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: An exploratory study of social surrogacy

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The importance of social interaction for health and well-being

As social beings, we have a strong need to belong, and feel accepted by and connected to others. Only physiological needs and safety (i.e. food and shelter) exceed the importance of social inclusion (Maslow, 1954). Among the consequences of unmet needs are feelings of social isolation and loneliness (Cacioppo & Patrick, 2011). The impact of social isolation on our health is comparable to that of high blood pressure, sedentary lifestyle, obesity, or smoking (House, Landis, & Umberson, 1988).

The ideal way to fulfil social needs is through frequent positive social interactions (Baumeister & Leary, 1995), but there are indirect methods that can at least temporarily satisfy the need for belonging. People resort to these indirect methods when they are momentarily isolated from their sources of social support in a similar way to having a snack when hungry and unable to have a proper meal right away (Gardner, Pickett, & Knowles, 2005). As "social snacks", some people use symbolic reminders of being connected and accepted such as photos of loved ones, a wedding ring, or a scribbled picture from a child, but also seemingly neutral objects may become successfully associated with real relationship partners like chicken soup for instance (Troisi & Gabriel, 2011). Those substitutes for direct personal interaction are called social surrogates and a number of media have been proposed to potentially serve this function: beloved books, TV programs, movies, interactive video games, and music (Pinker, 1997). As people are drawn to familiar music, movies, and other media when feeling lonely (Derrick et al.,

2009) the engagement with media for social reasons has gained some attention in the past years. So far, it has been shown that the engagement with TV programs and books can provide a sense of belonging (Derrick et al., 2009, Gabriel & Young, 2011). In the following, we will give an overview of the mechanisms of social surrogacy that have been proposed in different domains.

How narratives, TV programs, and symbols act as social surrogates

Preceding research has shown that favorite books (Gabriel & Young, 2011) as well as TV programs (Derrick et al., 2009) can temporarily provide a sense of belonging. However, the authors put forward diverse ways in which different media are thought to replenish feelings of belonging. Gabriel & Young (2011), for instance, propose that readers connect to symbolic groups in other social worlds by identifying themselves with their favorite characters. Through this imaginative process they forget their role as reader and adopt the perspective of a character (Cohen, 2006). By adopting the character's perspective, they affiliate themselves with the group which the character belongs to which can temporarily fulfill their need to belong (Gabriel & Young, 2011).

Another social surrogacy tactic was identified in the domain of television research (Derrick et al., 2009). It was observed that viewers get attached to their favorite characters over time. These so-called parasocial relationships with media characters feel psychologically real and meaningful even though people consciously know that they are not real relationships (Gardner et al., 2005). Despite the lack of reciprocity, parasocial interaction seems to enable lonely individuals to feel a sense of belonging (Greenwood & Long, 2009). As non-reciprocal parasocial relationships present little to no threat of rejection, they offer a safe context for feeling connected to others, especially for individuals with low self-esteem or anxious attachment styles

(Derrick, Gabriel, & Tippin, 2008).

In addition to symbolic group affiliation and parasocial attachment, a third way of social surrogacy was identified: reminders of real social bonds. Symbolic representations of real relationships are for instance family photos, children's drawings, or souvenirs from holidays that have been demonstrated to replenish feelings of belonging at least temporarily (Gardner, 2001).

Social benefits of music making

Engagement with music can provide different social benefits. The positive effects of creative musical activities like singing or playing an instrument in a group have been studied relatively extensively (for an overview see Koelsch, 2013). From empirical investigations we know, for instance, that choral singing enhances the notion of social support and reduces feelings of isolation (Clift, Morrison, Hess, Kreutz, & Stewart, 2010). Playing an instrument can bring people together in a similar way. It has been shown that playing in a group increases social cohesion (Spychiger, Patry, Lauper, & Zimmermann, 1993) and facilitates group work (Harland et al., 2000).

Music listening and social needs

While social benefits of musical group activities have repeatedly been reported, the influence of a much more common activity, music listening, on social needs has been addressed rather scarcely (e.g. Groarke & Hogan, 2015). However, different functions of music listening have been identified previously. Among them are mood regulation, construction and expression of social identities (Zillmann & Gan, 1997), and coping with daily hassles (for an overview see Schäfer, Sedlmeier, Städtler, & Huron, 2013). Most of those functions that address social aspects

relate to group listening experiences such as attending a live concert. Listening to music with other people, for instance, induces feelings of togetherness (Batt-Rawden, DeNora, & Ruud, 2005), and enhances group cohesion (Boer & Abubakar, 2014). The social surrogacy hypothesis claims that one can even derive social benefits from listening to music just by oneself. Subsequently, the approach from the perspective of social surrogacy aims at investigating how solitary listening is linked with loneliness. There are hints from empirical research that suggest a relationship between feeling lonely and engaging with familiar tunes. First, listening to preferred melodies is one of the most common activities when feeling lonely (Derrick et al., 2009). Second, reducing loneliness is a major reason for engaging with music among chronic pain sufferers (Mitchell, MacDonald, Knussen, & Serpell, 2007) and older adults (Groarke & Hogan, 2016). Third, adolescents cope with loneliness for instance by listening to songs whose lyrics apply to their lives (Lippman & Greenwood, 2012; Zillmann & Gan, 1997). Fourth, lyrics of nostalgic songs have been shown to promote social connectedness, thereby increasing self-esteem and optimism (Cheung et al., 2013).

Despite the evidence for a link between loneliness and listening behavior, this relation has not yet been investigated. Therefore, the aim of this study was to identify the ways in which people turn towards music to satisfy their needs for belonging, inclusion, and intimacy. The main questions that the investigation presented here tries to answer are: Is music used as a temporary substitute for social interaction? If so, is it used in similar ways to TV, movies, or literary fiction? In order to answer these questions, statements about possible social motives for media involvement were compiled and adjusted to three different domains: literary fiction, television and movies, and music. These statements were based on previous research about the functions of music (Schäfer et al., 2013) and social surrogacy (Derrick et al., 2009; Gabriel & Young, 2011;

Gardner et al., 2005). After participants rated their agreement with these statements, they were grouped into broader facets of social surrogacy through exploratory factor analyses.

Method

Participants

Participants were recruited through advertisements in social media that sought volunteers from Northern Europe with EFL to a study about motivation for engaging with different media. They could win a €40 gift voucher as compensation. In total, 374 participants aged between 18 and 62 years completed the survey (see Table 1).

Most of the participants were students (58%), 13% upper-level employees, 8% lower-level employees, 5% self-employed, and 16% had other occupations. Accordingly, the level of education was relatively high. Forty-three percent of the sample had completed higher tertiary, 29% lower tertiary, 17% secondary, 6% doctoral and 1% primary education. Half of the sample (50%) was Nordic. Another 31% percent came from other European countries, and 8% from Non-European Western countries. Most of the participants (64%) were living in Finland at the time of the investigation. About half of the subjects (48%) described themselves as music-loving non-musicians, 21% as amateur musicians, 14% as non-musicians, 9% as serious amateurs, 5% as semi-professional, and 3% as professional musicians.

<INSERT TABLE 1 ABOUT HERE>

Materials

To assess social reasons for engaging with different media a questionnaire was designed.

First, possible mechanisms through which media could fulfill the need to belong were carved out

from previous research in different areas through an extensive literature research. Broad

overviews (Cohen, 2006; Gardner et al., 2005) as well as empirical reports from different

research domains such as literature, TV, or emotion regulation (Derrick et al., 2008; Mar &

Oatley, 2008; Saarikallio & Erkkilä, 2007) built the basis of the thematic analysis. The following

three categories were identified: group affiliation, parasocial relationships or virtual company,

and representation of a real relationship partner. Several face-valid items representing these

categories were compiled and complemented by sentences describing isolation through

engagement with media in order to include the opposite of social connection. Additionally,

statements related to belonging from a comprehensive study about the functions of music by

Schäfer and his colleagues (2013) were added that also served as a model for the format of the

statements. The items all began with "I listen to music…" ("I watch TV/movies…" or "I read

fiction…" respectively) and continued for instance with, "Because it tells me how other people

think". Thirty items in total were generated for music listening (see Table 2).

Second, these items were adjusted to the other two domains (television/movies, and literary

fiction) in order to create a fitting set of questions for each domain of study. When adapted to

watching TV or movies, the incompatible item 28 (see Table 2) was eliminated. When adjusting

the remaining 29 items to literary fiction, item 30 (see Table 3) was omitted as it does not apply

to reading. The items of the three questionnaires were randomized within the sets of questions.

Psychometric Instruments. Attachment style was assessed using the Attachment Scale

(Bartholomew & Horowitz, 1991) since it is known to be linked with the strength of parasocial

attachment (Cole & Leets, 1999) and it might also influence other forms of social surrogacy. It is

a forced-choice instrument in which four styles of attachment (secure, dismissive, preoccupied, and fearful) are described in brief paragraphs. Thirty-four percent of the sample indicated a fearful, 29% a secure, 23% a dismissive, and 14% a preoccupied attachment style.

Moreover, it has been shown that people with a high need to belong experience more loneliness (Mellor, Stokes, Firth, Hayashi, & Cummins, 2008) and develop stronger parasocial relationships with media figures (Gardner et al., 2005; Greenwood & Long, 2009). In order to control for those interindividual differences, the Need to Belong Scale was applied (Leary, Kelly, Cottrell, & Schreindorfer, 2013). It consists of 10 items that measure the degree of the respondents' desire to be accepted by other people, seek opportunities to belong to social groups, and negative reactions to rejection or ostracism. In our sample, the need to belong varied according to the participants' gender with women indicating a higher need to belong than men (see Table 1).

Procedure

The survey consisted of two parts. The first part assessed the participants' social reasons for engaging with different media while the second part comprised the instruments of personality assessment described above. In the first part, individuals were presented with the three questionnaires about social reasons for engaging with music, TV, and literary fiction described above. The participants were asked to rate their agreement with each statement on a 5-point Likert scale between *I strongly disagree* (1) and *I strongly agree* (5). The second part of the survey aimed to capture demographics and individual differences in attachment style and the need to belong.

Analysis

Five participants who indicated not to understand the questionnaire well but answered nevertheless were discarded. Two more subjects had to be excluded because they answered the same to every question. Further, the answers of all remaining participants (*N*=367) were correlated with each other in order to discover participants with random answers. Participants obtaining correlations smaller than *r*=0.05 were discarded (*N*=21) so that the sample taken to analysis comprised 348 individuals. In order to explore the structure of the statements from the questionnaires, Exploratory Factor Analyses were conducted separately for each domain. This kind of analysis reduces the amount of data by grouping variables together that overlap on the basis of correlations between the participants' ratings.

The same steps were conducted for the analyses of all three questionnaires. First, the factorability of the items was evaluated in terms of sampling adequacy through the Kaiser-Meyer-Olkin measure. Second, parallel analysis, which is one of the most robust methods (Zwick & Velicer, 1986), was utilized to find the optimal number of factors to extract. Third an Exploratory Factor Analysis (EFA) with promax rotation was conducted in all three domains to increase the interpretability of the loadings and allow the comparability between media.

Results

Facets of social surrogacy for listening to music

The Kaiser-Meyer-Olkin measure verified an excellent sampling adequacy (*KMO*=0.90) and parallel analysis suggested to extract seven factors. The resulting model explained 50% of the variance and obtained a good fit to the data (*RMSR*=0.03). Table 2 shows the full breakdown of the items and the loadings. The factors were labeled as follows: (a) *Comforting Company*

(items 1, 6, & 7), (b) *Reminiscence* (items 2, 3, 4, & 5), (c) *Shared experiences* (items 8, 9, 13, 14, 22, & 26), (d) *Isolation* (items 27, 28, & 29), (e) *Understanding Others* (items 11, 12, 23, 24, & 25), (f) *Culture* (items 19, 20, & 21), and (g) *Group Identity* (items 10, 15, 16, 17, & 18). The factor structure is illustrated in Figure 1.

<INSERT TABLE 2 AND FIGURE 1 ABOUT HERE >

In order to investigate the importance of those facets, the mean rating for each factor was computed (see Table 6). *Comforting Company*, *Reminiscence*, *Shared experiences* and *Isolation* were the most important aspects of social connectedness for music listening, while *Group Identity* and *Culture* did not appear essential. The importance of *Understanding* was in between these groups of facets.

Facets of social surrogacy for watching TV/movies

The Kaiser-Meyer-Olkin measure of sampling adequacy again yielded excellent factorability (0.91) of the 29 statements. The parallel analysis proposed to extract six factors which explained 51% of the variance and fitted the data (*RMSR*=0.03, see Table 3). The factors were labeled as follows: (a) *Comforting Company* (items 1, 6, & 7)*,* (b) *Understanding and Shared Experiences* (items 8, 9, 11, 14, 23, 24, & 25), (c) *Isolation* (items 27 & 28), (d) *Reminiscence* (items 2, 3, 4, 5, 13, & 26*)*, (e) *Culture* (items 19, 20, & 21)*,* and (f) *Group Identity* (items 10, 12, 15, 16, 17, & 18).

Comforting Company got the highest mean ratings whereas *Isolation* and *Reminiscence* were not deemed to be important (see Table 6). The importance of *Culture* and *Group identity*

also seemed rather low. *Understanding and Shared Experiences* received values in between the

highest and the lower ratings.

<INSERT TABLE 3 ABOUT HERE>

Facets of social surrogacy for reading fiction

Again, the Kaiser-Meyer-Olkin measure yielded a positive result (0.93) and the parallel

analysis suggested to extract six factors (see Table 4). This model had a very good fit

(*RMSR*=0.03) and explained more than half of the variance (59%) in the data. The factors have

been labeled as follows: (a) *Understanding others* (items 11, 23, 24, & 25), (b) *Shared*

Experiences (items 8, 9, 13, 14, 15, & 22), (c) *Isolating Company* (items 1, 6, 7, 27, & 28), (d)

Group Identity (items 10, 12, 16, 17, & 18), (e) *Reminiscence* (items 2, 3, 4, 5, & 26), and (f)

Culture (items 19, 20 & 21).

The computation of the mean ratings revealed that *Understanding Others*, *Shared*

Experiences, and *Isolating Company* were the most important categories of social connectedness

for reading fiction (see Table 6). *Reminiscence*, *Group identity*, and *Culture* seemed to be less

important facets.

<INSERT TABLE 4 ABOUT HERE >

Individual differences

To test for individual differences, the factor scores were submitted to ANCOVAs with age,

gender, education (six categories), occupation (seven categories), attachment style (four

categories), musical expertise (continuous variable), need to belong (continuous variable) and the amount of media consumption as covariates (results are summarized in Table 5). The amount of media consumption was classified as high or low according to the number of hours of music, TV, or fiction consumption respectively. For this purpose, the sample was divided in halves via median split.

In the musical domain, a higher need to belong was associated with higher factor scores for *Comforting Company*, *Reminiscence*, *Shared experiences*, *Understanding others*, *Culture*, and *Group Identity*. A higher amount of music consumption was connected with higher scores on the factors *Comforting Company,* and *Isolation.* Women obtained higher scores than men in the factors *Comforting Company, Reminiscence,* and *Shared experiences, Isolation,* and *Culture.* A lower age was associated with higher factor scores for *Comforting Company, Shared experiences, and Culture.* Further, participants with more musical expertise yielded higher factor scores for *Comforting Company* and *Understanding others.*

<INSERT TABLE 5 ABOUT HERE>

Regarding the facets of social surrogacy for watching TV and movies, the patterns exhibited by the individual differences across the factors mainly mirror those obtained in the case of music with a few exceptions.

In the domain of literary fiction, the individual factor scores varied in a similar way as in the other two domains. The need to belong influenced all factor scores. Age and amount of fiction consumption showed similar influence in most respects as engaging with TV or music. The chief difference regarded gender that only affected *Group Identity* and therefore was less

influential in the domain of fiction.

Comparison of the facets of social surrogacy for engaging with music, TV, and literary fiction

Comparing the results of the different domains, striking similarities became apparent (see Figure 2). First, a similar number of factors (seven for music, six for TV and literature) explain a similar amount of variance (~50%) in each domain. Second, the factor *Culture* comprises the same items in all three domains (items 19, 20, and 21). However, connecting to one's own culture does not seem to be as important a facet of social connectedness to media as the other categories (see Table 6).

<INSERT TABLE 6 ABOUT HERE >

Regarding the other factors, we found similarities and differences in the items they comprised and in the importance of the facet in the different domains. *Company* was the most important category for listening to music and watching TV. For literary fiction, *Company* was only the third most important factor. The three common items are "It can make me feel less lonely", "It keeps me company", and "It comforts me when I'm sad". Hence, company is associated with comfort in all domains.

Reminiscence was the second most important facet of social connectedness for listening to music but seems less important in the other two domains. The common items among all three domains were "It reminds me of a particular person", "It reminds me of certain periods of my life

or past experiences", "It helps me reminisce", and "It reminds me of the people that I used to listen to the music/watch TV/talk about the book with".

Feeling understood was the third most important category for music listening and the second most relevant facet for reading fiction. For watching TV and movies, *Feeling understood* was the second most important category together with items from the factor *Understanding others*. Three items about identification, shared emotions and experiences (items 8, 9, and 14) overlap in all three domains. For music, the lyrics seemed to play an important role, as *Feeling understood* also comprised items 13 and 22 in addition to the three shared ones. The same two items also load on the factor *Feeling understood* in the domain of literary fiction, where "lyrics" was replaced by "plot".

Isolating oneself was the third most important category of engagement with literature. The shared items were "I want to isolate myself from my surroundings." and "I don't want to talk to anybody.". Interestingly, those were combined with the three main items of the factor *Company* (1, 6, and 7) in the literary domain. Literary fiction seems to provide company and isolation from the surroundings at the same time. For music listening, *Isolation* played a minor role and it seemed to be even less important for engaging with TV or movies.

To understand other peoples' thoughts, feelings, and behavior was the main aspect of social surrogacy for reading literary fiction. Further, *Understanding others* was the second most important facet for watching TV or movies, but it seems less important for music listening.

The facet of *Group Identity* that described the connection to a group of fans was not deemed to be important in any domain.

<INSERT FIGURE 2 ABOUT HERE >

Discussion

The survey about social reasons for engaging with music, TV, and literary fiction aimed to clarify how these media are used as social surrogates. Thirty statements about different facets of social connectedness with media were compiled and adjusted to music, movies, and fiction. The statements can be classified under seven categories: *Company, Shared experiences, Understanding others, Reminiscence, Isolation, Group identity*, and *Culture*. These facets overlap across the three domains, but there were differences in the importance and content within the seven categories that are discussed in thematic order.

Company

This factor comprised general statements about seeking company and feeling less lonely in all three domains and can therefore be seen as a sort of umbrella category. As this set of items has a prominent position in all three domains (see Table 6), social connection seems to be an important reason for engaging with movies, fiction, and music in general. This finding is in line with research that demonstrates how narratives or TV programs temporarily fulfill belongingness needs (Derrick et al., 2009; Gabriel & Young, 2011). Regarding music, the result fits in with the notion that reducing loneliness is a motive for music listening among adolescents (Lippman & Greenwood, 2012) and older adults (Groarke & Hogan, 2016). This result encourages further study, because it clearly demonstrates for the first time that music actually serves as a social surrogate. Hence, the data suggest a positive answer to the main research question: Yes, music is used as a temporary substitute for social interaction.

Comfort

Additionally, the category *Company* comprised a statement about comfort in all three media. Hence, music, fiction and TV programs may not only help to cope with loneliness but also offer solace. For music, this comforting function has been previously reported, for instance in the context of emotion regulation (Hanser, Ter Bogt, Van Den Tol, Mark, & Vingerhoets, 2016; Saarikallio & Erkkilä, 2007). Lee and colleagues (2013) have proposed that music might provide comfort by validating negative emotions in a similar way like an empathic friend when it resonates with the emotions of the listener.

Shared experiences

This facet of social surrogacy was also deemed important across all three domains, although it seems relatively more important for listening to music and reading fiction compared to watching TV (see Table 6). It is composed of statements that can be grouped into two main categories: a) emotional communion, and b) identification.

a) Emotional communion: This subcategory describes the aspect of media conveying the notion that someone else feels similar and therefore one is not alone with one's emotions. By expressing an emotional state an artist or performer shares it with its audience. Emotional sharing is something that also happens regularly in relationships, for instance with friends, which might contribute to the notion of media persona as friends (Kanazawa, 2002). Since parasocial relationships with mediated characters can be experienced as friendships, this facet bears a certain similarity with parasocial attachment (see introduction).

b) Identification: The statement about identification with musicians, actors, or characters

was common to all three domains and complemented by identification with lyrics or a plot in the

musical and fictional domain respectively. In literature, identification has been linked with

affiliation to a symbolic group, which fulfills the need to belong, at least temporarily (Gabriel &

Young, 2011). A similar mechanism has been proposed in TV research, where the identification

with a character leads to emotional absorption that provides an opportunity for social connection

with the characters of the narrative (Greenwood & Long, 2009). It is conceivable that music

provides a similar opportunity for affiliation through identification and that lyrics serve as a sort

of narrative through which listeners identify themselves with the artist (see also Hargreaves,

MacDonald, & Miell, 2012).

Understanding others

This category represents the most important social facet for reading fiction, but also plays a

major role in watching TV (see Table 6). The common statements include the understanding of

other peoples' thoughts and behaviors. Hence, literary fiction or movies provide insights into the

motives and feelings of other people. This finding is in line with previous research showing that

reading literary fiction in comparison to non-fiction augments one's ability to detect and

understand others' emotional reactions (Kidd & Castano, 2013). Furthermore, reading fiction is

associated with a better understanding of others' mental states and a higher level of empathy

(Mumper & Gerrig, 2017).

Reminiscence

This category contains statements that describe media as reminders of certain people or

events that one associates with a specific media experience. *Reminiscence* was mentioned as the

second most important facet of social connectedness through music but it did not seem essential

in the other two domains (see Table 6). This is in line with previous research stating that

musically supported reminiscence is vital for the well-being of adults of all ages (Groarke &

Hogan, 2016). Those reflective processes supported by music are important, because they are

conducive to the construction of self-identity (Saarikallio, 2010) and convey a sense of belonging

by bringing back memories of significant others (DeNora, 1999; Groarke & Hogan, 2016).

Besides that, remembering foregone times often brings back nostalgic feelings, a process Juslin

and Västfjäll (2008) referred to as "episodic memory". Therefore, *Reminiscence* is strongly

associated with music's ability to evoke nostalgia (Barrett et al., 2010) that can render

knowledge about positive social relations accessible (Wildschut, Sedikides, Arndt, & Routledge,

2006) which in turn can replenish feelings of belonging (Twenge et al., 2007). This possible

mechanism for social surrogacy through music is in line with previous research showing that

nostalgia can strengthen social connectedness (Wildschut, Sedikides, Routledge, Arndt, &

Cordaro, 2010) and increases perceived social support (Zhou, Sedikides, Wildschut, & Gao,

2008). Hence, inducing nostalgia through music listening is another means of achieving social

connectedness. With its clear retrospective focus, this category is similar to social surrogacy

through symbolic representations of real social bonds described in the introduction (Gardner et

al., 2005).

Isolation, Culture, and Group Identity

Three categories that were not deemed particularly important overall were *Isolation*,

Culture, and *Group Identity*. *Isolation* was mentioned as the third most important facet of

reading fiction and watching movies. In the musical domain, it constituted the fourth most

important facet (see Table 6). While watching TV or listening to music, one is shielded from

one's surroundings in a way that stimuli from the environment can be ignored more easily

(Skånland, 2013). If music, movies, or audiobooks are consumed in public via headphones they

allow to mask noise and create a sort of private space in close proximity to strangers (Sloboda,

Lamont, & Greasley, 2009). In the domain of literary fiction, the statements of *Isolation* and

Company merge into one category. This combination might seem paradoxical on first sight, but

makes sense in practice. It is well imaginable that someone immerses into a story in order to

separate from the current situation and connects to the character(s) of the narrative at the same

time. Hence, books seem to attract readers because they allow one to isolate oneself from one's

surroundings and provide company at the same time.

The factor *Culture* refers to one's connection with one's own culture that artefacts such as

music, movies, or books might offer their audiences. It did not seem important in our survey

though, as *Culture* and *Group Identity* got the lowest ratings in all three domains.

The statements that we subsumed under *Group identity* describe identification with a

subculture, belonging to a group of fans, and having an artist as a role model. This aspect of

music listening can also support identity formation (DeNora, 1999). However, as it did not seem

to be particularly important to our sample for any of the studied domains, it will not be discussed

further here.

Individual differences

Almost all the categories in all three domains were influenced by individual differences in

the need to belong (see Table 5 for details). Participants with a greater desire for social

connection obtained higher scores meaning that they are more likely to use all three kinds of

media to satisfy their social needs. This result corresponds with our expectations and

corroborates the relation of the extracted factors with social needs. Furthermore, this finding is in

line with previous research documenting a positive correlation between the need to belong and

symbolic social behaviors (Gardner et al., 2005).

Gender influenced the ratings in the way that women yielded higher scores in many

categories on average. This effect might be partly explainable by the observed gender difference

in affiliative tendencies where women reported a stronger need to belong than men (see Table 1).

This could be related to the notion that women are more relationally oriented than men, who put

emphasis on larger spheres of social relationships (see Baumeister & Sommer, 1997; Gabriel &

Gardner, 1999).

Regarding the average amount of hours that participants spent listening to music, watching

TV, or reading fiction, more media consumption was associated with higher individual factor

scores in most of the categories. It means that people who spend more time engaging with media

in general also use them more often to satisfy their need for connection or intimacy. This is in

line with the observation that chronically lonely individuals are more likely to use media than

people whose social needs are satisfied (Perse & Rubin, 1990). As the analysis is based on the

data from one pool of participants, all individual differences could reflect the diversity within the

sample in question.

Limitations

As true of every self-report study, this investigation is limited by the introspective and

reflective abilities of the participants. We asked people about their motivation to engage with

different media, but we are aware that the reasons for choosing a certain medium are not always

conscious. Nevertheless, there is a good chance that people become aware of their motivation when asked for it in a direct way. One way to mitigate these potential issues would be to approach the topic via experience sampling method. Further, the generalizability of the results is limited by the sampling method. For instance, in the present sample the securely attached are underrepresented while the anxiously attached are overrepresented compared to a representative sample (Mickelson, Kessler, & Shaver, 1997). This distribution is not surprising given that anxiously attached individuals tend to develop relatively strong parasocial relationships with media characters (Cole & Leets, 1999) and therefore might have been more attracted by the topic of the survey. Furthermore, a convenience sample such as the one obtained in this study recruited over social media and the internet has other drawbacks, such as being more highly educated than the general population, being interested in technology, and being drawn from a particularly constrained pool of nationalities (Chandler & Shapiro, 2016).

Conclusions and Future Studies

To summarize the results, seeking company and comfort as well as shared experiences were the most important categories of engagement with media of all three domains. Getting a better understanding of other people and the world was identified as a major reason for reading fiction and watching TV or movies. Further, being reminded of certain people or periods of one's life was an essential facet of social connection through music, but not TV or fiction. Participants also reported the isolating effect as important aspect of engaging with media of any of the three domains. The other categories played a minor role.

As mechanisms through which music might be able to temporarily satisfy the need for social connection or intimacy, the data propose the identification with a musician and the

elicitation of nostalgia. Furthermore, there are hints in the data that music might provide social support by resonating with the listener's experiences or emotions.

Regarding TV and movies, our data fit in with the previously reported means of social surrogacy e.g. through attachment or identification with a media character (Derrick et al., 2009; D. N. Greenwood & Long, 2009). In the domain of literary fiction, social surrogacy through identification with a character as proposed previously (Gabriel & Young, 2011) also played a major role. In general, there are some links to existing frameworks, such as emotion induction mechanisms (Juslin & Västfjäll, 2008), concerning reminiscence and episodic memories. Further, mood regulation is addressed in terms of solace (Saarikallio & Erkkilä, 2007). We also link the findings with previously reported functions of music listening such as constructing social identity (DeNora, 1999) or alleviating loneliness (Groarke & Hogan, 2016).

This broad investigation was designed to explore if and how music might be used as temporary substitute for social interaction. At the same time, we obtained an overview of the possible ways in which TV programs, movies, and literary fiction provide a sense of belonging. Expanding and consolidating the findings obtained with these sets of questions using a sample constructed in another fashion would allow confirming the observed similarities and differences. However, perhaps the most obvious way to move forward is to design experiments to investigate these identified facets of social surrogacy. To date, there have been few empirical studies in the domain of literary fiction and TV, but social surrogacy through music has not yet been explored at all. As our results suggest that solitary music listening is used to temporarily satisfy social needs, it should be included in the investigation of underlying surrogacy mechanisms. Since various aspects of social connectedness were assigned different degrees of importance for the three media, one would expect that people use particular media for specific aspects of social

support. Music for instance seems to be particularly powerful in evoking nostalgic memories. Hence, when people want to connect with a specific person through memories they might rather turn to musical devices instead of TV or books that might be favored when connection with the characters of a specific story world is wanted. The empirical testing of those conclusions is yet to come.

Further, it is not very well understood how this engagement with media for social reasons affects our well-being. Previous research on the relationship between loneliness and media usage paints a rather unclear picture (Davis & Kraus, 1989; D. N. Greenwood & Long, 2009). There is evidence for a compensatory as well as for a complementary use of TV watching, for instance (D. N. Greenwood & Long, 2009). So, whether the use of media as social surrogates is healthy or not is still under debate. Relationships with virtual characters certainly cannot completely replace social interaction in real life, but they might be able to serve certain psychological functions such as emotion validation. Therefore, future research should systematically investigate under which circumstances what kind of media are beneficial for whom.

Although the use of music in promoting well-being has become an increasingly popular topic (e.g. MacDonald, Kreutz, & Mitchell, 2012; Perkins & Williamon, 2013), the majority of the work on music and well-being focuses on active music making and the role of the most common means of engaging with music, namely listening, has been rarely investigated (Laukka, 2007). The observations from the current study encourage further research towards this direction since listening to music may – at least temporarily – provide us with a sense of belonging and intimacy that we, as social beings, need to thrive in this world.

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Table 1. Sample characteristics

	Total	Male	Female	Test for gender differences
Number	374	159 (43%)	220 (57%)	-
Age in years	28.2 (7.93)	28.7 (8.09)	27.8 (7.79)	$t(367) = 0.98$, $p = 0.33$
Need to belong	3.04 (0.62)	2.83 (0.62)	3.19 (0.58)	$t(367) = -5.72$, $p < 0.001$

Note: Data are displayed as Number (%) or Mean (*SD*)

Table 2. The empirical factor structure and the items for reasons for listening to music

Items (I listen to music because…)	M (SD)	F1	F2	F3	F4	F5	F6	F7
6 It keeps me company	3.60 (1.16)	0.78						
1 It can make me feel less lonely	3.27 (1.21)	0.77						
7 It comforts me when I'm sad	4.00 (1.08)	0.70						
5 It reminds me of the people that I used to listen to the music with	2.85 (1.32)		0.74					
2 It reminds me of a particular person	3.07 (1.31)		0.73					
3 It reminds me of certain periods of my life or past experiences	3.84 (1.13)		0.70					
4 It helps me reminisce	3.47 (1.17)		0.54					
13 I can recognize myself in the lyrics	3.27 (1.23)			0.79				
9 * the songwriter has made similar experiences as I have	2.78 (1.33)			0.66				
22 I like to immerse myself into the lyrics	3.44 (1.23)			0.58				
8 It makes me feel like somebody else feels the same as I do	2.98 (1.36)			0.45				
14 I can identify with the musicians or bands	2.69 (1.25)			0.40				
26 I can sing along with it	3.51 (1.27)			0.33				
30 I like to have some sound in the background	3.51 (1.27)							
27 I want to isolate myself from my surroundings	3.25 (1.28)				0.74			
28 I don't want to hear the surrounding sounds	3.05 (1.31)				0.71			
29 I don't want to talk to anybody	2.57 (1.35)				0.59			
24 It helps me understand the world better	2.75 (1.17)					0.83		
25 It helps me to understand what is going on in others peoples' heads	2.39 (1.17)					0.76		
11 It makes me feel connected to the world	2.89 (1.25)					0.71		
23 It tells me how other people think	2.41 (1.16)					0.71		
12 It makes me feel like I belong	2.75 (1.29)					0.36		
19 It mirrors the history and culture of my country	2.14 (1.22)						0.88	
21 It makes me feel connected to my culture	2.50 (1.28)						0.68	
20 It is a good way to express the uniqueness of our culture	2.59 (1.25)						0.52	
18 I would like to identify with a particular subculture	2.11 (1.12)							0.85
16 It helps me to show that I belong to a particular social group	1.95 (1.03)							0.81
17 It makes me feel connected to all the people who like the same kind of music	2.59 (1.23)							0.62
15 I would like to take the artists as role models	1.89 (1.04)							0.35
10 It makes me feel connected to others	2.79 (1.19)							0.32
Eigenvalue		1.99	2.30	2.35	1.55	2.93	1.70	2.25
Variance explained		0.07	0.08	0.08	0.05	0.10	0.06	0.08

* I have the feeling that the composer or performer or

Table 3. The empirical factor structure and the items for reasons for watching TV or movies.

Items (I watch TV/movies because…)	M (SD)	F1	F2	F3	F4	F5	F6
1 It can make me feel less lonely	3.15 (1.30)	0.76					
6 It keeps me company	3.44 (1.23)	0.64					
7 It comforts me when I'm sad	3.18 (1.31)	0.55					
23 It tells me how other people think	3.08 (1.22)		0.92				
25 It helps me to understand what is going on in others peoples' heads	2.97 (1.28)		0.90				
24 It helps me understand the world better	3.33 (1.19)		0.83				
8 It makes me feel like somebody else feels the same as I do	2.67 (1.27)		0.42				0.33
11 It makes me feel connected to the world	2.83 (1.25)		0.41		0.39		
14 I can identify with the actors or characters	3.24 (1.22)		0.36				
9 *the screenwriter or actor has made similar experiences as I have	2.31 (1.20)		0.35				
29 I like to have some video in the background	2.15 (1.31)		-0.32				
28 I dont want to talk to anybody	2.20 (1.20)			0.80			
27 I want to isolate myself from my surroundings	2.60 (1.34)			0.80			
2 It reminds me of a particular person	1.93 (1.04)				0.84		
3 It reminds me of certain periods of my life or past experiences	2.57 (1.24)				0.83		
5 It reminds me of the people that I used to watch TV with	1.82 (1.01)				0.80		
4 It helps me reminisce	2.52 (1.17)				0.62		
26 I know some lines by heart	2.40 (1.36)				0.49		
13 I can recognize myself in the plot or dialogues	2.84 (1.23)				0.34		
19 It mirrors the history and culture of my country	2.19 (1.21)					0.73	
21 It makes me feel connected to my culture	2.16 (1.15)					0.65	
20 It is a good way to express the uniqueness of our culture	2.31 (1.29)					0.63	
16 It helps me to show that I belong to a given social group	1.76 (0.96)						0.85
10 It makes me feel connected to others	2.47 (1.20)						0.76
17 It makes me feel connected to all people who like the same TV program	2.47 (1.28)						0.74
18 I would like to identify with a particular subculture	2.00 (1.09)						0.65
12 It makes me feel like I belong	2.18 (1.12)						0.50
15 I would like to take the actors or characters as role models	2.27 (1.22)						0.43
22 I like to immerse myself into the plot	**3.99** (1.14)						
Eigenvalue		1.87	3.36	1.49	3.12	1.79	3.26
Variance explained		0.06	0.12	0.05	0.11	0.06	0.11

* I have the feeling that

Table 4. The empirical factor structure and the items for reasons for reading fiction.

Items (I read fiction because…)	M (SD)	F1	F2	F3	F4	F5	F6
23 It tells me how other people think	3.45 (1.34)	0.90					
25 It helps me to understand what is going on in others peoples' heads	3.48 (1.31)	0.85					
24 It helps me understand the world better	3.68 (1.27)	0.82					
11 It makes me feel connected to the world	2.90 (1.33)	0.51					
13 I can recognize myself in the plot	2.93 (1.27)		0.78				
14 I can identify with the characters	3.50 (1.28)		0.76				
9 *the author has made similar experiences	2.84 (1.33)		0.71				
8 It makes me feel like somebody else feels the same as I do	2.91 (1.36)		0.56				
15 I would like to take the characters as role models	2.66 (1.27)		0.38				
22 I like to immerse myself into the plot	4.21 (1.14)		0.36				
6 It keeps me company	3.47 (1.32)			0.79			
1 It can make me feel less lonely	3.15 (1.34)			0.79			
27 I want to isolate myself from my surroundings	3.12 (1.36)			0.77			
28 I don't want to talk to anybody	2.59 (1.38)			0.62			
7 It comforts me when I'm sad	3.12 (1.37)			0.58			
16 It helps me to show that I belong to a given social group	1.99 (1.08)				0.92		
18 I would like to identify with a particular subculture	2.01 (1.13)				0.83		
17 It makes me feel connected to all people who like the same book(s)	2.66 (1.32)				0.57		
10 It makes me feel connected to others	2.55 (1.21)				0.54		
12 It makes me feel like I belong	2.51 (1.30)				0.44		
3 It reminds me of certain periods of my life or past experiences	2.59 (1.27)					0.71	
5 It reminds me of the people that I used to talk about the book with	2.01 (1.12)					0.71	
2 It reminds me of a particular person	2.04 (1.13)					0.68	
4 It helps me reminisce	2.61 (1.22)					0.66	
26 I know the story by heart	2.24 (1.30)					0.47	
19 It mirrors the history and culture of my country	2.39 (1.30)						0.83
21 It makes me feel connected to my culture	2.39 (1.24)						0.70
20 It is a good way to express the uniqueness of our culture	2.66 (1.35)						0.64
Eigenvalue		3.14	3.07	2.70	2.63	2.92	1.94
Variance explained		0.11	0.11	0.10	0.09	0.10	0.07

* I have the feeling that the character or

Table 5. Summary of individual differences across the factors (ANCOVA)

Domain	Covariate	Factors						
		Company	Reminiscence	Shared exp.	Isolation	Understanding others	Culture	Group identity
Music Listening	Age	$F=8.46^{**}$	$F=2.12$	$F=8.34^{**}$	$F=14.46^{***}$	$F=0.86$	$F=1.46$	$F=1.87$
	Gender	$F=12.56^{***}$	$F=17.43^{***}$	$F=12.89^{***}$	$F=5.11^{*}$	$F=0.40$	$F=5.26^{*}$	$F=0.15$
	Need to belong	$F=14.79^{***}$	$F=31.69^{***}$	$F=17.58^{***}$	$F=4.17^{*}$	$F=10.97^{**}$	$F=0.79$	$F=9.09^{**}$
	Music consumption	$F=13.02^{***}$	$F=1.04$	$F=3.01°$	$F=4.88^{*}$	$F=3.79°$	$F=1.15$	$F=3.40^{*}$
	Musical expertise	$F=3.23^{**}$	$F=2.00$	$F=2.97°$	$F=0.09$	$F=9.08^{**}$	$F=0.59$	$F=3.71°$
Watching TV/ movies	Age	$F=3.20°$	$F=5.39^{*}$	$F=0.38$	$F=11.02^{***}$	$F=0.38$	$F=1.64$	$F=10.25^{**}$
	Gender	$F=7.39^{**}$	$F=5.82^{*}$	$F=1.84$	$F=5.87^{*}$	$F=1.84$	$F=3.69°$	$F=0.15$
	Need to belong	$F=19.19^{***}$	$F=13.07^{***}$	$F=6.94^{**}$	$F=1.55$	$F=6.94^{**}$	$F=0.06$	$F=16.19^{***}$
	TV consumption	$F=12.19^{***}$	$F=3.55°$	$F=8.55^{**}$	$F=4.56^{*}$	$F=8.55^{**}$	$F=0.67$	$F=4.89^{*}$
Reading Fiction	Age	$F=3.69°$	$F=3.72°$	$F=1.68$	$F=3.69°$	$F=5.79^{*}$	$F=1.84$	$F=6.96^{**}$
	Gender	$F=0.00$	$F=2.03$	$F=0.30$	$F=0.00$	$F=2.89°$	$F=0.86$	$F=15.30^{***}$
	Need to belong	$F=17.87^{***}$	$F=17.11^{***}$	$F=13.09^{***}$	$F=17.87^{***}$	$F=11.78^{***}$	$F=6.89^{**}$	$F=15.34^{***}$
	Fiction consumption	$F=7.95^{**}$	$F=12.53^{***}$	$F=2.22$	$F=7.95^{**}$	$F=8.30^{**}$	$F=0.36$	$F=12.71^{***}$

$^{***}\ p < 0.001$, $^{**}\ p < 0.01$, $^{*}\ p < 0.05$, $°\ p < 0.1$

Table 6. Comparison of all factors

Factor name	Music Mean (*SD*)	TV/movies Mean (*SD*)	Literary Fiction Mean (*SD*)
1 Company	3.62 (0.37)	3.26 (0.16)	3.09 (0.31)
2 Reminiscence	3.30 (0.45)	2.21 (0.39)	2.30 (0.29)
3 Shared experiences*	3.11 (0.34)	2.92 (0.35)	3.18 (0.58)
4 Isolation**	2.96 (0.35)	2.40 (0.28)	3.09 (0.31)
5 Understanding others***	2.66 (0.21)	2.92 (0.35)	3.38 (0.33)
6 Culture	2.41 (0.24)	2.22 (0.08)	2.48 (0.16)
7 Group identity	2.27 (0.40)	2.27 (0.36)	2.34 (0.32)

* contains *Understanding* in TV/movies and *Identification* in Reading Fiction.
** contains *Company* in Literary fiction
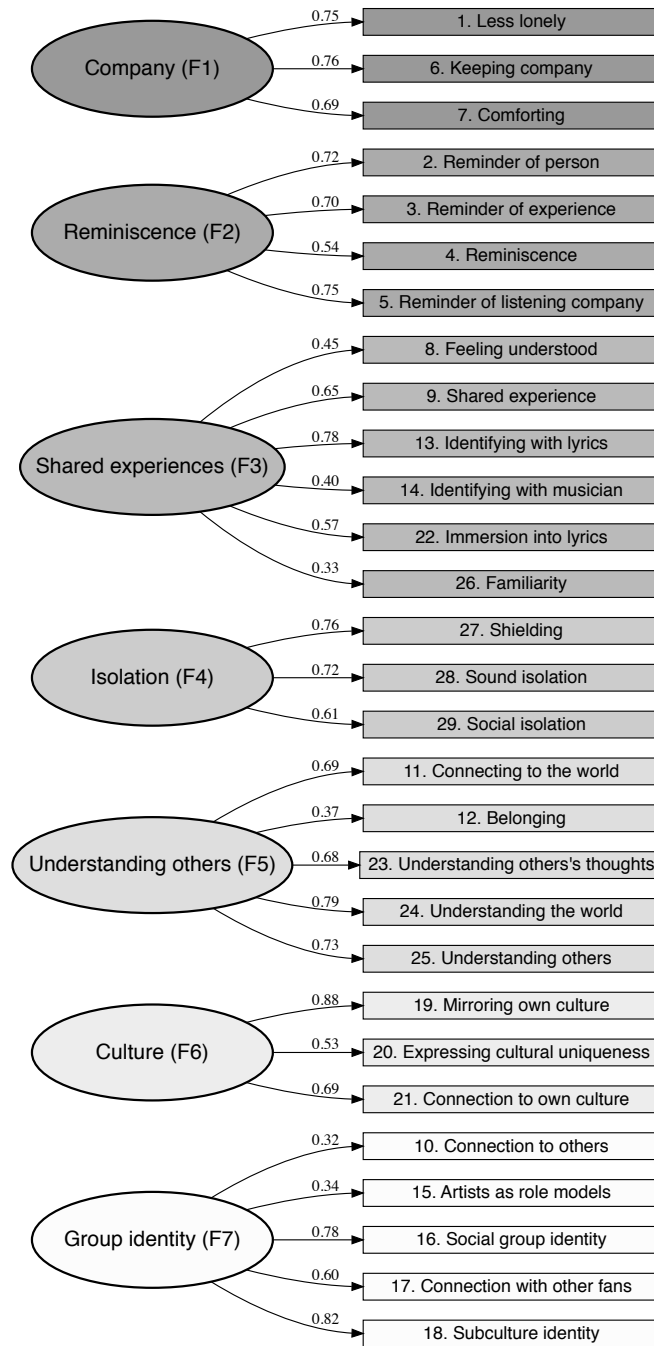*** contains *Shared experiences* in TV/movies

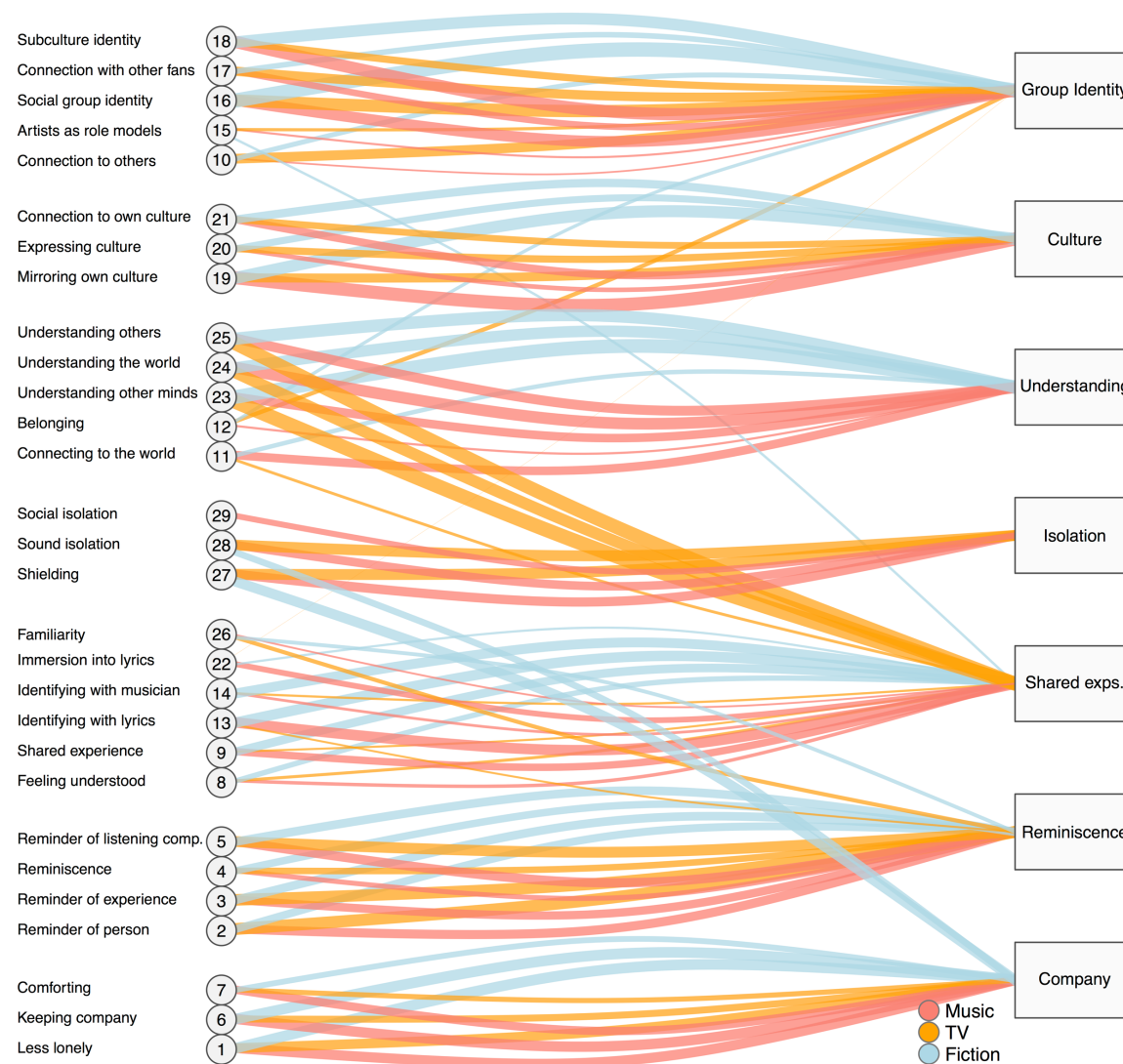*Figure 1.* Factor structure for music listening.

Figure 2. Factor structure for Music, TV, and Fiction.