Does Impulsivity Relate to Perceived Dependence on and Actual Use of the Mobile Phone?

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SUMMARY

Several authors have studied the risks arising from the growth in mobile phone use (e.g. large debts incurred by young people, banned or dangerous use of cellular phones). The aim of this study is to analyse whether impulsivity, which has often been related to various forms of addictive behaviours, is associated with massive use of and dependence on the mobile phone. In this study, 108 female undergraduate psychology students were screened using a questionnaire evaluating actual use of and perceived dependence on the mobile phone, and with the French adaptation of the UPPS Impulsive Behavior Scale. This scale identifies four distinct components associated with impulsive behaviour: Urgency, lack of Premeditation, lack of Perseverance, and Sensation Seeking. The results showed that a relationship can be established between the use of and perceived dependence on the cellular phone and two facets of impulsivity: Urgency and lack of Perseverance. Copyright © 2006 John Wiley & Sons, Ltd.

Cellular phone use has greatly increased in Europe in recent years. According to the Swiss Federal Statistics Office (2005a), in 2003, approximately 90% of the inhabitants of most European countries owned a cellular phone. In comparison, approximately 50% of Europeans had a cellular phone in 1999, and only about 20% in 1997. In Switzerland, the country in which the current study was done, 80% of the inhabitants were cellular phone subscribers in 2003. Obviously, the European situation is not fully representative of this phenomenon in the rest of the world. Indeed, cellular phone use is less frequent in other countries, because of different lifestyles (e.g. Canada), or economic factors (e.g. Africa). Several authors have evoked the evolutionary and social virtues of our 'cellular phone society'. According to Geser (2004), the cellular phone allows us to engage in communication, without being constrained by physical proximity or spatial immobility. Thus, the contribution of mobile telephony is positive, both from the point of view of individual users (e.g. enlarging the number of potential communication partners or switching rapidly between very different situational contexts), and from the point of view

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of social systems (e.g. increasing the functional viability of very small groups by optimising the possibility of mobilising additional resources from outside actors).

In spite of the positive contributions that have been attributed to the cellular phone, it is important to highlight the fact that the use of cellular phones is increasingly associated with harmful or disturbing behaviours. Indeed, in a growing number of public places (e.g. public transit, restaurants), the use of cellular phones is prohibited, just like smoking (Jauréguiberry, 1998). From a social point of view, it is interesting to note that the status of the mobile phone may change from an instrument that supports social exchanges to an object that clearly interferes with them. Indeed, nowadays individuals, who can say they have never found themselves in a situation where a mobile phone disturbed their social activities are rare. Finally, because of the dangers involved in cellular phone use while driving (Briem & Hedman, 1995; Violanti, 1998), more and more countries are enacting laws prohibiting their use under these circumstances.

Several studies have shown that intensive use of the mobile phone often results in large debts, especially for young people. Funston and MacNeill (1999) conducted a study on 750 young people aged from 16 to 21 years old, which indicated that 18% of the participants had difficulties paying their normal bills and 7% were struggling to pay them. In addition, the study reported that many young people did not understand their mobile phone contracts. A more recent study, done by the Youth Action and Policy Association (YAPA, 2004) on 550 young people (most of them under the age of 18 years), found that 20% of young phone owners admitted that their phone debt had caused them major problems, and fewer than 10% knew where to get help in such circumstances. They also found that 40% of the participants had received monthly bills for more than $200 and 4% had received bills for more than $1,500. Finally, more than 10% of the respondents said they spent more than 50% of their income on phone bills.

To the best of our knowledge, only one study (Bianchi & Phillips, 2005) has focused on the psychological factors involved in massive and exaggerated use of the mobile phone. Bianchi and Phillips tried to determine the psychological predictors of illegal (e.g. public places) or dangerous (e.g. phoning while driving) use of the cellular phone. To this end, 195 participants, aged from 18 to 85 ($M = 36.07$ years, $SD = 12.43$) were screened about their use of the mobile phone. The questionnaires used were the MMPI-2 Addiction Potential Scale (Weed, Butcher, McKenna, & Ben-Porath, 1992), the Coopersmith Self-Esteem Inventory (Coopersmith, 1989), the Eysenck Personality Questionnaire—Revised Short Scale (Eysenck & Eysenck, 1991), and a Mobile Phone Use Survey (Bianchi & Phillips, 2005). The Mobile Phone Use Survey consisted of three sections addressing: (1) demographic details (e.g. gender, level of education), (2) mobile phone use (e.g. time spent on the mobile phone per week) and (3) problem use. The section on problem use included a series of questions based on the addiction literature and, in particular, what is currently known about behavioural and technological addiction. This study revealed that problematic use of mobile phones was a function of youth, low self-esteem and high extraversion. Thus, in Bianchi and Phillips' view, these findings may help clinicians and policy makers to identify certain important issues when dealing with problematic use of cellular phones.

It is now important to consider the psychological factors that could lead to a massive use of and/or dependence on the mobile phone. According to the literature, it appears that impulsivity, which was not specifically assessed in Bianchi and Phillips' study (except in certain aspects relating to Sensation Seeking tendencies), is closely related to addictive behaviours. Several studies have shown that impulsivity is involved in various psychological states linked to dependence, such as substance abuse (e.g. Dinn, Aycicegi,

& Harris, 2004; Miller, Flory, Lynam, & Leukefeld, 2003; Whiteside & Lynam, 2003) and eating disorders (e.g. Claes, Vandereycken, & Vertommen, 2005; Wiederman & Prior, 1996). Consequently, it could be hypothesised that impulsivity may be related to a potential dependence on the mobile phone.

Recently, Whiteside and Lynam (2001) revealed impulsivity to be a multi-faceted concept by identifying four separate components associated with impulsive behaviours, which are the basis for the creation of a scale called the UPPS Impulsive Behavior Scale. The four personality traits measured by the UPPS are: (1) Urgency, defined as 'the tendency to experience strong impulses, frequently under conditions of negative affect'; (2) Premeditation, defined as 'the tendency to think and reflect on the consequences of an act before engaging in the act'; (3) Perseverance, defined as 'the ability to remain focused on a task that may be boring or difficult'; (4) Sensation Seeking, defined as 'a tendency to enjoy and pursue activities that are exciting, and openness for new experiences'. Several studies based on Whiteside and Lynam's work on impulsivity have established a relationship between certain facets of impulsivity and some psychopathological states. A recent study (Claes et al., 2005) on bulimia nervosa highlighted the fact that bulimic symptoms (such as vomiting) are positively related to Urgency but less so to Premeditation and Perseverance. Along the same lines, Whiteside and Lynam (2003) suggested that Urgency and Sensation Seeking are the impulsive behaviour-related traits most strongly associated with alcohol abuse. A further example is a study done by Miller et al. (2003), which demonstrated that lack of Premeditation is the most consistent dimension of impulsivity related to externalising behaviours (antisocial personality disorder, psychopathy, and a variety of delinquent acts), while Sensation Seeking is a significant predictor of involvement in delinquent acts, drug and alcohol use and risky sexual behaviour. Similarly, the aim of the present study is to determine which facets of impulsivity are associated with the self-reported real use of and perceived dependence on cellular phones.

METHOD

Participants

A total of 134 undergraduate psychology students at the University of Geneva (117 females and 17 males) took part in the study. (The gender imbalance is due to the small number of male students in the psychology department of the University of Geneva.)

According to the Swiss Federal Statistics Office (2005b), the average disposable income of Swiss university students is about 1750 CHF (Swiss francs),[1] and they spend approximately 5% of their income on communication, whatever their gender.

All participants performed certain tasks and filled out some questionnaires to get a course credit. Not all of the questionnaires used fit into the framework of this study. Data related to other questionnaires will be presented elsewhere.

Procedure

All participants were screened using the French version of the UPPS Impulsive Behavior Scale Behavior (Van der Linden et al., 2006), the Beck Depression Inventory (BDI-2, Beck,

[1]1750 Swiss francs represent approximately 1100 euros.

Steer, & Brown, 1998) and the State-Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1993). Because the other questionnaires included in this study are all trait measures, only the Trait Anxiety Inventory (STAI-T) will be used in the following analysis.

The participants also filled out a questionnaire about their use of cellular phones. This scale is made up of five items concerning whether or not the participant owned a cellular phone, the number and duration of the calls made in 1 day, the number of Short Message System (SMSs) sent monthly, and a self-evaluation measurement of perceived dependence on the cellular phone, measured on a scale ranging from 1 to 10.[2]

We excluded from our analyses two participants who did not answer the phone questionnaire. The proportion of students who had a cellular phone at the time of testing was 95.45% (111 females and 15 males) of the remaining 132 participants. Three other participants were excluded because they presented aberrant values in their questionnaires relating to the use of the cellular phone (e.g. duration of more than 600 min per day spent on the mobile phone). Because of the small number of men in our sample, we decided to do our study on female participants only. Our final sample is composed of 108 females, aged from 19 to 48 years ($M = 24.17$, $SD = 6.83$). All analyses were done with R software (R Development Core Team, 2006).

RESULTS

Of the 108 women selected, 8 had one or two missing values in their questionnaire. The reliability coefficients (Cronbach's alpha) calculated on questionnaires with no missing values were high for the impulsivity scales (UPPS—Urgency: 0.86; UPPS—Lack of Premeditation: 0.86; UPPS—Lack of perseverance: 0.83; UPPS—Sensation Seeking: 0.83), the depression scale (BDI-2: 0.89) and the anxiety scale (STAI-T: 0.93), which confirms that the scales have good internal validity. To allow analyses on all 108 women, missing values were replaced by the mean obtained by the participant on the scale. This method is reasonable when a scale has an alpha greater than 0.70 (Schafer & Graham, 2002).

Descriptive statistics relating to the questionnaires

Means and medians for the UPPS, the BDI-2, the STAI-T and the cellular phone questionnaire are presented in Table 1 (for the confidence interval of the median, see Hettmansperger & Scheather, 1986).

It should also be noted that the general level of perceived dependence is high (5.63/10), which supports the assumption that the mobile phone can be an object that creates a feeling of dependence.

Correlation analysis on perceived dependence on and actual use of the mobile phone

Exploration of the data revealed that the duration, the number of calls and the number of SMSs were skewed with a long positive tail. Consequently, we decided to compute Kendall

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[2]See Appendix 1 for the 'cellular phone questionnaire'.

Table 1. Means and medians for the questionnaires (within their 95% confidence interval)

	M	Median
BDI-2	11.58 (10.05, 13.12)	10.50 (8.00, 11.62)
STAI-T	42.61 (40.57, 44.66)	41.00 (38.38, 44.00)
UPPS—Urgency	29.41 (28.21, 30.61)	29.50 (28.00, 31.62)
UPPS—lack of Premeditation	23.38 (22.46, 24.30)	23.00 (22.00, 24.00)
UPPS—lack of Perseverance	20.40 (19.58, 21.23)	20.00 (19.00, 21.00)
UPPS—Sensation Seeking	28.98 (27.15, 30.21)	30.00 (28.00, 31.00)
Cellular phone—Duration	27.68 (19.86, 35.49)	11.25 (10.00, 15.00)
Cellular phone—Calls	1.96 (1.50, 2.43)	1.50 (1.00, 2.00)
Cellular phone—SMS	79.31 (66.16, 92.47)	60 (50.00, 70.00)
Cellular phone—Dependence	5.63 (5.13, 6.14)	6 (5.00, 7.00)

Note: Cellular phone—Duration = the total duration of the calls made in one day; Cellular phone—Calls = the number of calls made in 1 day; Cellular phone—SMS = the number of SMSs sent monthly; Cellular phone—Dependence = dependence on the cellular phone on a scale from 1 to 10.

correlations (for the confidence interval of Kendall correlations, see Hollander & Wolfe, 1999). The results of the correlation analyses are reported in Table 2.

First, significant correlations appeared between dependence on the mobile phone and the Urgency (0.19) and lack of Perseverance (0.15) components of the UPPS Impulsive Behavior Scale. Concerning the other aspects of the questionnaire relating to cellular phone use, a significant positive correlation appeared between the lack of Perseverance component of the UPPS Impulsive Behavior Scale and the daily duration of calls (0.20), as well as the number of calls made in 1 day (0.15). However, there is no significant correlation between the cellular phone questionnaire and the other components of the UPPS Impulsive Behavior Scale. It is also interesting to note that perceived dependence strongly correlates with the different variables of the questionnaire relating to the use of the cellular phone, namely the duration of calls (0.36), the number of calls (0.36), and the number of SMSs (0.35). Thus, it would seem that perceived dependence is related to more frequent use of the cellular phone.

Psychological predictors of perceived dependence on and actual use of the mobile phone

A regression analysis was then performed in order to find out which dimension of impulsivity best predicts cellular phone dependence (see Table 3). Depression and anxiety were also entered in order to control for the possibility that the feeling of dependence on the cellular phone can be attributed to impulsive attitudes rather than to a depressive or anxious state. Exploration of the residuals suggested that they were normally distributed. Absolute *t*-values were used to determine the relative importance of each variable (Howell, 1998). Starting with the best predictor, the regression revealed the following order: Urgency, $t(101) = 3.09, p < 0.01$, lack of Perseverance, $t(101) = 2.07, p < 0.05$, depression, $t(101) = 0.82, p = 0.41$, lack of Premeditation, $t(101) = -0.81, p = 0.42$, Sensation Seeking, $t(101) = -1.39, p = 0.17$, and anxiety, $t(101) = -1.90, p = 0.06$. A regression analysis was then computed to explain the duration of the calls (see Table 4). Because this variable is highly skewed, we performed the regression on the natural logarithm of the duration. Exploration of the residuals suggested that they were normally distributed. Starting with the best predictor, the regression revealed the following order: Lack of Perseverance,

Table 2. Kendall correlations between questionnaires (within their 95% confidence interval)

	Duration	Calls	SMS	Dependence
Cellular phone—Duration	—			
Cellular phone—Calls	0.24[a] (0.09, 0.32)	—		
Cellular phone—SMS	0.28[a] (0.12, 0.38)	0.08 (−0.05, 0.19)	—	
Cellular phone—Dependence	0.36[a] (0.20, 0.43)	0.36[a] (0.20, 0.42)	0.35[a] (0.20, 0.44)	—
UPPS—Urgency	0.13 (0.00, 0.24)	0.05 (−0.08, 0.17)	0.07 (−0.07, 0.20)	0.19[a] (0.06, 0.30)
UPPS—lack of Premeditation	0.07 (−0.05, 0.18)	0.10 (−0.05, 0.22)	−0.02 (−0.14, 0.11)	0.03 (−0.10, 0.15)
UPPS—lack of Perseverance	0.20[a] (0.07, 0.29)	0.15[a] (0.00, 0.26)	0.10 (−0.03, 0.22)	0.15[a] (0.02, 0.25)
UPPS—Sensation Seeking	0.08 (−0.05, 0.20)	−0.01 (−0.14, 0.12)	0.13 (−0.01, 0.26)	−0.03 (−0.16, 0.11)
STAI-T	0.13 (−0.00, 0.25)	−0.05 (−0.16, 0.08)	0.02 (−0.12, 0.16)	0.03 (−0.11, 0.16)
BDI-2	0.12 (−0.02, 0.24)	−0.10 (−0.21, 0.04)	0.03 (−0.10, 0.16)	0.05 (−0.08, 0.18)

[a]0 not included in the 95% confidence interval.

Note: Cellular phone—Duration = the total duration of the calls made in 1 day; Cellular phone—Calls = the number of calls made in 1 day; Cellular phone—SMS = the number of SMSs sent monthly; Cellular phone—Dependence = dependence on the cellular phone on a scale from 1 to 10.

Table 3. Cellular phone dependence regressed on the UPPS Scale, the STAI-T and the BDI-2

Scale	B	SE	t	p-value	Beta
(Intercept)	3.50	1.82	1.92	0.06	—
UPPS—Urgency	0.16	0.05	3.09	<0.01	0.38[a]
UPPS—lack of Perseverance	0.13	0.06	2.07	<0.05	0.21[a]
BDI-2	0.03	0.04	0.82	0.41	0.11
UPPS—lack of Premeditation	−0.05	0.06	−0.81	0.42	−0.09
UPPS—Sensation Seeking	−0.06	0.04	−1.39	0.17	−0.14
STAI-T	−0.07	0.04	−1.90	0.06	−0.28

[a]0 not included in the 95% confidence interval.
Note: Predictors are listed in decreasing order of importance (based on absolute *t*-value).

Table 4. Duration of call (log) regressed on the UPPS Scale, the STAI-T and the BDI-2

Scale	B	SE	t	p-value	Beta
(Intercept)	0.75	0.73	1.03	0.31	—
UPPS—lack of Perseverance	0.06	0.02	2.41	<0.05	0.23[a]
UPPS—Urgency	0.02	0.02	0.87	0.39	0.08
UPPS—Sensation Seeking	0.01	0.02	0.61	0.55	0.06
BDI-2	0.01	0.02	0.55	0.58	0.04
STAI-T	0.00	0.01	0.21	0.83	0.08
UPPS—lack of Premeditation	−0.01	0.02	−0.40	0.69	−0.04

[a]0 not included in the 95% confidence interval.
Note: Predictors are listed in decreasing order of importance (based on absolute *t*-value).

$t(101) = 2.41$, $p < 0.05$, Urgency, $t(101) = 0.87$, $p = 0.39$, Sensation Seeking, $t(101) = 0.61$, $p = 0.55$, depression, $t(101) = 0.55$, $p = 0.58$, anxiety, $t(101) = 0.21$, $p = 0.83$, and lack of Premeditation, $t(101) = −0.40$, $p = 0.69$. When numbers of calls or SMSs were used as criteria in the regression, the assumption of normally distributed residuals was not supported, as plotting of the residuals against predicted values revealed extreme values or heterogeneous variances. Transforming the criterion with a function did not solve the problem. Consequently, these regressions are not reported.

Urgency and lack of Perseverance are the only components of impulsivity that significantly predict an increase in the feeling of dependence. It should be noted that anxiety and depression do not play a role in the feeling of dependence on mobile phones. In addition, we also found that lack of Perseverance was a significant predictor of the duration of calls.

DISCUSSION

The aim of this study was to identify which facets of impulsivity are associated with actual self-reported use (number and duration of calls, number of SMSs sent) and perceived dependence on the mobile phone in a sample of female undergraduates. The main results of the study may be summarised as follows. Firstly, correlation analysis revealed that (1) Urgency is positively correlated with perceived dependence on the cellular phone, and

that (2) lack of Perseverance is positively correlated with the duration and the number of calls made per day, as well as with the perceived dependence on the cellular phone. Secondly, a regression analysis showed that Urgency was the most important predictor of perceived dependence, followed by lack of Perseverance. In addition, lack of Perseverance was also the strongest predictor of the daily duration of calls. Moreover, regression analysis also revealed that these facets of impulsivity were significant predictors even when anxiety and depression were controlled for.

According to Whiteside and Lynam (2001), Urgency refers to the tendency to feel strong impulses, usually in a context of negative affect (examples of Urgency items of the UPPS Impulsive Behavior Scale: 'I have trouble controlling my impulses'; 'When I feel bad, I will often do things I later regret in order to make myself feel better now'; 'Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse'). Bechara and Van der Linden (2005), who wanted to examine the cognitive mechanisms underlying Urgency, tentatively suggested that this component of impulsivity may be related to the ability to deliberately suppress dominant, automatic, or prepotent responses. Thus, it could be hypothesised that poor response inhibition capacities may be related to a high-Urgency level. From this perspective, Urgency, as defined by Whiteside and Lynam (2001), has also been associated with alcohol abuse (Whiteside & Lynam, 2003). In Whiteside and Lynam's view, alcoholics have more difficulties resisting strong impulses, which results in harmful behaviours that relieve negative affect in the short-term but have detrimental long-term consequences. Thus, inhibition difficulties are supposed to be related to alcoholics' inability to prevent themselves from drinking. In the same vein, it may be hypothesised that individuals who have a high level of Urgency will have problems deferring their use of the cellular phone, especially in a condition of negative affect. In other words, high-Urgency people would tend to use their cellular phones more often and with a greater feeling of dependence, because they feel compelled to provide for their needs as soon as possible. Consequently, this tendency will probably increase the likelihood of illegal (e.g. phoning in restaurants or libraries) or dangerous (e.g. phoning while driving a car or phoning without thinking about the future costs) use of the mobile phone.

The second predictor of cellular phone dependence and use is lack of Perseverance, which was defined by Whiteside and Lynam (2001) as the ability to remain concentrated on a tedious or difficult task (examples of Perseverance items of the UPPS Impulsive Behavior Scale: 'Once I get going on something I hate to stop'; 'I concentrate easily'; 'I finish what I start'). Bechara and Van der Linden (2005) hypothesised that Perseverance is closely related to resistance to proactive interference, which refers to the ability to resist memory intrusions by information that was previously relevant to the task but has since become irrelevant (Friedman & Miyake, 2004). Thus, low Perseverance may result in more difficulties inhibiting irrelevant thoughts or memories. In the case of mobile phones, it could tentatively be supposed that certain people find that using a mobile phone can help them rid themselves of irrelevant thoughts (e.g. thoughts relating to a recent dispute with a friend, thoughts concerning the consequences of the morning seminar), which may result in more frequent use. This assumption may be supported by the positive relationship between lack of Perseverance and greater actual use of the mobile phone (number and duration of calls). In addition, lack of Perseverance was also a significant predictor of the daily duration of calls, implying that females with low Perseverance spent more time speaking on their mobile phones. This result could also be hypothesised to be related to the occurrence of irrelevant thoughts or memories. Indeed, irrelevant thoughts may lead to much longer calls because they could provide new subjects of discussion.

To sum up, we hypothesised that Urgency may increase perceived dependence because mobile phone use could be a way of satisfying certain strong impulses with the aim of relieving negative affect in the short term. In addition, low Perseverance may enhance the actual use of mobile phones because irrelevant thoughts or memories increase the potential occasions to use one.

It is also important to emphasise that depression and anxiety are not related to perceived dependence and actual use of the mobile phone. Concerning depression, the absence of a relationship is not very surprising as depressed people frequently tend to be socially isolated (Joiner, 1997) and thus are less likely to use mobile phones. However, the absence of any causal effect of anxiety on dependence is more surprising because the mobile phone could be considered as a tool for reassuring oneself in specific situations (e.g. parents who want to know where their child is). Thus, it is possible that the absence of a relationship between anxiety and perceived dependence is due to the fact that participants in the study are undergraduate psychology students. Indeed, a study of adults with children might have found that high anxiety did have an effect on perceived dependence. In addition, it might be supposed that being reachable at any time and place may represent a potential stressor for anxious persons, and consequently they might be reluctant to use mobile phones.

Further studies are required to explore more systematically the assumptions arising from the results obtained here. Indeed, the cognitive mechanisms related to Urgency and Perseverance should be investigated by administering specific cognitive tasks, such as prepotent response inhibition (e.g. antisaccade task) and resistance to proactive interference tasks (e.g. Brown–Peterson task). Moreover, studies will have to be carried out with validated mobile phone use questionnaires, such as the Mobile Phone Problem Usage Scale (MPPUS, Bianchi & Phillips, 2005) or the Cellular Phone Dependence Questionnaire (CPDQ, Toda, Monden, Kubo, & Morimoto, 2004). Another important point to consider is that our study focuses on mobile phone use by females. It has been suggested that psychological processes (e.g. motivational aspects) related to mobile phone use may differ according to gender. For example, a study carried out by Potts (2004) emphasised that females are more likely than males to use cell phones to maintain social contact, whereas men have a stronger tendency to adopt new possibilities provided by mobile telephony (e.g. Internet features). Thus, further studies are needed in order to analyse gender differences in mobile phone utilisation. Moreover, further research should focus on other measures than self-assessment questionnaires, which have been shown to be often flawed in substantive and systematic ways (Dunning, Heath, & Suls, 2004). Specifically concerning the reliability of self-reports of drug use and addiction, a recent study (Matt et al., 2003) pointed out that numeric estimates of drug use showed fuzzy set properties; participants recalled ranges of admissible estimates rather than singular point estimates. From this perspective, considering the mobile phone on the spectrum of behavioural (Marks, 1990) or technological (Griffiths, 1999) addictions, it is highly possible that the participants in the present study use mobile phones more than they reported on the questionnaire. Thus, future studies should consider the possibility of measuring actual mobile phone use with diaries in which participants can record their mobile phone use each day. From a statistical point of view, the advantage of the diary is that it also makes it possible to count the number of calls and SMSs during a certain period of time, allowing researchers to use appropriate regressions to predict these count variables (Generalised Linear Model for Poisson distribution).

This study must be considered as a first step in understanding the psychological predictors of possible dependence on the mobile phone. To conclude, it is important to keep

in mind the fact that, in our society, the cellular phone has become a primary instrument driving young, new consumers into debt, a phenomenon that could be dangerous and should not be neglected.

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APPENDIX 1

Questionnaire relating to cellular phone use

1) Do you own a cellular phone? ☐ Yes ☐No
   If you have a portable phone, please answer the next questions.
2) On average, how long do you use your portable telephone per day: _____ hour(s) _____ minute(s)
3) On average, how many calls do you make in one day: _____
4) On average, how many SMSs do you write per day: _____ SMSs
5) Evaluate your level of dependence on your cellular phone by putting an X in the scale below, keeping in mind that the larger the percentage, the higher the level of dependence:

0% ☐☐☐☐☐☐☐☐☐ 100%

Note: English translation by the first author of the original French version of the questionnaire used in the study. The original French version of the questionnaire is available upon request from the first author.