Do not interrupt me if it makes me feel something – Study of the effect of the pleasantness of interruptions on performance

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Title: Do not interrupt me if it makes me feel something – Study of the effect of the pleasantness of interruptions on performance

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ABSTRACT

Introduction: Interruptions are mostly related to negative outcomes and researchers already found that the complexity or the length of interruptions modulate their deleterious effect on performance. However, none of them investigated the effect of the pleasantness of interruptions.

Objective: The objective of the study is to evaluate the impact of the pleasantness on both the correct completion of the interrupting task and the time required to resume the primary task.

Method: We designed a realistic email searching primary task during which 46 participants were either not interrupted or interrupted by a simple math addition task during which a positive or a negative picture was progressively revealed. We then asked participants how pleasant they found the interrupting task and investigated the effects of perceived pleasantness both on the interrupting task and on resuming the primary task.

Results: Results showed that performance on the interrupting task was worst and the time to resume the primary task was longer when participants found the task very pleasant or very unpleasant. Performance in both tasks was the best when participants gave intermediate pleasantness judgments. The findings were independent of the valence and arousal of the pictures used to manipulate task pleasantness.

Conclusion: These results are discussed in light of empirical studies assessing the deleterious effects of emotions on cognition, and practical implications are proposed.

Keywords: Interruptions; Pleasantness; Emotion; Email search task.

1. INTRODUCTION

Being able to complete a single activity from the beginning to its end without being interrupted is hard to achieve. Although literature provide some evidence of a beneficial effect of interruptions (Jett & George, 2003; O'Conaill & Frohlich, 1995; Zijlstra et al., 1999), in most of the cases, interruptions have detrimental effects on well-being and productivity (Couffe & Michael, 2017). Researchers focused on the factors that influence the resumption of the primary task after interruptions, for instance the complexity, the length, the frequency of interruptions or the time at which the interruption occurs (Borst et al., 2015; Brazzolotto & Michael, 2019; Monk et al., 2002; Zish et al., 2015). The pleasantness of a task may influence performance too, especially if it interrupts another one (Speier et al., 2003). However, little is known about the effect of the pleasantness of interruptions. Some researchers did nevertheless investigate the effect of emotional content of a task on individuals. For instance, Butts et al. (2015) showed that the affective tone of a message influences the emotional response of the recipient. Being interrupted can also trigger a positive or negative emotional response depending on the context (Sonnentag et al., 2018). However, little is known about the effect of the pleasantness of interruptions on both, the interrupting and the interrupted task performance. The current study thus focuses on the pleasantness of interruptions in order to highlight its foreseeable effect on an interrupted activity.

"A work interruption is an unexpected suspension of the behavioral performance of, and/or attentional focus from, an ongoing work task" (Puranik et al., 2020). The consequences of interruptions can take the form of a longer time to resume the primary task after the interruption (e.g. Blumberg et al., 2015; Brazzolotto & Michael, 2020; Monk et al., 2008), an increase in the time required to complete the primary task (e.g., Bailey & Konstan, 2006; Gupta, Li, & Sharda, 2013), a fall-off in accuracy (e.g., Drews & Musters, 2015) or an increase of stress (Bawden & Robinson, 2009). When the progression of the primary task is

interrupted, the operator has to switch to the interrupting task (Couffe & Michael, 2017). This flexible behavior is possible by activating processes related to the new task and inhibiting those related to the interrupted one. Resuming the interrupted task requires a new shift of the operator's activity and the reactivation of the related processes shortly stored in memory during the interrupting task. This forth and back behavior is resources consuming. Flexibility, working memory, inhibition, and cognitive resources are thus involved in the resumption of the primary task and are all should be influenced by the pleasantness of the task (Forgas, 2008).

The pleasantness of a task refers to "the pleasure or enjoyment it provides to individuals" (Zenasni & Lubart, 2011; page 51). Pleasantness is very much linked to the valence and the arousal of the content of the task (e.g. a positive content usually leading to a subjective pleasure), but it does not represent how emotional the content is, but rather how much the recipient loves it. Nevertheless, we could predict the effect of the pleasantness of a task by the effect of the emotion on cognition. On the one hand, completing a positive task increases positive affect (Pictet et al., 2011), although there is no consensus on whether it improves or impairs cognition and performance. By impairing attention and generating distracting thoughts, positive emotions decrease inhibitory control, disengagement from the current task and flexibility, and impair information storage and retrieval from memory (Liu et al., 2015; Martin & Kerns, 2011; Phillips et al., 2002; Rowe et al., 2007). However, there is also evidence that positive emotion may enhance cognition. Indeed, by accelerating the change of goals and rules, it seems to improve flexibility and creativity, but it also increases working memory and facilitates orienting of attention (Pe et al., 2013; Pool et al., 2016; Wang et al., 2017).

Negative emotions, on the other hand, increase cognitive demands, decrease working memory and disengagement from the current task, and interfere with cognitive control and

inhibition (Georgiou et al., 2005; Kensinger & Corkin, 2003; Song et al., 2017). However, negative emotions also create an initial mobilization process that directs attention and behavior toward solving the problem, in order to mitigate and repair the impact of the negative event (Taylor, 1991). This can be beneficial to the extent that the narrowing of attentional focus helps the individual focus on an ongoing task and complete it more accurately. A more recent study also showed that negative emotions increase mnemonic precision (Xie & Zhang, 2017). The inconsistency in the above-mentioned findings may be due to the methodological difference between the studies, such as the way emotion was assessed and the experimental paradigm.

Since processing an interruption involves flexibility, working memory, inhibition and cognitive resources (Couffe & Michael, 2017) and emotions seem to affect all these processes, we may hypothesize that emotion can exert an influenced performance in the context of interruptions, without knowing if the influence provides positive or negative outcomes. To test this hypothesis, a realistic primary task of email search interrupted by another task consisting of simple math additions, the completion of which revealed progressively a ground picture of negative or positive valence, was proposed. The objective of the study is to evaluate the impact of these pictures on both the correct completion of the interrupting task (i.e., math additions) and the required to resume the primary task.

2. MATERIAL AND METHOD

2.1. Participants

Forty-six volunteers (18 male, 28 females; mean age = 20.4 ± 1.8 years) took part in this experiment. Participants were recruited among undergraduate students in classrooms from varied fields of study. All had normal or corrected-to-normal vision and reported no specific characteristics that could influence their performance. The experiment was administered in a closed room in the laboratory and each participant completed it alone. An

informed consent was obtained from each participant. This research complied with the American Psychological Association Code of Ethics and the tenets of the Declaration of Helsinki.

2.2. Stimuli and material for the Primary Task

The primary task was an email searching task similar to the one used by Brazzolotto and Michael (2019). Each page (see Figure 1) contained a list of emails at the center of the screen, a bar with the search criteria and a trash icon at the top, a banner with options on the left, and ads on the right. The option bar and the ads did never change during the experiment and the participants could not interact with them. Each list consisted of 30 emails, each of which was displayed on a separate line. Each line contained relevant elements to the task: an empty square, the name of the sender, a colored circle (either blue, light-gray or black), and an attachment symbol (a paper clip). Irrelevant elements were added in order to create a realistic inbox environment and were used as distractors for the visual selective attention task: a star (either black or white), a blue flag (either present or not), the subject line, the first words of the email, and the date of sending.

The participants were instructed to click on the boxes displayed on the left of each target email (causing a check mark to appear inside them). Target emails were described by a combination of three criteria listed above the emails list. These were the name of the sender with an adjacent circle in a specific color and a paper clip indicating the presence of an attachment (e.g. Pierre Michon – blue circle – paper clip). Each page contained 10 target emails. In each new trial and for each email item, the search criteria and the sender names were different. When participants had finished scanning the page, they had to make a new page appear by clicking on the trash icon.

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Please insert Figure 1 here

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128 2.3. Stimuli and material for the Interrupting Task

129 For the purpose of the study, thirty pictures (15 positive and 15 negative) were
130 preselected from the International Affective Pictures System (IAPS; Lang, Bradley, &
131 Cuthbert, 1999). We then asked a different sample of 66 participants (30 male, 36 females;
132 mean age = 20.2 ± 1.4 years), to judge the valence and the arousal of each picture with a 9-
133 point SAM Scale (Bradley & Lang, 1994). Among those pictures, 20 (10 positive and 10
134 negative) were selected with the caution that the mean arousal level for positive and negative
135 pictures be similar (see Table 1). Each picture was used as a visual background during the
136 interrupting task.

137 The interrupting task was an addition task. Participants saw successively 8 simple
138 math additions (24-point Calibri white font) ranging from "0 + 0" to "9 + 9".

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142 2.4. Procedure

143 Each trial consisted of one inbox page and the participants completed 30 trials. Twenty
144 trials were postponed by the interrupting task, which contained either a positive picture (10
145 trials) or a negative picture (10 trials). Remaining trials were uninterrupted. The tested
146 conditions were randomly presented.

147 Participants were not informed of the presence of interruptions, but they were
148 instructed to complete the task displayed by the program, as quickly and accurately as
149 possible. When the trial should contain an interruption, the interrupting task appeared after
150 that a certain number of target emails between 1 to 9 (randomly and equiprobably chosen by
151 the computer) was selected. A black screen thus covered the inbox page and the interrupting
152 task started. Simple math additions were then presented on the screen one by one. Each

addition appeared for 3 seconds and the participants had to type his answer on the keyboard. Whatever the answer given by the participant (right, wrong or no answer), 1/8th of a ground picture was revealed (see Figure 2). Responding quickly did not make the image appear faster. A new addition was then presented, and so on until the 8 additions were completed. The full picture was visible at the end of the eighth addition and remained on the screen for 2 seconds. Then, the inbox page reappeared, and all selected emails before the interruption remained selected. The participants continued to search for target emails and finish the trial by clicking on the trash icon. If the trial contained an interruption, participants then saw the picture displayed during the task and they had to judge it in three ways with a modified 9-point SAM Scale (Bradley & Lang, 1994). First, participants judged the degree at which the picture made the interrupting task pleasant (1 = very unpleasant; 9 = very pleasant). Then, participants judged the valence of the picture (1 = very negative; 9 = very positive). Finally, participants judged the arousal of the picture (1 = not arousing at all; 9 = very arousing). After that, a new inbox page appeared.

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We collected two dependent variables : (i) the accuracy, i.e. the percentage of correct responses obtained in the interrupting tasks and (ii) the Resumption Lag (RL), i.e. the time that elapsed between the end of the interrupting task and the first next selected email in the primary task (Altmann and Trafton, 2002). We also extracted the mean time to select an email in uninterrupted trials, that we called Inter-Click-Interval (i.e. ICI), to be a control variable for RL.

3. RESULTS

Analyses were carried out with Statistica 12.0. We conducted correlations, trial-by-trial Analyses of Variance (ANOVA) with Bonferroni-corrected comparisons and mediation analyses. When the participants did not select enough target emails in order to trigger the interruption, the trial were removed from analyses. Thus, 10% of interrupted trials were removed. The aim was to use task pleasantness as dependent variable. However, because some participants did not rate the interrupting task using the entire scale (1 to 9), the resulting table of means was incomplete (e.g. a participant never rated the pleasantness of the interrupting task as 3 and 6), and 33 % of the values were missing. Therefore, trial-by-trial analyses were used since using subjects as a grouping factor in a repeated measures analysis was impossible. Autocorrelations were computed in order to ensure that trials were independent from each other. The lag 1 autocorrelation coefficient was obtained for each participant and, subsequently, the average autocorrelation coefficient of the whole sample was computed using the Fisher transform. For accuracy, the autocorrelation coefficient was not significant (r = -0,063; $p = 0.68$), neither for Resumption Lag ($r = 0.018$; p = 0.90). This suggests that the trials can be considered as being independent from each other and trial-by-trial analyses can be used.

First of all, we conducted trial-by-trial correlations analyses on valence, arousal, and task pleasantness. A positive correlation was found between valence and task pleasantness ($r = 0.81$, $p < .01$) and a negative correlation between valence and arousal (r = -0.15, $p < .01$) and between arousal and task pleasantness (r = -0.15, $p < .01$).

The second step consisted in assessing the influence of task pleasantness on accuracy in the interrupting task independently of the valence and the arousal of the ground pictures, and the timing of the interruption. To this aim, we first extracted the residual accuracy on the basis of multiple regression analyses with trial-by-trial accuracy as dependent variable, and valence, arousal of pictures and timing as predictors. The residual accuracy was then used in a

trial-by-trial ANOVA with the score of task pleasantness (from 1 to 9) as inter-trial factor. The main effect of task pleasantness was significant (see Figure 3; F_2 (8, 823) = 3.56, $p < .01$, $\eta^2 p = 0.03$). A V-shaped curve was observed with accuracy being the lowest when the interrupting task was judged only as being extremely pleasant (i.e., 9) or very unpleasant (i.e., 2). Accuracy was the highest for median scores of pleasantness (5). Bonferroni-corrected comparisons showed that the only reliable differences were found between 2 and 5 ($p < .04$) and between 5 and 9 ($p < .02$); no difference was found between 2 and 9 ($p = 1.0$).

Since, the V-shaped curve resembles the Yerkes-Dodson law (Yerkes & Dodson, 1908), which states that performance is an inverted V-shaped as a function of arousal, we decided to conduct a trial-by-trial ANOVA on the residual accuracy (computed with the valence of pictures, the perceived task pleasantness and timing as predictors) with the score of pictures arousal (from 1 to 9) as inter-trial factor. The main effect of pictures arousal was not significant (F_2 (8, 823) = 1.79, NS, $\eta^2 p = 0.02$). In the same way, the main effect of valence of the pictures was not significant (F_2 (8, 823) = 0.39, NS, $\eta^2 p = 0.004$).

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The third step was to demonstrate that the occurrence of an interruption, whatever its pleasantness, affected the performance of the interrupted primary task. A trial-by-trial ANOVA was used to compare ICI and RL. The analysis showed that RL (5.26 s) was significantly longer than ICI (3.36 s; F_2 (458) = 403.06; $p < .001$; $\eta^2 p = .47$), suggesting a deleterious effect of interruptions on the email search.

Finally, the effect of the pleasantness of the interrupted task on the primary task was assessed through the analysis of RL. The same logic was as before. We first extracted the residual RL on the basis of multiple regression analyses with trial-by-trial RL as dependent

variable, and valence and arousal of pictures and timing as predictors. The residual RL was then used in a trial-by-trial ANOVA with the score of task pleasantness of the interrupting task (from 1 to 9) as inter-trial factor. The main effect of task pleasantness was significant (see Figure 3; F_2 (8, 823) = 3.44, $p < .01$, $\eta^2 p = 0.03$). Once again, a V-shaped curve was observed with RL being the slowest in the extremities (1 and 9) and the shortest for the median score (5). Bonferroni-corrected comparisons showed that the only reliable differences were found between 1 and 5 ($p < .01$) and between 5 and 9 ($p < .04$); no difference was found between 1 and 9 ($p = 1.0$).

Just as for accuracy, we decided to conduct a trial-by-trial ANOVA on the residual RL (computed with the valence of pictures, the perceived task pleasantness, and timing as predictors) with the score of pictures arousal (from 1 to 9) as inter-trial factor. The main effect of arousal of the pictures was not significant (F_2 (8, 823) = 0.58, NS, $\eta^2 p = 0.006$). In the same way, the main effect of valence of the pictures was not significant (F_2 (8, 823) = 1.34, NS, $\eta^2 p = 0.01$).

The same pattern of results was thus found for the effect of task pleasantness on accuracy and RL. However, a question remains: does task pleasantness influences directly the RL or does it affect accuracy at first place which in turns influences RL? Indeed, succeeding the task may be a factor of pleasantness. Therefore, a mediation analysis was conducted with task pleasantness as the independent variable, the RL as the dependent variable and accuracy as the mediator. The analysis did not reveal a mediated effect of accuracy (Sobel $z = -1.5$, $p = .13$; Sobel, 1982).

4. DISCUSSION

The current study was conducted in order to investigate the effect of the pleasantness of an interrupting task on completing it, as well as on the time taken to resume a primary task.

Participants were required to find target emails among distractors and could be interrupted by a task the background picture of which could render it pleasant or unpleasant.

As shown many times before, we found that interrupting the primary task slowed down performance (Blumberg et al., 2015; Hodgetts & Jones, 2006). However, our results mainly showed that the more the participants found the interrupting task pleasant or unpleasant, the worst they performed in it. Furthermore, under the same conditions, participants took more time to resume the primary task. Interrupting tasks that were judged as being rather neutral (or of intermediate pleasantness) were the less deleterious both for the interrupting task and the interrupted one.

That very pleasant and very unpleasant interrupting tasks are less well performed could be due to the fact that performing emotion-charged tasks is resources consuming, whether pleasant or unpleasant (Yiend, 2010). Cognitive resources being limited, few remain available to complete the task, thus performance decreases.

That the time to resume the primary task was the longest with very pleasant and very unpleasant interrupting tasks could be understood by the impairment by emotions of processes underlying the resumption of the primary task: flexibility, working memory, inhibition, and cognitive resources. Switching from an emotion-charged interrupting task seems to be more difficult because flexibility has been shown to be impaired by positive emotions through distracting thoughts and slowing attentional shifting (Phillips et al., 2002). But also, negative emotions may dampen flexibility through impairing disengagement (Georgiou et al., 2005). Positive and negative emotions have also been shown to impair working memory (Kensinger & Corkin, 2003; Martin & Kerns, 2011), leading to disrupt the storage of processes related to the primary task, thus increasing the time to reactivate them once the interruption is over. By capturing attention, emotions could interfere with current processes and decrease performance (Liu et al., 2015; Song et al., 2017). Therefore, it could be more difficult to inhibit an

interrupting task and move on when it is emotion-charged. Finally, the allocation of cognitive resources is seemingly hindered by emotions, which demand a great amount of cognitive resources (Yiend, 2010). Being limited (Kahneman, 1973), dividing resources during the interruption should then be more difficult, resulting in a higher deactivation of processes related to the primary task and then a longer time to resume it. However, this remains heavy speculative since there are no clear clues as far as which of these processes is the most impacted, and this constitutes a limitation of the present study. Future investigations could shed some light on this issue.

Alternative explanations are nevertheless plausible. The weakest performance at the interrupting task and at the resumption of the primary task may come from an attentional residue resulting from the switch of task. Indeed, task switching leads to cognitively linger on the suspended task, which has been shown to affect performance on the interrupting task. (Leroy, 2009). When being interrupted by the addition task, the participants may be still cognitively thinking of the email task, which may have resulted in low accuracy. However, this theory cannot explain why performance is different depending on the pleasantness, as there is nothing to suggest that doing a task that is pleasant or unpleasant will lead to higher attentional residue from the primary task. Achieving a goal by progressing through the interrupting task could also explain a drop in performance, since it has already been shown that goal progress on the interrupting task has been linked to positive affect, affecting outcomes (Sonnentag et al., 2018). Once again, there is no indication in this theory that the goal is influenced by the pleasantness of the interrupting task.

Overall, our results support that task pleasantness has a deleterious effect on cognition and performance, and this tallies well with numerous studies which found similar effects of emotions with simpler and less naturalistic tasks. Moreover, we found a pattern similar of the Yerkes-Dodson law (Yerkes & Dodson, 1908), but the analysis showed that the V-shaped

curve of performance was due to task pleasantness, not to arousal. Our study is novel in several regards. Usually, the effect of emotions is investigated after manipulating the valence or the arousal and the effects are analyzed as a function of these manipulations. Here, instead, we used the judgment of pleasantness provided by each participant for each ground picture and in each new trial as independent variable in order to assess its effect on trial-by-trial performance. Moreover, all effects were analyzed independently of the perceived valence and arousal of every single items. This ensured that what was assessed was truly and solely the pleasantness of the interrupting task as perceived by each participant. Finally, we are also, to our knowledge, the first to assess the effect of the pleasantness of the interrupting task on task completion, showing that it may affect not only the interrupting task but also the interrupted one. We thus showed some effects on the current performance, and some after-effects when trying to move one. Our results could probably be extended to a real-world situation mainly because of the naturalistic and ecological aspect of our paradigm. For instance, we investigated the pleasantness through the use of ground pictures, but this could also be achieved through doing repetitive and annoying activities or creative and stimulating ones, or even through the work atmosphere and pressure. Would the results be similar? Many questions merit answers for better understanding how the pleasantness of interruptions could influence productivity and well-being at work and then resolve the subsequent issues. This study nevertheless has some practical implications. We have shown that the emotional content of a task negatively affects individuals' performance, as much on the task itself as on the resumption of the primary task. It therefore questions the way notifications, or the content of emails are designed. It can indeed be assumed that pop-ups designed with colors or images to attract users are to be avoided in favor of more neutral backgrounds. It can also be extrapolated that, as firstly studied by Butts et al. (2015), the emotional content of the message received by email or instant messaging will influence performance. We thus can

hypothesize that a message that is neither too cold nor too warm, what should not please or displease the recipient, will have a less deleterious effect on him or her. However, these recommendations are the complete opposite of current practices, which aim to attract as much attention from users as possible, without thinking about the harmful consequences for them.

The study has some limitations yet. The magnitude of the effects was low, suggesting that the effect of pleasantness was small, even if it exists. The number of trials was also quite large, what could have led to an overestimation of the significance of our trial-by-trial analyses (comparing to participant-to-participant analyses). Moreover, the collection of judgements was problematic since we wanted to ask the participant during or right after the interrupted task, but this would break the continuity of the task. Collecting the judgements between two trials was thus decided, but we are aware that times are spent before the collection. Finally, the choice of the interrupting task can be discussed. Presenting the pictures as puzzles differed from the literature, but we wanted participants to stay motivated in order to ensure that induction works. We also used pictures of the IAPS because, although they are quite old, they are frequently used.

In conclusion, very pleasant interrupting tasks as much as very unpleasant ones were both performed less well and, as a negative after-effect, impaired performance on the task that was interrupted. Our results provide empirical support to the deleterious effect of emotions on cognition, especially in the context of an interrupted activity.

Both authors declare that they have no conflict of interest.

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Table 1: Judgment of the 20 ground pictures displayed during the interrupting task in the IAPS and in the current study.

Description	Picture n°	IAPS				The Current Study (46 participants)					
		Valence		Arousal		Pleasantness		Valence		Arousal	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Battered Woman	3180	1.92	1.13	5.77	2.21	2.78	1.92	2.04	1.75	6.39	2.05
Disabled Child	3300	2.74	1.56	4.55	2.06	3.07	1.34	2.93	1.57	5.07	2.13
Soldier	6212	2.19	1.49	6.01	2.44	3.09	1.53	2.22	1.72	6.52	1.92
Attack	6313	1.98	1.38	6.94	2.23	3.17	1.39	2.30	1.17	5.87	2.11
Roach On Pizza	7380	2.46	1.42	5.88	2.44	2.87	1.50	2.52	1.36	5.33	2.52
Needle	9008	3.47	1.85	4.45	2.10	2.43	1.44	2.09	1.13	5.7	2.26
Cow	9140	2.19	1.37	5.38	2.19	2.35	1.48	1.72	0.89	6.65	2.08
Dirty	9300	2.26	1.76	6,00	2.41	2.39	1.56	1.91	1.30	5.78	2.47
Handicapped	9415	2.82	2,00	4.91	2.35	3.33	1.75	2.80	1.88	5.91	2.17
Auto accident	9910	2.06	1.26	6.20	2.16	3.11	1.69	2.20	1.47	5.20	2.44
Seal	1440	8.19	1.53	4.61	2.54	6.65	1.57	7.41	1.33	5.24	2.16
Kitten	1460	8.21	1.21	4.31	2.63	6.33	1.76	6.83	1.45	4.91	2.29
Puppies	1710	8.34	1.12	5.41	2.34	6.41	1.80	7.33	1.65	5.09	2.10
Jaguars	1722	7.04	2.02	5.22	2.49	6.41	1.87	7,00	1.87	5.33	2.21
Couple	2550	7.77	1.43	4.68	2.43	6.43	1.82	7.30	1.71	5.20	2.21
Hang Glider	5626	6.71	2.06	6.10	2.19	6.11	1.72	6.80	1.36	4.85	1.92
Sky	5982	7.61	1.48	4.51	2.85	6.09	1.95	6.76	1.46	3.74	1.97
Desert	7580	7.51	1.60	4.59	2.72	5.72	1.56	6.46	1.53	3.87	2.30
Skier	8190	8.10	1.39	6.28	2.57	5.85	1.46	6.41	1.51	3.87	2.20
Athletes	8380	7.56	1.55	5.74	2.32	6.37	1.48	7.35	1.39	4.91	2.17

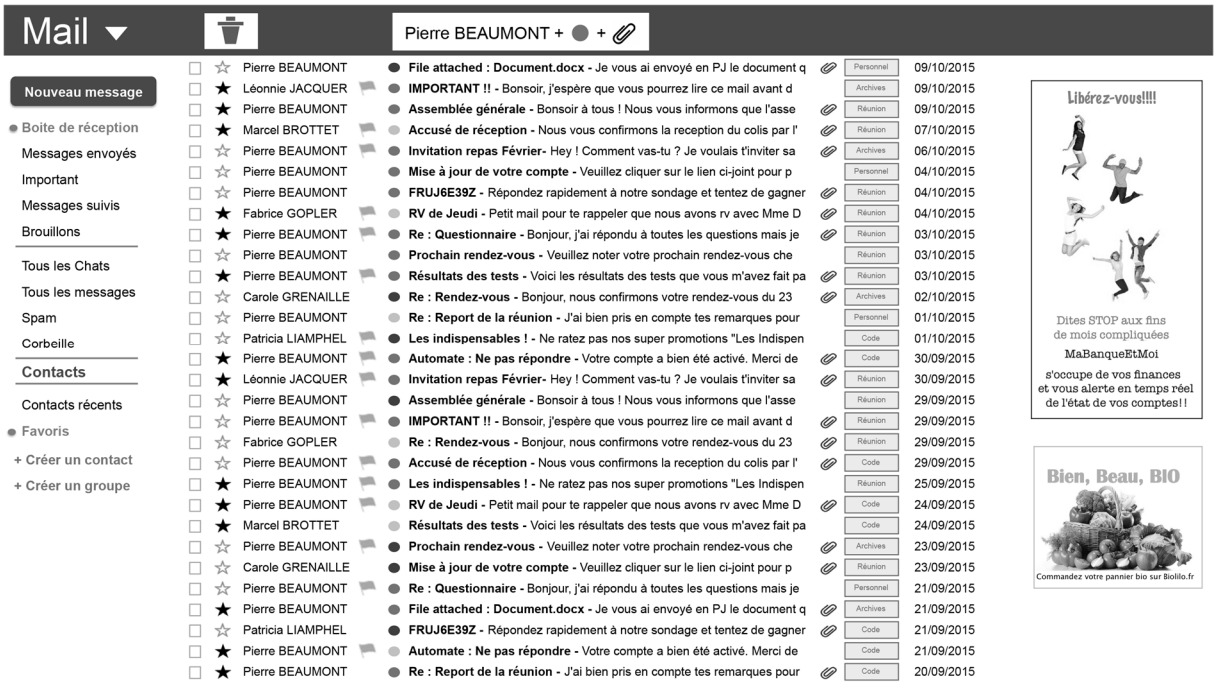

Figure 1: An example of the primary task.

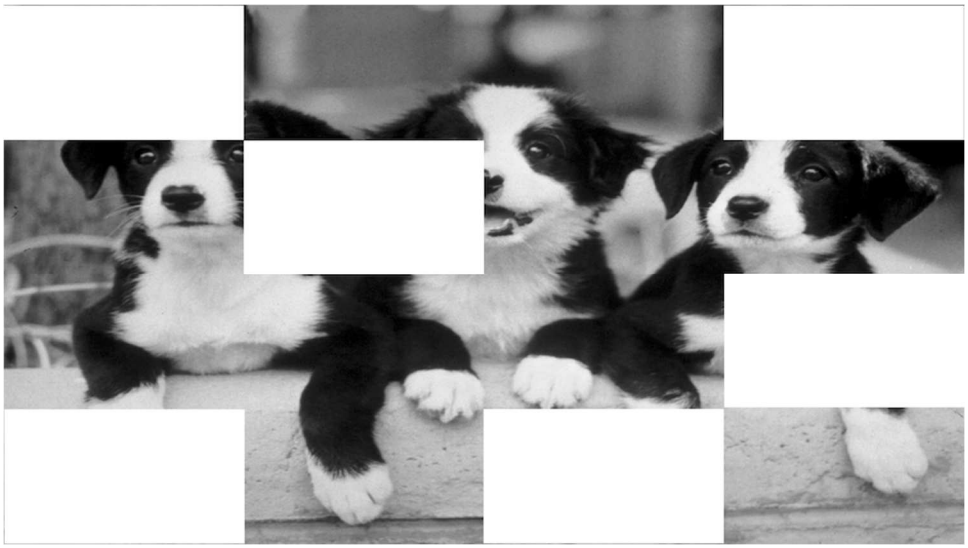

Figure 2: An example of the interrupting task.

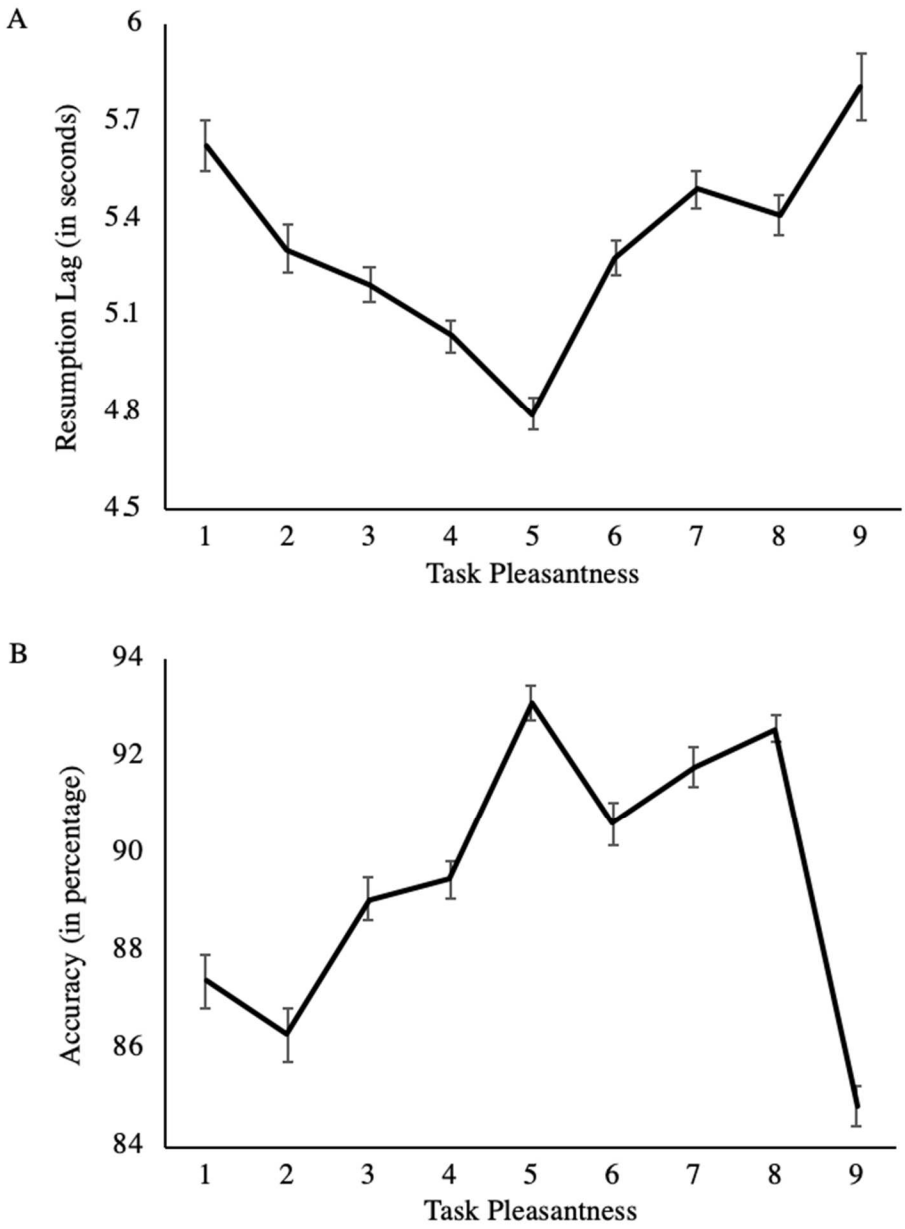

Figure 3: Mean (± 1 SEM) RL expressed in seconds (A) and accuracy expressed in percentage (B) and plotted as a function of Interrupting Task Pleasantness and Mean ICI (A).