagement. This contributes to the research on leisure plans (Dumas & Perry-Smith, 2018) and, in a broader sense, to the research on recovery (e.g. Sonnentag, 2018; Sonnentag, Venz, & Casper, 2017), as we assume that the mere anticipation of leisure activities may be important for work engagement. Our research model is presented in Figure 1.

Definition of Leisure Time and Leisure Thoughts

To understand the concept of leisure thoughts, we first propose a short definition of *leisure time*. In general, leisure time refers to time free from work with no obligations, which employees can spend as they choose (Parker & Smith, 1976; Thierry & Janson, 1998). However, it is difficult to define leisure time (Geurts & Demerouti, 2003; Kabanoff, 1980), as "the judgement where work leaves off and leisure begins is usually a subjective one" (Parker & Smith, 1976, p. 41). For instance, some employees regard cooking in their non-work time as an obligatory household activity, while other employees enjoy cooking. Thus, employees have their subjective definitions of leisure time. We therefore use a broad definition of leisure thoughts and leisure time. More precisely, we define leisure time as a non-working time before and after employees' regular working hours. During this leisure time, employees engage in various activities, all of which are

potentially leisure activities, and each employee has his or her opinion regarding which activities

are leisure activities (Newman, Tay, & Diener, 2014). Starting with this broad definition, we

developed the construct of leisure thoughts.

We define leisure thoughts as a special type of future-oriented off-task thoughts[1]

occurring at work and not related to the task at hand. We further distinguish between two

different types of leisure thoughts. We refer to the first type as *Thoughts of Leisure Time* (ToLT)

because they include all kinds of thoughts employees have of their leisure time. More

specifically, we define ToLT as future-oriented thoughts of today´s leisure time. Some examples

for these thoughts are "What can I do to recover in the evening?", "I do not know what to cook

for dinner", and "I will be very tired after work". These examples show that ToLT are not

specific about an activity and may be very *general* in their content. The content of ToLT may

include many different themes and/or leisure activities, which vary across the working day.

We term the second type of leisure thoughts *Thoughts of a Planned Leisure Activity*

(ToPLA) as they refer specifically to a planned leisure activity. ToPLA are future-oriented

thoughts of a specific plan that employees have in mind for their leisure time. These plans

include specific leisure activities, for instance, meeting with friends, physical activities, or a

doctor's appointment. Corresponding ToPLA for these examples may be "Today, I will meet up

with friends", "I will go for a walk in my leisure time", and "I have a doctor's appointment after

work". However, the content of ToPLA over the working day could be diverse and they have in

common that they refer to the same planned leisure activity. In contrast to ToLT, the content of

ToPLA refers to only one leisure activity as long as the plan for leisure activity does not change.

Furthermore, ToPLA are a subtype of ToLT, and when employees have more than one leisure

plan, ToPLA for the first plan, ToPLA for the second plan, and so on may exist.

Frequency of Leisure Thoughts During the Working Day

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[1] We use the term off-task thoughts. However, leisure thoughts can also be described as one special type of mind wandering, spontaneous thoughts or daydreaming (for an overview see Marchetti et al., 2016).

The first aim of this study is to investigate the frequency of leisure thoughts. Support for the existence of ToLT and ToPLA comes from research on future-oriented thoughts (for a review see Aspinwall, 2005). In general, most (35%) future-oriented thoughts are about leisure time (D'Argembeau, 2018) and 25% occur at work (Barsics et al., 2016). In more detail, individuals report on average 59 future-oriented thoughts per day, resulting in about one thought every 16 minutes (D'Argembeau et al., 2011). These off-task thoughts may be triggered for different reasons (e.g. unattained goals, negative mood; Mrazek et al., 2011; Smallwood & Schooler, 2015; Watkins, 2008), yet research did not address the question when more or less off-task thoughts occur during an employee's working day (Beal et al., 2005; Merlo, Shaughnessy, & Weiss, 2018). Thus, it remains unclear whether off-task thoughts might follow a systematic time trend.

Building on construal level theory (Trope & Liberman, 2010; Wiesenfeld et al., 2017), we assume that both ToLT and ToPLA will occur more often at the beginning and at the end of the working day. Construal level theory implies that psychological distance (temporal, spatial, social, hypothetical) changes human thoughts and perceptions (Trope & Liberman, 2010). Psychological distance describes the subjective feeling that something (e.g. objects, events) is closer or farther away from the self (Trope & Liberman, 2010). According to Liberman and Trope (1998), temporal distance indicates that when a future event gets closer in time, mental representations change from more abstract levels of construal (prototypical, general, overarching goals) to more concrete levels of construal (specific, detailed, focus on observable behaviour).

At the beginning of the working day, when the temporal distance from employees' past leisure time (e.g. having breakfast) is very short, construal level theory predicts that employees have detailed representations of their leisure time (Trope & Liberman, 2010). Detailed representations with a great deal of contextual information are more likely to be retrieved from memory (Chu, Handley, & Cooper, 2003; Howard & Kahana, 1999). For instance, employees

may have talked with their spouse about dinner or who will do the shopping just before leaving for work. Thus, there are more cues at the beginning of the working day to trigger employees' thoughts of their upcoming leisure time (ToLT/ToPLA).

At the end of the working day, when the temporal distance to employees' upcoming leisure time (e.g. doing the shopping) is shorter, employees have more detailed representations of their upcoming leisure time as indicated by construal level theory (Trope & Liberman, 2010; Wiesenfeld et al., 2017). Again, ToLT/ToPLA are more likely to be retrieved from memory due to the more detailed mental representation (Chu et al., 2003; Howard & Kahana, 1999). This concurs with research on spontaneous thoughts, which serve as a reminder of upcoming events (Marchetti et al., 2016). Furthermore, thoughts of an upcoming event occur more frequently when this event draws closer in time (D'Argembeau et al., 2011). In sum, we assume a U-shaped time trend for the frequency of ToLT/ToPLA during the working day.

Hypothesis 1: There is a U-shaped time trend for the frequency of ToLT/ToPLA during the working day (within-person).

Positive Relationship between Pleasant Anticipation and the Frequency of ToPLA

As explained above, we argue that time of the day may explain why employees generate more ToLT/ToPLA at the beginning and at the end of the working day. Also, we suggest that the content of the leisure thoughts matters. Thus, we take a closer look at ToPLA, as they refer to a planned leisure activity, which can be described in more detail. We suppose that high pleasant anticipation of the planned leisure activity is positively related to the frequency of ToPLA.

We define pleasant anticipation as a positive affective reaction (e.g. joy, excitement) which individuals experience when looking forward to a positive future event. This is in line with Baumgartner, Pieters, and Rik (2008) who stated: "[…] joy about a future event is called 'Vorfreude' in German and 'voorpret' in Dutch (literally pre-joy), and it may be translated as pleasant anticipation" (p. 695). Although the affective reactions themselves (e.g. joy, excitement)

may be classified within existing models of affect (e.g. circumplex model; Russell, 1980; Seo, Barrett, & Bartunek, 2004), pleasant anticipation is more than a mere affective reaction. First, pleasant anticipation always refers to a *positive* future event and cannot be experienced without a positive "target" event (whereas individuals may feel happy without knowing why). Second, pleasant anticipation is only an experience about positive *future* events (unlike happiness which may also refer to past events). Third, the occurrence of the positive future event must be *certain* (compared to hope, which indicates uncertainty concerning a future event; Roseman, 1996). Finally, pleasant anticipation combines affective reactions such as excitement (because individuals cannot wait for the future event) and happiness (because the future event is positive). Excitement and happiness are only examples of possible affective reactions, as different affective reactions are used to describe the anticipation of positive future events. For instance, Kong, Tuncel, and Parks (2011) refer to happiness, Baumgartner and colleagues (2008) refer to joy, and sometimes no distinct affective reaction is mentioned (e.g. Graham, Thomson, Nakamura, Brandt, & Siegel, 2019; Sonnentag, Mojza, Binnewies, & Scholl, 2008).

As noted above, one antecedent for pleasant anticipation is that the future event (e.g. the planned leisure activity) has a positive valence. This valence rating is a general evaluation of whether the future event is expected to be positive or negative and not an affective reaction. As information about the affective reaction in the present is missing, a positive valence rating is not sufficient to experience pleasant anticipation; however, it is a necessary precondition. For instance, we assume the valence of the payment of one's monthly salary may be very positive, yet only a few employees experience pleasant anticipation. We think that they will not normally feel excited because of their payday or think often about it, although the valence is very positive. In contrast, we suggest that when pleasant anticipation of a future event is high, employees think more often about this event (e.g. their planned leisure activity).

According to construal level theory, not only the temporal distance but also the

hypotheticality changes our mental representations (Trope & Liberman, 2010; Wiesenfeld et al., 2017). Hypotheticality refers to the likelihood of occurrence and the desirability of an event. If hypotheticality decreases, mental representations will change from a general level of construal to a concrete level of construal (Wiesenfeld et al., 2017). Therefore, we posit that when employees experience high pleasant anticipation of their planned leisure activity, the content of their ToPLA will be more concrete. As a result, the frequency of ToPLA will increase, as the planned leisure activity is more likely to be retrieved from memory (Chu et al., 2003; Howard & Kahana, 1999).

This is in line with research by Klinger (2013), who showed that higher valued goals evoke more off-task thoughts about these goals. Furthermore, the frequency of future-oriented thoughts increases if their content is relevant to the individual (Newby-Clark & Ross, 2003; Szpunar, 2010). We assume that high pleasant anticipation indicates that the leisure activity is desirable and relevant to employees. For example, pleasant anticipation may be higher for meeting up with friends than for watching TV at home. Hence, there will be more ToPLA for meeting friends than watching TV. In sum, we suggest that employees experiencing more pleasant anticipation of a planned leisure activity report more ToPLA.

Hypothesis 2: There is a positive relationship between pleasant anticipation of a planned leisure activity and the frequency of ToPLA across the working day (between-person).

Negative Relationship between Leisure Thoughts and Work Engagement

In line with existing research on the negative consequences of off-task thoughts for task performance (e.g. Beal et al., 2005; Kanfer & Ackerman, 1989; Randall et al., 2014), we assume that ToLT/ToPLA also impair work-related outcomes (e.g. training performance, work engagement). For instance, Wallace, Edwards, Shull, and Finch (2009) provided evidence that low task focus (i.e., more off-task thoughts) was related to poor performance both in a laboratory and in a field study.

One explanation for the negative consequences of ToLT/ToPLA on performance and work

engagement may be that leisure thoughts are interruptions hindering employees from performing

well (Baethge & Rigotti, 2013). When employees think of their leisure time, their attention is

distracted from the task at hand and the focus of attention changes (Beal et al., 2005; Merlo et

al., 2018). As highly engaged employees must be fully concentrated (Bakker, Schaufeli, Leiter,

& Taris, 2008), we expect that work engagement is very sensitive to changes in employees'

focus of attention. We therefore posit that employees report lower work engagement within

hours of high frequency of ToLT/ToPLA.

Furthermore, the frequency of ToLT/ToPLA may not only differ within employees

between different hours but also between different employees across the working day. For

instance, an employee might only generate a few and brief ToLT/ToPLA every hour. However,

this employee was often distracted from his/her work across the working day, which may result

in low overall work engagement. Thus, we expect that employees with a great deal of

ToLT/ToPLA across the working day will report lower work engagement than employees with

less ToLT/ToPLA.

Hypothesis 3a: There is a negative relationship between the frequency of ToLT/ToPLA and

work engagement within one hour (concurrently within-person).

Hypothesis 3b: There is a negative relationship between the frequency of ToLT/ToPLA and

work engagement across the working day (between-person).

The Moderating Role of Leisure Plan Valence

Contrary to most research on off-task thoughts (Beal et al., 2005; Kanfer & Ackerman, 1989;

Randall et al., 2014; Wallace et al., 2009), we further posit that ToPLA may have positive

consequences for employees' work engagement. We draw on COR theory (Hobfoll, 1989;

Hobfoll et al., 2018) and suggest that when the planned leisure activity is *positive*, ToPLA

indicate a higher upcoming resource gain and therefore are positively related to employees' work

engagement. In contrast, we also assume that when the planned leisure activity is *negative,*

ToPLA indicate a higher upcoming resource loss and will be negatively related to employees'

work engagement.

We define resources as anything having a positive value for the individual, linked to

resilience, and necessary for controlling the environment and attaining one's goals (Halbesleben,

Neveu, Paustian-Underdahl, & Westman, 2014; Hobfoll, Johnson, Ennis, & Jackson, 2003).

Leisure time is a well-known opportunity for employees to gain resources (e.g. Oerlemans,

Bakker, & Demerouti, 2014; Rook & Zijlstra, 2006; Sonnentag, 2001), as engaging in positive

leisure activities offers them the opportunity to recover (i.e., foster/maintain resilience),

experience control over their environment, and/or to achieve private goals. We therefore assume

that a positive leisure plan valence represents an anticipated resource gain. Conversely, other

leisure activities (e.g. cleaning, administrative tasks) that offer no opportunities to recover, may

impede the experience of control and/or may hinder employees from reaching their goals. Thus,

we suggest that a negative leisure plan valence indicates an upcoming resource loss.

Anticipated resource gains/losses may relate to employees' work engagement, as not only

the actual situation but also the anticipation of an upcoming event is important for resource

management (Aspinwall & Taylor, 1997). In general, employees need resources to maintain their

work engagement (Bakker & Demerouti, 2017; Bakker et al., 2014) and COR theory explains

employees' resource management at work (Hobfoll et al., 2018). Over the course of a working

day, employees' resources decrease, as they have to deal with a variety of mental and/or physical

tasks (Meijman & Mulder, 1998; Trougakos & Hideg, 2009). Before their resources fall below a

certain resource limit, employees enter a defensive mode, stop investing resources and try to

conserve their remaining resources (Hobfoll et al., 2018). We expect that when employees

anticipate a higher resource gain/loss, they may enter this state later/earlier, as they consider the

upcoming resource gain/loss in their current resource management. We assume that when

employees anticipate a higher resource gain, they may become more engaged, as they can invest

more resources until they reach their resource limit. Conversely, when employees anticipate a higher resource loss, they may have a lower resource limit and can invest fewer resources to become engaged. This concurs to COR theory, which states that the threat of a resource loss (i.e. an anticipated resource loss) has consequences for individuals similar to those of an actual resource loss (Gorgievski & Hobfoll, 2008; Hobfoll, 2001). For instance, Niessen and Jimmieson (2016) showed that an anticipated resource loss impairs work performance. In the same vein, we posit that an anticipated resource gain/loss also relates to employees' work engagement under certain conditions.

We hypothesize that ToPLA play an important role in this resource management process, as ToPLA remind employees of either an anticipated resource gain or an anticipated resource loss. For instance, when employees think more frequently of a positive/negative planned leisure activity, this anticipated resource gain/loss will be experienced as more concrete. Consequently, we assume that the anticipated resource gain/loss has a higher impact on the resource management process. To take both positive and negative leisure plans into account, we suggest that leisure plan valence moderates the relationship between ToPLA and work engagement such that the relationship is positive for a positive leisure plan valence (higher anticipated resource gain) and negative for a negative valence (higher anticipated resource loss). However, we expect that the effects on work engagement do not manifest immediately, as resource gains take time to occur (Hobfoll et al., 2018) and employees may smoothly reduce their work engagement when they reach their resource limit. Moreover, as we have argued that leisure thoughts are a type of off-task thoughts, ToPLA should be negatively related to work engagement within the same hour independently of the leisure plan valence. Therefore, we focus on the relationship between ToPLA and work engagement *in the subsequent hour*.

Hypothesis 4: Leisure plan valence moderates the relationship between ToPLA within one hour and work engagement in the subsequent hour, such that the relationship is positive when leisure

plan valence is positive and negative when leisure plan valence is negative.

Method

We conducted an online-survey among employees in Germany. Participants were recruited with printed flyers distributed in a local town (e.g. at doctors' offices) and digital flyers posted on several social media platforms and sent to personal contacts. Two students also contributed to the data collection as part of their thesis work (for the use of student-recruited samples see Wheeler, Shanine, Leon, & Whitman, 2014). Participation was voluntary, and we offered employees detailed feedback on their work engagement during the working day combined with information about how to stay engaged. Participants had to be over 18 and work about eight hours between 6:00 a.m. to 6:00 p.m. (i.e., work full-time on the day of the participation, no shift workers).

We chose a design with hourly measurement points across one working day (cf. Syrek, Kühnel, Vahle-Hinz, & de Bloom, 2018). Either Tuesday or Wednesday was selected as the day of the survey, as research showed that for other days employees report special characteristics such as lower mood on Mondays (e.g. Areni, 2008; Larsen & Kasimatis, 1990) or less workplace incivility on Fridays (Nicholson & Griffin, 2017). We moreover assumed that more specific leisure activities exist for the middle of the week and that planned leisure activities on Fridays differ from plans on other days as they may include the weekend.

All questionnaires described below were part of one online-survey consisting of a pre-survey, thirteen hourly questionnaires, and one questionnaire in the next morning. In the pre-survey, we assessed the demographic variables, and participants were instructed to choose a typical working day for their participation (Tuesday or Wednesday within the next seven weeks). On the chosen day, participants received e-mails with links to short questionnaires every hour from 6:00 a.m. to 6:00 p.m. Each questionnaire was available for ten minutes to keep the time between the hourly questionnaires constant. A total number of 106 participants completed 606 hourly questionnaires ($M = 5.78$, $SD = 3.24$). Regarding the average weekly working time of

38.65 hours (*SD* = 8.51), we expected a maximum number of nine questionnaires per day. This resulted in a total response rate of 67.34%. Although this response rate is in line with those of other studies (e.g. Demerouti & Peeters, 2018), the low response rate could be the result of the restrictive time window for answering the questionnaire. In the next morning, participants received the last questionnaire, which we used to check whether they had engaged in their planned leisure activity.

Participants

Demographic information was available for all but five participants, who did not complete the pre-survey. Participants' average age was 35.11 (*SD* = 13.70, ranging from 18 to 64) and 60% were female. Regarding education, 27 participants had a master's degree, 18 had a bachelor's degree, 23 had completed vocational education, 12 participants had completed higher vocational education and 19 participants were still involved in vocational training. Two participants reported that they had not completed an apprenticeship or other education. Most participants were in a relationship (71.7%) and 16.1% had at least one child. Employees worked in various occupations and business sectors, e.g. public administration (14%), social and health care services (13%), business services (13%), or other services (13%), and in the manufacturing sector (12%). Ten participants were self-employed and 20.8% were in managerial positions.

Measures

We assessed leisure thoughts and work engagement in every hourly questionnaire except for two questionnaires. In the first questionnaire at the beginning of the working day (available until 10:00 a.m.), participants were only asked to describe a specific, planned leisure activity and to report the intensity of pleasant anticipation of that leisure activity as well as leisure plan valence. Furthermore, we did not assess work engagement when participants indicated that they had been on a lunch break.

Pleasant Anticipation and Leisure Plan Valence

The first questionnaire at the beginning of the working day focused on the planned leisure

activity and followed three steps. First, in a few words, participants described a specific, planned

leisure activity for their upcoming leisure time. Examples were "watching TV", "meeting up

with friend", or "playing volleyball". Second, participants rated their pleasant anticipation of the

planned leisure activity on a 5-point Likert scale (1 = *totally disagree;* 5 = *totally agree*). To

assess pleasant anticipation, we referred to our definition and developed a new scale with four

items. These items were: "I cannot wait to put my leisure activity into action", "I am looking

forward to my leisure activity", "I feel pleasant anticipation about my leisure activity", and "I

have a positive feeling while thinking about my leisure activity". Cronbach´s alpha was .92.

Third, we used the self-assessment manikin (Bradley & Lang, 1994) to measure leisure plan

valence. The instruction read "Please choose one of the following pictures which best describes

your leisure activity". As the self-assessment manikin (Bradley & Lang, 1994) was initially

devolved as an alternative measurement for the semantical potential, the scale is bipolar.

Participants were asked to select one of seven manikins which ranged from *very negative* (1)

through *neutral* (4) up to *very positive* (7).

Leisure Thoughts

To develop a measure for ToLT/ToPLA, we focused on measurements for on- and off-task

thoughts (Gardner, Dunham, Cummings, & Pierce, 1987; Kanfer, Ackerman, Murtha, Dugdale,

& Nelson, 1994; Wallace & Chen, 2005). Due to our hourly design, we needed a very short

measure. Gardner and colleagues (1987) developed a single-item measurement of both on- and

off-task thoughts which did not show important differences in construct validity compared to a

multiple-item measurement (Gardner, Cummings, Dunham, & Pierce, 1998). We created four

items based on their measurement with additional information in parentheses to make sure that

all participants understood our conceptualization of ToLT/ToPLA. Participants were asked how

frequently they thought of "today´s leisure time (thoughts related to events/activities in your

upcoming leisure time)" (ToLT), and "today´s leisure plan [here the planned leisure activity from the first questionnaire was inserted]" (ToPLA). Moreover, participants indicated how often they thought about their "work (thoughts, which were necessary to get the job done)" (on-task thoughts), and "other things (past events, far-future events, etc.)". The question about "other things" was used to differentiate ToLT and ToPLA from off-task thoughts in general. All items referred to the last hour and participants could answer each item on an abstract rating scale ranging from 1 (*not at all*) to 10 (*all the time*). To make sure that our measurement fitted into our broad definition of leisure thoughts and leisure activities, we conducted interviews with 30 employees from another sample and asked them to classify different leisure activities. The results confirmed our broad definition of leisure time and leisure activities. For instance, all employees agreed that physical activities are leisure activities (100%). However, employees differed in their conceptions of doing the laundry (47%) or running errands (67%) as leisure activities.

Hourly work engagement

We used an adapted version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). Hourly work engagement has previously been assessed with two items each for vigor, dedication, and absorption (Syrek, Kühnel et al., 2018). A sample item was "In the last hour, I felt bursting with energy". As absorption describes a state of being fully concentrated (Bakker et al., 2008) and could be very sensitive to changes in attention (e.g. a change from on-task thoughts to leisure thoughts), we added an additional absorption item from the original scale ("In the last hour, it was difficult to detach myself from my work."). All items were answered on a 5-point Likert scale (1 = *totally disagree;* 5 = *totally agree*). Cronbach´s alpha ranged from .80 to .95.

Results

We used R and the package NLME (Pinheiro & Bates, 2000) to analyse our data. We followed

the procedure by Bliese and Ployhart (2002) for modelling a dynamic time trend for work engagement and the four different thoughts (ToLT, ToPLA, on-task thoughts, and thoughts of other things). To check for within-person effects, predictors on an hourly level were person-mean centered. As we were also interested in between-person effects, we entered the grand-mean centered person-mean (i.e., a person's day-level) into our model. Pseudo R^2 was calculated using a formula proposed by Snijders and Bosker (2012, p. 112) representing the total variance explained compared to the null model. We did not control for work engagement in the previous hour, as we were interested in the relationship between leisure thoughts and hourly levels of work engagement and not in the relationship between leisure thoughts and the change in work engagement from one hour to another (which the results indicate when controlling for previous hour's work engagement). We moreover decided to analyse the different types of thoughts separately, as a high frequency of one type of thoughts (e.g. ToLT) means that there was less time for other types of thoughts (e.g. on-task thoughts).

Descriptive Analyses

We followed common recommendations for the analysis of diary studies and removed 17 from a total of 106 participants who responded to fewer than two hourly questionnaires (Mehl, 2012). Our final sample consisted of 89 participants. Means, standard deviations, and correlations are presented in Table 1. On-task thoughts were the most frequent type of thoughts during the working day ($M = 7.54$, $SD = 1.46$), while the average frequency of all three other types of thoughts was fairly low ($M = 3.51$, $SD = 1.60$). Also, on-task thoughts were positively correlated with work engagement, both at the between-person level ($r = .41$, $p < .001$) and at the within-person level ($r = .36$, $p < .001$). Employees reported mostly positive und joyful leisure activities, which is reflected in the descriptive statistics for pleasant anticipation ($M = 3.97$, $SD = 0.85$) and leisure plan valence ($M = 5.98$, $SD = 1.11$).

Planned Leisure Activities

To further investigate the planned leisure activities, we differentiated between low-effort activities, physical activities, social activities, and household/childcare activities (c.f. Sonnentag, 2001; ten Brummelhuis & Bakker, 2012). Two research assistants classified employees' planned leisure activities (Cohen's kappa = .89). Employees engaged in low-effort activities (32.7%), physical activities (30.8%), social activities (21.1%), and household/childcare activities (15.4%). We used a univariate ANOVA to check for differences in pleasant anticipation and leisure plan valence. The results showed that the type of leisure activity matters for pleasant anticipation, F (3, 47) = 4.32, p = .009, partial η^2 = .22, and leisure plan valence, F (3, 47) = 5.87, p = .002, partial η^2 = .27. Post-hoc tests revealed that pleasant anticipation and leisure plan valence were significantly lower for household/childcare activities than for social, low-effort or physical activities. However, even for household/childcare activities, participants reported experiencing pleasant anticipation (M = 3.06, SD = 1.22). Appendix A shows a list of all planned leisure activities and the associated pleasant anticipation and leisure plan valence.

The questionnaire in the next morning revealed that six employees did not engage in their planned leisure activity, yet, only three employees changed their leisure plan before 5:00 p.m. As the content of ToPLA may also change when the leisure plan changes, we excluded all questionnaires that were filled out after the leisure plan had changed (three hourly questionnaires).

Time Trend for Leisure Thoughts and their Relationship with Pleasant Anticipation

In Hypothesis 1, we assumed a U-shaped time trend for leisure thoughts. Intra-class correlation coefficient (1,1) for all thoughts indicated that it was appropriate to use multilevel modeling (.50 for ToLT, .57 for ToPLA, .30 for on-task thoughts, and .44 for thoughts of other things). We modelled the time trend by adding a linear and quadratic time variable and used polynomic terms to avoid multicollinearity (Bliese & Ployhart, 2002). The results for all four types of thoughts are presented in Table 2. We found a significant quadratic time trend for ToLT (γ = 7.96, SE = 1.57,

$p < .001$) and ToPLA ($\gamma = 8.77$, $SE = 1.57$, $p < .001$). For ToPLA, the linear time trend was also

significant ($\gamma = 5.48$, $SE = 1.63$, $p < .001$). The time trends for all types of thoughts is plotted in

Figure 2 indicating our expected U-shaped time trend for ToLT and ToPLA. Thus, Hypothesis 1

was confirmed.

In Hypothesis 2, we expected that pleasant anticipation is positively related to the

frequency of ToPLA. We found a significant positive relationship between pleasant anticipation

and ToPLA between persons ($\gamma = 1.06$, $SE = 0.41$, $p = .013$; see Table 2). Hence, Hypothesis 2

was supported.

Negative Relationship between Leisure Thoughts and Work Engagement

In Hypotheses 3a und 3b we focused on the relationship between ToLT/ToPLA and work

engagement on the day-level (between-persons) and within one hour (concurrently). Before

entering the predictors, we estimated a null-model (Raudenbush & Bryk, 2002) and added a time

trend for work engagement. The intra-class correlation coefficient for work engagement (1,1)

was .63 and we found a significant negative quadratic time trend ($\gamma = -1.26$, $SE = 0.56$, $p = .025$).

A visual analysis of the scatterplot indicated that work engagement was higher during the middle

of the working day and lower at the beginning and end of the working day. For all further

analyses we used a model with fixed slopes and without autocorrelation or heterogeneity in the

error structures due to the best fit to the data.

The results for ToLT/ToPLA and work engagement are presented in Table 3. For ToLT

we found a significant negative relationship with work engagement between persons ($\gamma = -0.09$,

$SE = 0.04$, $p = .038$), but not within persons ($\gamma = -0.03$, $SE = 0.02$, $p = .186$). For ToPLA the

results did not reveal a significant negative relationship with work engagement between persons

($\gamma = -0.05$, $SE = 0.04$, $p = .184$), but within persons ($\gamma = -0.04$, $SE = 0.02$, $p = .042$). Hence,

Hypothesis 3 was only partly supported. As we added an additional item for absorption, we

repeated our analysis for each of the three sub-dimensions of work engagement. Yet, only for

vigor, the relationships were significant for ToLT between persons (γ = -0.11, SE = 0.04, p = .009), ToPLA within persons (γ = -0.05, SE = 0.02, p = .017), and, additionally and in contrast to Table 3, for ToPLA between persons (γ = -0.08, SE = 0.04, p = .047).[2]

Relationship between ToPLA and Work Engagement for Different Levels of Leisure Plan Valence

In Hypothesis 4, we assumed that the relationship between ToPLA and work engagement in the subsequent hour (lagged) is positive/negative for a positive/negative leisure plan valence[3]. As we had to match two consecutive hours and only included participants who indicated a planned leisure activity, the number of measurement points was small compared to the test of Hypothesis 3a/3b. As recommended, we grand-mean centered the level-2 moderator and used a random slope for ToPLA when testing for cross-level interaction (Aguinis, Gottfredson, & Culpepper, 2013).

Before testing the moderation, we specified a model with ToPLA and leisure plan valence (see Table 4, Model 3). The results indicated that ToPLA was neither significantly negatively related to work engagement in the subsequent hour between persons (γ = -0.08, SE = 0.05, p = .165) nor within persons (γ = -0.04, SE = 0.03, p = .123). However, leisure plan valence was positively related to work engagement (γ = 0.20, SE = 0.10, p = .044). In the next step, we added the interaction between ToPLA and leisure plan valence. The result revealed a significant interaction, γ = -0.06, SE = 0.03, p = .042[4]. To facilitate interpretation, the interaction is depicted in Figure 3. We used the 25th percentile (leisure plan valence = 5.25), the mean (leisure plan valence = 6.00), and the 75th percentile (leisure plan valence = 7.00) for plotting the

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[2] We also tested different models with the other types of thoughts as control variables. In sum, when adding on-task thoughts and one (or more) other types of thoughts, only on-task thoughts were significantly positively related to work engagement (between-person and within-person). In models without on-task thoughts and two or three other types of thoughts no significant relationships between any type of thoughts and work engagement were found.

[3] We thank the editor for the helpful suggestion on additional analyses.

[4] By contrast, pleasant anticipation did not moderate the relationship between ToPLA and work engagement (γ = -0.06, SE = 0.04, p = .090, Pseudo R^2 = .02).

interaction. To analyse the simple slopes, we referred to an online tool presented by Preacher, Curran, and Bauer (2006). Contrary to our prediction, the relationship between ToPLA and work engagement was negative for a positive leisure valence, $b = - 0.10$, $SD = 0.04$, $t = -2.69$, $p = .010$. Regarding a negative leisure plan valence, we could not test the relationship between ToPLA and work engagement, as the 25th percentile of the leisure plan valence was still positive. Yet, the test of the simple slope at the 25th percentile revealed that for employees with a slightly positive leisure plan valence the relationship was non-significant, $b = 0.00$, $SD = 0.04$, $t = 0.10$, $p = .918$[5]. Thus, Hypothesis 4 was rejected. Again, we analysed the data with the sub-dimensions of work engagement. The interaction term was significant for absorption ($\gamma = -0.07$, $SE = 0.03$, $p = .041$), yet not for dedication ($\gamma = -0.06$, $SE = 0.04$, $p = .089$) or vigor ($\gamma = -0.03$, $SE = 0.03$, $p = .445$).[6]

Additional Analysis

Although we assumed that ToPLA distract employees within one hour and the content of ToPLA therefore may not matter, we tested whether leisure plan valence or pleasant anticipation of the planned leisure activity moderates the relationship between ToPLA and work engagement within the same hour. The results showed that the interaction was neither significant for pleasant anticipation ($\gamma = -0.02$, $SE = 0.04$, $p = .60$, Pseudo $R^2 = .06$) nor for leisure plan valence ($\gamma = 0.00$, $SE = 0.03$, $p = .880$, Pseudo $R^2 = .10$).

As both job and personal resources are important for employees' work engagement (Bakker & Demerouti, 2017; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007), we tested our Hypotheses 3a/3b and Hypothesis 4 with different level-2 control variables. For job resources, we controlled for autonomy by including task control and time control each assessed

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[5] Although only eight participants met the criteria for the 10th percentile indicating neutral and negative leisure plan valence ratings (< 5.00), we tested the simple slope, $b = 0.08$, $SD = 0.06$, $t = 1.196$, $p = .234$.
[6] When adding one or more other types of thoughts as control variables, the interaction term remained significant. Independently of the other types of thoughts, on-task thoughts within persons were significantly related to higher work engagement in the subsequent hour.

with three items (Semmer, Zapf, & Dunckel, 1999). For ToLT, the significant between-person relationship with work engagement disappeared (γ = -0.07, SE = 0.05, p = .117, Pseudo R^2 =0.08). For ToPLA, the within-person relationship with work engagement was still significant (γ = -0.04, SE = 0.02, p = .041, Pseudo R^2 = 0.06). The cross-level interaction (Hypothesis 4) changed slightly and became non-significant (γ = -0.07, SE = 0.03, p = .071, Pseudo R^2 = 0.11). Regarding personal resources, we measured employees' self-regulation, which is closely related to general self-efficacy, with five items (Diehl, Semegon, & Schwarzer, 2006). The results showed the same pattern as for job resources: for ToLT, the significant between-person relationship with work engagement disappeared (γ = -0.04, SE = 0.04, p = .408, Pseudo R^2 = 0.12). For ToPLA, the within-person relationship with work engagement was still significant (γ = -0.04, SE = 0.02, p = .043, Pseudo R^2 = 0.12). Again, the cross-level interaction (Hypothesis 4) changed slightly and became non-significant (γ = -0.05, SE = 0.03, p = .090, Pseudo R^2 = 0.18).

We further tested for reverse causation to ascertain whether high work engagement was an antecedent of ToLT/ToPLA in the subsequent hour. We found a non-significant relationship between work engagement and ToLT in the subsequent hour within persons (γ = 0.27, SE = 0.20, p = .193) and a significant negative relationship between persons (γ = -0.66, SE = 0.28, p = .021). Pseudo R^2 was .00. Moreover, work engagement was not significantly related to ToPLA in the subsequent hour neither within persons (γ = 0.22, SE = 0.21, p = .306) nor between persons (γ = -0.37, SE = 0.33, p = .264). Pseudo R^2 was .00.

Discussion

The present study aimed to shed light on employees' leisure thoughts during the working day. In line with our assumptions, we found that employees reported ToLT and ToPLA, which concurs with research on future-oriented thoughts (Barsics et al., 2016; D'Argembeau, 2018). Regarding the frequency of ToLT/ToPLA, our results revealed that employees reported more ToLT/ToPLA

at the beginning and at the end of the working day (U-shaped time trend), which is in line with construal level theory (Liberman & Trope, 1998; Wiesenfeld et al., 2017) and showed that construal level theory is appropriate to predict time trends. For thoughts of other things, we only found a negative linear time trend, which supports the idea that leisure thoughts can be differentiated from other off-task thoughts. Regarding on-task thoughts, the inverted U-shaped time trend was inverse to the U-shaped time trend of ToLT/ToPLA. Employees were thus less focused on their work if they reported leisure thoughts and vice versa. These results underpin the assumption that employees are not always focused on their work (Beal et al., 2005; Merlo et al., 2018).

Besides, we found a linear time trend for ToPLA, but not for ToLT. Although employees reported both more ToLT/ToPLA at the end of the working day than in the middle of the working day (U-shaped time trend), the additional linear time trend for ToPLA indicates that employees thought more of their planned leisure activity at the end of the working day. Hence, a differentiation between ToPLA and ToLT seems reasonable.

The second aim of the study was to investigate whether high pleasant anticipation of the planned leisure activity enhances the frequency of ToPLA across the working day. The results revealed that employees reported more ToPLA if they experienced high pleasant anticipation than did employees experiencing low pleasant anticipation. As expected, pleasant anticipation did not increase the frequency of ToLT, as ToLT are not related to a specific, planned leisure activity. The differentiation between ToLT and ToPLA is necessary and shows that employees not only think of their leisure time in general but also of specific, planned leisure activities. Our analyses also showed that only pleasant anticipation of the planned leisure activity was a valid predictor of ToPLA, whereas leisure plan valence did not predict ToPLA. Thus, the differentiation between pleasant anticipation and leisure plan valence is important.

The third aim of the study was to investigate the relationship between ToLT/ToPLA and

employees' work engagement across the working day, within an hour, and in the subsequent

hour. Across the working day, employees with a higher frequency of ToLT reported lower work

engagement than did employees with a lower frequency of ToLT. Furthermore, employees

indicated lower work engagement during hours with a high frequency of ToPLA compared to

hours with low frequency of ToPLA. Although these results were mixed, they foster the

conception of ToLT/ToPLA as off-task thoughts expected to have negative consequences for

performance (e.g. Randall et al., 2014). When employees generated leisure thoughts either within

one hour or across the working day, they were not able to focus intensively on their work.

In contrast to the negative relationship between ToLT/ToPLA an work engagement within

the same hour, we expected that ToPLA is positively related to work engagement in the

subsequent hour when leisure plan valence is positive. We also assumed that when leisure plan

valence is negative, the relationship between ToPLA and work engagement in the subsequent

hour is negative. The results showed that leisure plan valence moderates the relationship between

ToPLA and work engagement in the subsequent hour. Yet, in contrast to our expectations, the

relationship was *negative* for a *positive* leisure plan valence. When two employees reported a

very positive leisure plan valence, the employee with the higher frequency of ToPLA within the

one hour is expected to show lower work engagement in the subsequent hour compared to the

employee with the lower frequency of ToPLA. Thus, thinking frequently of a leisure activity

with a very positive leisure plan valence decreases work engagement in the subsequent hour.

When employees think of a leisure plan with a positive leisure plan valence, they may stick

to these positive thoughts. According to fantasy realization theory (e.g. Oettingen, 2002, 2012),

just thinking about a positive future will neither change behaviour nor cognition, as individuals

indulge in the positive future. As a consequence, they forget about the obstacles, which they

have to overcome to achieve their future goals and they are not motivated to invest resources in

changing the present. When employees generate ToPLA with a positive leisure plan valence,

they may not recognize other tasks (i.e., obstacles) they have to finish before they can engage in their planned leisure activity. Therefore, they may not know where to invest resources and cannot become engaged. One may also speculate that thoughts of a positive leisure activity motivate employees to savour the positive future event not only in the present but also in the subsequent hour and/or to start detaching from work.

The result that frequently thinking of positive planned leisure activity is negatively related to work engagement in the subsequent hour also adds new insight to a diary study by Dumas and Perry-Smith (2018) on the interaction of family structure, planned leisure activities, and absorption. The authors found that for single and childless employees the proportion of domestic leisure activities (e.g. household, childcare) to other leisure activities (e.g. physical activities, meeting with friends) was lower and that these employees also reported lower absorption. Dumas and Perry-Smith (2018) assumed that planned domestic leisure activities reinforce a goal-directed mindset, while other planned leisure activities distract employees from their work. Although we chose another approach and referred to leisure plan valence, our results concur with their research. The interaction between ToPLA and leisure plan valence showed that when employees reported a positive leisure plan valence (which did not apply to domestic leisure activities, see Appendix A) and more ToPLA, their work engagement was lower in the subsequent hour. Frequently thinking of a positive leisure activity may not only distract employees from their task at hand but may also change their mindset from a goal-directed mindset to an open (i.e., leisure-oriented) mindset hindering employees from becoming engaged in the subsequent hour. Our research provides evidence that thoughts may explain why a lower proportion of domestic leisure activities to other leisure activities was related to lower absorption (Dumas & Perry-Smith, 2018).

For a negative leisure plan valence (i.e., a resource loss), we could not test the relationship between ToPLA and work engagement in the subsequent hour, as only eight participants

indicated a neutral or negative leisure plan valence. However, when employees reported a low positive leisure plan valence (i.e., one point above neutral), the relationship between ToPLA and work engagement in the subsequent hour was non-significant. Thus, when employees' leisure plan valance was only slightly positive, it did not matter for their subsequent hour's work engagement whether they frequently thought about their planned leisure activity (high vs. low ToPLA). It may be that under these circumstances ToPLA neither activate a goal-directed mindset nor activate indulging in the future. However, as the distribution of leisure plan valence was skewed, we could not answer the question in which way a negative leisure plan valence would have changed the relationship between ToPLA and work engagement in the subsequent hour.

It is important to note that the results for leisure plan valence exist due to a cross-level interaction, which accounts for hourly ToPLA and the day-level leisure plan valence. As the between-person relationship between leisure plan valence and work engagement was positive, it would be misleading to state that positive planned leisure activities are in general negatively related to work engagement. We therefore still suggest that thinking of a positive planned leisure activity may indicate an upcoming resource gain. There are several explanations why we failed to find a positive relationship between ToPLA and work engagement for employees with a positive leisure plan valence. First, it is possible that such a relationship does not exist and ToPLA are always negatively related with work engagement. Thus, a positive leisure plan valence is only beneficial for work engagement when employees did not think of the planned leisure activity.

Second, it might not only be the frequency, but also the content of ToPLA that must be understood in more detail. As we did not ask participants to report the specific content of their thoughts in order to distract them as little as possible, we did not know whether employees' thoughts about their planned positive leisure activities were positive themselves. For instance,

rating an anticipated park walk as a positive leisure plan might enhance work engagement across the working day (e.g. high leisure plan valence). However, this could be tainted by negative ToPLA about the planned activity when the weather is cloudy. Therefore, the effects on work engagement may have disappeared.

Third, we asked participants to report a planned leisure activity with only few words and did not ask for a detailed description of their plans. However, their plans might have ranged from very detailed step-by-step plans to simple plans for the future leisure activity. As for detailed plans the realization of a plan becomes more likely (e.g. Gollwitzer, 1996; Schmitt, Gielnik, & Seibel, 2019), it might be that for employees with an elaborated leisure plan the anticipated resource gain is more salient. Thus, ToPLA may only positively relate to work engagement in the subsequent hour when leisure plan valence is positive and the leisure plan itself is well elaborated.

Finally, it is also conceivable that when task complexity is low, ToPLA, in combination with a positive leisure plan valence, may positively relate to work engagement in the subsequent hour. During the working day, tasks differ in their complexity (Beal et al., 2005) and interruptions (e.g. ToPLA) impair the performance of highly complex tasks while enhancing the performance for simpler tasks (Speier, Valacich, & Vessey, 1999). Furthermore, the negative influence of off-task thoughts on performance decreases if the task is less complex (Randall et al., 2014). This would be in line with Dane (2018), who assumed that off-task thoughts are less problematic if the need for monitoring is low.

Theoretical and Practical Implications

Our study contributes to the research on attentional focus (Beal et al., 2005; Leroy, 2009; Merlo et al., 2018) by introducing the concept of leisure thoughts as a special type of off-task thoughts. Leisure thoughts followed a quadratic time trend and the frequency of ToPLA was related to pleasant anticipation. Our research thus demonstrated that leisure thoughts are different from

more general off-task thoughts (i.e., thoughts of other things), and that different types of off-task thoughts have different time trends. Moreover, the time trend for leisure thoughts provided additional evidence for psychological reattachment (Sonnentag, Eck, Fritz, & Kühnel, 2019; Sonnentag & Kühnel, 2016) and detachment (Sonnentag & Bayer, 2005; Sonnentag & Kruel, 2006), as we investigated thoughts that may relate to these two processes. On the one hand, employees had more leisure thoughts at the beginning of the working day, which indicates their need to reattach to work. On the other hand, employees generated more leisure thoughts at the end of the working day, which implies that they start to detach from work. The time trend for on-task thoughts further confirmed this interpretation.

This is the first study to investigate pleasant anticipation of a planned leisure activity as part of a normal working day. In general, studies on pleasant anticipation examine long-lasting events like vacations (Nawijn et al., 2013; Smith & Bryant, 2013), weekends (Sonnentag et al., 2008) or special events like Christmas (Bryant, 2003; Syrek, Weigelt et al., 2018). Our research demonstrated that pleasant anticipation is also important for daily recurring events like leisure time. This is important; behaviour may be influenced more strongly by the anticipation of an upcoming event than by past experience (Baumeister, Vohs, DeWall, & Zhang, 2007). We therefore assume that anticipation is a neglected variable and recommend that researchers should pay more attention to anticipation as an explanation for behaviour.

Contrary to our expectations, we only found negative relationships between ToPLA and work engagement. Yet, leisure plan valence itself was positively associated with work engagement across the working day. When employees stated in the morning that their planned leisure activity will be positive, they were more engaged in their work across the working day compared to employees with less positive planned leisure activities. It seems to be important for employees to have a positive planned leisure activity in mind to become highly engaged in their work. Thus, not only engaging in leisure activities but also having a leisure plan in the morning

may relate to employees' work engagement. However, employees should not think about their

planned leisure activity frequently, as ToPLA distract them from their work within the same

hour. Furthermore, when the planned leisure activity is very positive even the relationship

between ToPLA and work engagement in the subsequent hour is negative. Thus, ToPLA are not

only relevant for work engagement within the same hour but also in the subsequent hour. We

suggest that employees should still plan a positive leisure activity and then allocate a fixed time

(e.g. 10 minutes at the beginning of their working day) for leisure thoughts. This fixed time

could become a ritual and may help employees to reduce leisure thoughts afterwards and to focus

better on their work during the working day.

Finally, our analysis of the time trend for work engagement revealed that employees were

most engaged in their work during the middle of their working day. This has some implications

for employees' self-management, especially for their time planning (e.g. Parke, Weinhardt,

Brodsky, Tangirala, & DeVoe, 2018). First, employees should use the beginning and the end of

their working day for tasks that do not require a high level of engagement. For instance,

employees could start the working day with phone calls and end the working day writing e-

mails, thereby using their high level of work engagement during the middle of the day for more

complex tasks. Second, employees could use lunch breaks to detach from their work, which is

important for their concentration afterwards. As detachment is defined by not thinking of work-

related issues (Sonnentag & Bayer, 2005), employees could use ToLT/ToPLA to detach from

their work during their lunch breaks. In turn, they may generate fewer leisure thoughts for the

rest of the working day and be less prone to distractions.

Limitations and Directions for Future Research

Our study is not without limitations, and these provide indications for further research. First, we

asked our participants to report their leisure thoughts in every hourly questionnaire and thereby

caused them to think of their leisure time. The frequency of ToLT/ToPLA may therefore have

been due to our measurement method. However, asking participants directly about their thoughts

is a common method in research on the frequency of thoughts (Barsics et al., 2016;

D'Argembeau et al., 2011). In addition, studies on rumination are conducted using similar

methods and ask participants for their ruminative thoughts (e.g. Flaxman et al., 2018). Moreover,

participants often skipped one or two hourly questionnaires, which increased the time between

two measurement points. Even if there are effects due to our measurement method, we found the

expected U-shaped time trend for leisure thoughts and not for thoughts of other things, which

cannot be explained by the measurement method. In summary, we argue that the measurement

method had only a very small influence on the frequency of leisure thoughts.

Second, we chose one single working day with hourly measurement points as we focused

on hourly changes in ToLT/ToPLA and their relationship with work engagement. However, we

cannot establish whether employees differ in their anticipations from day to day. Although we

suggest that pleasant anticipation changes within persons, future research should measure

pleasant anticipation at different days using a daily diary design.

Third, pleasant anticipation and leisure plan valence were highly correlated, although we

found some empirical evidence that these constructs are different (i.e., they differ in their

relationship with ToPLA). One explanation for the high correlation may be that participants did

not use the full range of the valence scale. Future research may ask participants about leisure

plan valence and pleasant anticipation of different hypothetical scenarios using our extensive

definition of pleasant anticipation to manipulate features of these scenarios (e.g. probability of

occurrence). This could help to investigate differences between leisure plan valence and pleasant

anticipation, and to gain further insights under which conditions pleasant anticipation is

experienced.

Fourth, only one participant named a leisure activity with a negative leisure plan valence.

We therefore could not test whether the relationship between ToPLA and work engagement in

the subsequent hour is different for negative compared to positive planned leisure activities. This

relationship was negative for very positive planned leisure activities, yet we do not know what

this relationship would look like for (very) negative leisure activities. To take a closer look at

this question, participants could be asked to name a positive and/or a negative planned leisure

activity instead for their planned leisure activity in general. Furthermore, some employees named

more than one planned leisure activity. Thus, their estimation of leisure plan valence and/or

pleasant anticipation could refer to one of these leisure activities or could reflect an overall rating

of their leisure time.

Finally, we used self-reports in our study, which are a source of common method variance

(Podsakoff, MacKenzie, & Podsakoff, 2012). We had to rely on self-reports with respect to our

focal construct, leisure thoughts, as thoughts are only accessible to individuals themselves. For

work engagement, it was also necessary to use self-reports, since work engagement describes an

internal personal state (Sonnentag, Dormann, & Demerouti, 2010).

Conclusion

Our study introduced leisure thoughts as a new construct. We demonstrated that two types of

leisure thoughts, thoughts of leisure time (ToLT) and thoughts of a planned leisure activity

(ToPLA), can be differentiated. We also shed light on the occurrence of both types of leisure

thoughts and found that these were more prevalent at the beginning and the end of the working

day. Furthermore, pleasant anticipation of a planned leisure activity enhanced the frequency of

thoughts of this leisure activity. We found that leisure thoughts relate negatively to work

engagement within the same hour and across the working day. Contrary to our expectation, our

results revealed that for a positive planned leisure activity the relationship between thoughts of

this planned activity and work engagement in the subsequent hour was negative. However,

having planned a positive leisure activity in the morning was positively related to work

engagement across the working day. In sum, our study constitutes a first step to connect

employees' upcoming leisure time with their present work engagement via the phenomenon of

leisure thoughts.

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Table 1

Means (M), standard deviations (SD), and correlations of the study variables.

		M	SD	1	2	3	4	5	6
1	ToLT	3.37	1.81		.71***	-.28***	.35***	-.10*	
2	ToPLA	3.27	1.97	.87***		-.30***	.28***	-.13**	
3	On-task thoughts	7.54	1.46	-.39***	-.26*		-.41***	.36***	
4	Thoughts of other things	3.88	1.93	.45***	.39***	-.38***		-.11*	
5	Work engagement	3.03	0.76	-.16	-.12	.41***	-.18		
6	Pleasant anticipation[a]	3.97	0.85	.23	.30*	.00	.00	.04	
7	Leisure plan valence	5.98	1.11	.01	.02	.14	-.11	.35**	.64***

Note. ToLT = Thoughts of leisure time. ToPLA = Thoughts of a planned leisure activity. Correlations below the diagonal are person-level (between-person) correlations (N = 59-89) and correlations above the diagonal are hour-level (within-person) correlations of the person-mean centered variables (N = 438).

[a]of a planned leisure activity.

p < .05. **p* < .01. ***p* < .001.

Table 2

Multilevel regression analyses to predict different types of thoughts with time of the working day (within-person) and pleasant anticipation of a planned leisure activity/leisure plan valence (between-person).

	ToLT			ToPLA			On-task thoughts			Thoughts of other things		
	Est	SE	t	Est	SE	t	Est	SE	t	Est	SE	t
Intercept	3.12***	0.18	17.21	3.05***	0.21	14.81	7.99***	0.15	54.29	3.53***	0.19	18.18
Linear time trend	2.87	1.64	1.76	5.48***	1.63	3.35	1.39	1.81	0.77	-4.19*	1.97	-2.12
Quadratic time trend	7.96***	1.57	5.06	8.77***	1.57	5.59	-8.40***	1.75	-4.79	1.62	1.90	0.85
BIC	1762.42			1769.50			1813.29			1908.52		
AIC	1742.04			1759.13			1792.91			1888.14		
$-2 \times$ LL	1732.04			1749.13			1782.91			1878.14		
Pseudo R^2	0.03			0.03			0.04			0.01		
Intercept	3.02**	0.23	13.00	3.04**	0.26	11.74	8.31**	0.16	51.21	3.54**	0.24	14.46
Linear time trend	-0.11	2.00	-0.06	1.15	1.93	0.60	3.91	2.27	1.72	-6.69*	2.59	-2.56
Quadratic time trend	9.80**	1.85	5.31	13.11***	1.78	7.37	-9.19***	2.13	-4.31	3.56	2.40	1.48
Pleasant anticipation[a]	0.74	0.37	-1.05	1.06*	0.41	2.56	-0.25	0.27	-0.94	0.22	0.40	0.54
Leisure plan valence	-0.30	0.28	-1.99	-0.38	0.31	-1.21	0.44*	0.21	2.15	-0.34	0.30	-1.13
BIC	1118.17			1111.97			1152.95			1243.27		
AIC	1092.88			1086.68			1128.66			1217.98		
$-2 \times$ LL	1078.88			1072.68			1114.66			1203.98		
Pseudo R^2	0.02			0.05			0.15			-0.03		

Notes. N = 438 (upper part) and *N* = 279 (lower part). ToLT = Thoughts of leisure time. ToPLA = Thoughts of a planned leisure activity. Estimates are unstandardized estimates. BIC = Bayesian Information Criterion; AIC = Akaike's Information Criterion.
[a]of a planned leisure activity (*N* = 59).
p < .05. **p* < .01. ***p* < .001.

Table 3

Multilevel regression analyses predicting work engagement.

	Model 1 (intercept only)			Model 2 (time trend)			Model 3a (ToLT)			Model 3b (ToPLA)		
	Est	SE	t	Est	SE	t	Est	Se	t	Est	Se	t
Intercept	3.03***	0.08	38.49	3.03***	0.08	38.61	3.05***	0.77	39.52	3.04***	0.78	38.78
Linear time trend				0.19	0.59	0.32	0.25	0.59	0.43	0.41	0.59	0.68
Quadratic time trend				-1.26*	0.56	-2.25	-1.04	0.58	-1.79	-0.92	0.58	-1.57
Thoughts within persons							-0.03	0.02	-1.33	-0.04*	0.02	-2.03
Thoughts between persons[a]							-0.09*	0.04	-2.11	-0.05	0.04	-1.34
BIC	890.89			896.42			912.97			913.34		
AIC	878.65			876.04			884.48			884.84		
$-2 \times$ LL	872.65			866.04			870.48			870.84		
Pseudo R^2				0.01			0.04			0.02		

Notes. $N = 438$ (within-person) and $N = 89$ (between-person). ToLT = Thoughts of leisure time. ToPLA = Thoughts of a planned leisure activity. Estimates are unstandardized estimates. BIC = Bayesian Information Criterion; AIC = Akaike's Information Criterion.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4

Multilevel regression analyses predicting work engagement in the subsequent hour (lagged).

	Model 1 (intercept only)			Model 2 (time trend)			Model 3 (ToPLA)			Model 4 (ToPLA)		
	Est	SE	t	Est	SE	t	Est	Se	t	Est	Se	t
Intercept	3.15***	0.11	28.39	3.13***	0.11	28.12	3.14***	0.11	29.18	3.13***	0.11	28.99
Linear time trend				-3.27*	1.50	-2.18	-2.96*	1.50	-1.50	-2.76	1.50	-1.84
Quadratic time trend				-0.98	1.49	-0.67	0.10	1.56	0.07	-0.11	1.54	-0.72
Thoughts within persons							-0.04	0.03	-1.55	-0.04	0.03	-1.47
Thoughts between persons							-0.08	0.05	-1.41	-0.07	0.05	-1.22
Leisure plan valence							0.20*	0.10	2.07	0.19	0.10	1.90
Thoughts within persons*Valence[a]										-0.06*	0.03	-2.05
BIC	367.37			367.03			396.53			403.75		
AIC	357.68			350.93			363.49			368.57		
$-2 \times LL$	351.68			340.93			344.49			346.57		
Pseudo R^2				0.02			0.08			0.09		

Notes. $N = 188$ (within-person) and $N = 51$ (between-person). ToPLA = Thoughts of a planned leisure activity. Estimates are unstandardized estimates. BIC = Bayesian Information Criterion; AIC = Akaike's Information Criterion. Estimates are unstandardized estimates.

[a]Leisure plan valence.

p < .05. **p* < .01. ***p* < .001.

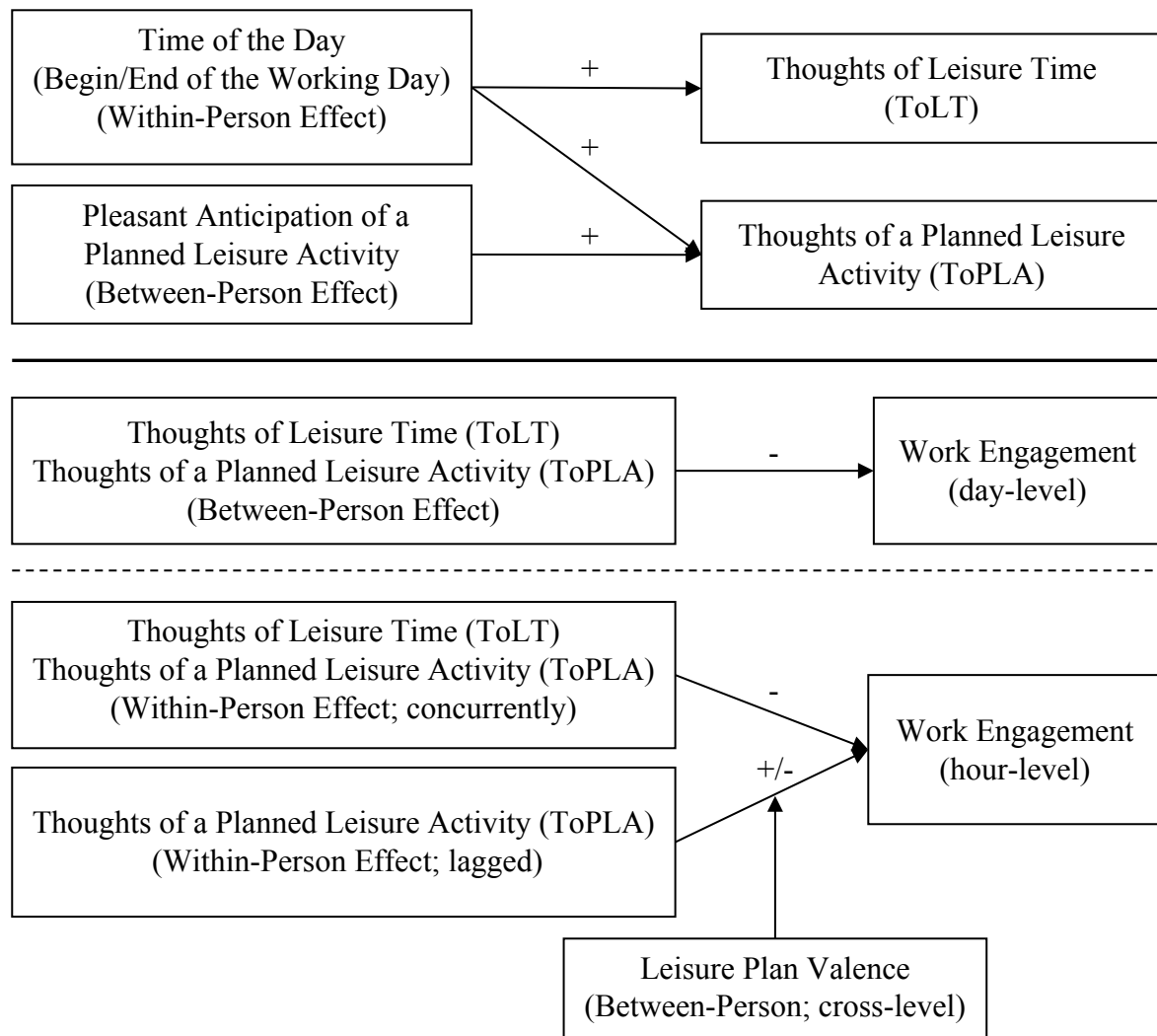| Time of the Day (Begin/End of the Working Day) (Within-Person Effect) | + | Thoughts of Leisure Time (ToLT) |
| Pleasant Anticipation of a Planned Leisure Activity (Between-Person Effect) | + | Thoughts of a Planned Leisure Activity (ToPLA) |

Figure 1. Research model. Upper part: antecedence of leisure thoughts. Lower part: consequences of leisure thoughts.
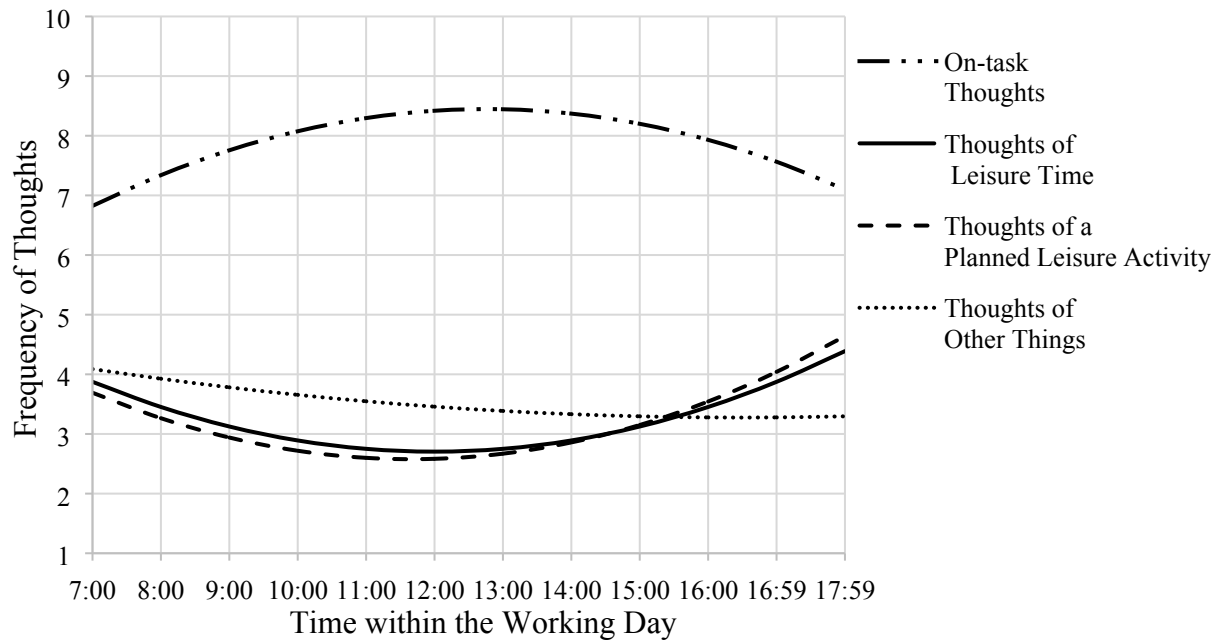
Figure 2. Relationship between the frequency of different types of thoughts and time of the working day.
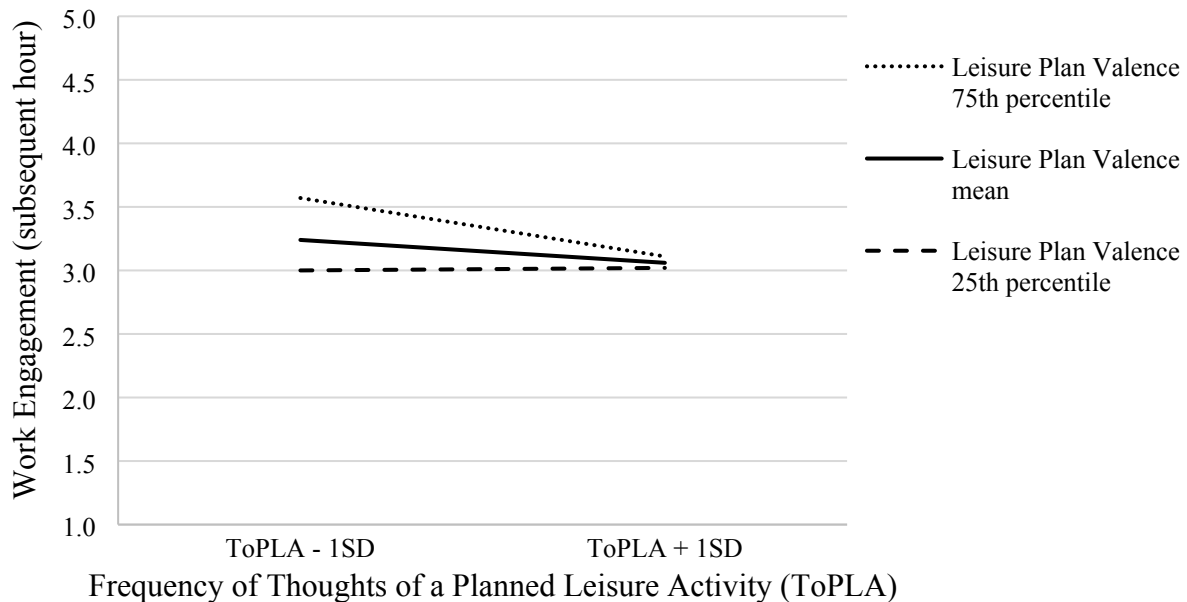

Figure 3. Relationship between thoughts of a planned leisure activity and work engagement in the subsequent hour for different leisure plan valence ratings. With regard to the bipolar scale (1 = *very negative*; 4 = *neutral;* 7 = *very positive*) and the skewed distribution of leisure plan valence, the 25th percentile already includes leisure plans above a positive valence rating (leisure plan valence > 5.25), and leisure plans at the 75th percentile are very positive (leisure plan valence = 7).

Appendix A

Table 1
List of all planned leisure activities and the associated pleasant anticipation and leisure plan valence.

Planned leisure activity	Pleasant anticipation[a]	Leisure plan valence[b]
paying building materials	5.00	6
refreshing / vitalizing	5.00	7
riding a bike	5.00	7
meeting up witch family; doctor's appointment; doing sports	5.00	6
meeting up with family	5.00	7
watching a movie	5.00	7
meeting up with friends	5.00	7
singing course	5.00	7
go riding a horse	5.00	7
go sleeping	5.00	4
watching a series	5.00	7
play something	5.00	7
doing sports	5.00	7
Tai Chi course	5.00	7
watching TV	4.75	6
yoga course	4.75	7
English theatre	4.50	6
meeting up with friends	4.50	7
ironing; riding a bike	4.25	6
visiting sauna	4.25	6
tiding out closet	4.25	7
go running for 2.5 hours	4.00	6
cooking dinner	4.00	6
going to the gym	4.00	7
relaxing	4.00	4
visiting friends	4.00	5
meeting up with friends	4.00	7
football training	4.00	6
householding; watching a movie	4.00	6
cooking with friends	4.00	6
physical therapy	4.00	6
back workout	4.00	7
having sex	4.00	7
doing sports; Zumba	4.00	6
meeting up with friends	4.00	6
planning a holiday	4.00	6
playing volleyball	4.00	7
go bowling	3.75	7
go out for dinner and phone friends	3.75	5
getting healthy from cold	3.75	4
going out with the dog	3.75	5
doing sports; swimming	3.75	6

Table 1 (*continued*)

Planned leisure activity	Pleasant anticipation[a]	Leisure plan valence[b]
watching TV	3.75	7
go running	3.75	6
reading a book	3.50	6
watching Netflix	3.50	7
reading the newspaper	3.50	6
listing to an audiobook	3.25	7
reading; crafting	3.25	5
coming down	3.25	6
go swimming	3.25	6
second job	3.00	4
meeting up with friends	2.75	4
pick up car	2.50	3
watching TV	2.50	5
watching football	2.50	5
office work at German red cross	2.00	4
doing the laundry; packing bags	2.00	5
householding	1.75	3

Note. $N = 59$.

[a]of the planned leisure activity.

[b]single item ranging from 1 (*very negative*) to 7 (*very positive*).