

# Grooming media,

about virtual touch and feelings of social presence.

Research Seminar: Social Technologies  
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## Introduction

To what extent can modern day communication tools function as ***grooming media*** and support feelings of social presence and emotional closeness at a distance by virtual means?

In present time Dunbar's number is set around 150 friends (including close intimates and good friends). According to **The social brain hypothesis** <sup>[10]</sup> this number evolved during the human evolution as a correlation between the size of the neocortex and the cognitive load we can manage as a result of mentalizing the social structure of the group and its individual members. Another correlation, known as **The bonding gap** <sup>[05]</sup>, relates to the efficiency of a grooming medium in terms of the time consumption necessary to maintain social bonds; being a one-on-one activity, language, laughter, Facebook etc.

It is not expected that our brain-size or brain-wiring will change in the near future <sup>[08]</sup> fluctuations of Dunbar's number, if any, are expected to correlate with changes within the grooming media. Yet there is another factor. The group size will only achieve to maintain the maximum of 150 members when there is a very high incentive due to intense environmental and economic pressure, to remain together. Dunbar noted that such groups are almost always physically close: *"... we might expect the upper limit on group size to depend on the degree of social dispersal. In dispersed societies, individuals will meet less often and will thus be less familiar with each other, so group sizes should be smaller in consequence."* <sup>[15]</sup>

## Part 1      If skype had touch

"Never in the history of mankind have we been connected in a scale, and with a variety of means as nowadays. Yet we haven't cracked the problem of virtual touch". <sup>[10]</sup> If this question is met with a technical solution, like a pressure-glove, will that be a conceptually promising way to pursue? Will that be enough to create an advanced feeling of social presence?

These questions are well researched, as we will see later, however to kick-start the project an implicit and behavioural installation was set up. The design of the installation is based on principles described in *Speculative Everything*.<sup>[01]</sup> Here design is not seen in the field of problem solving or styling. Design is seen as a form of speculation about how things could be, to image possible futures. In this case the "what-if" structure of the design format is translated into: "What if Skype had touch" to explore the conceptual space.

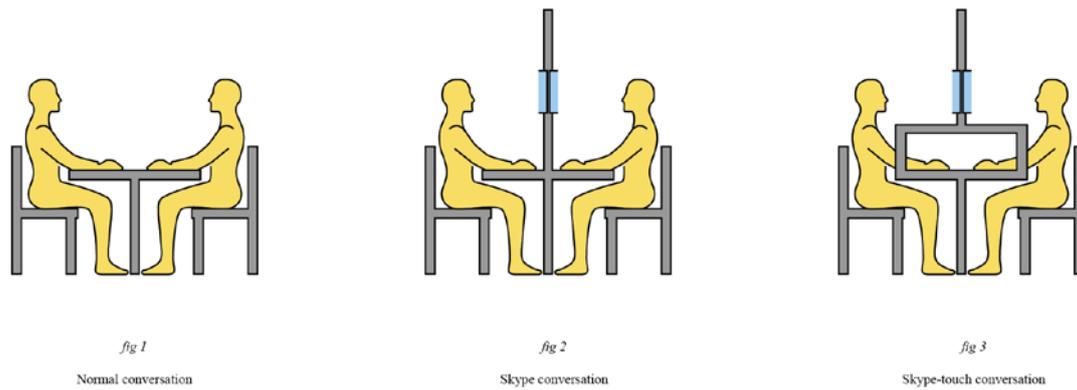


Figure 1 – Conceptual space of TouchPoints

The installation TouchPoints was put on display for two days (June 3 and 4, 2016) and about 40 to 50 people explored the installation and were interviewed afterwards. Only two couples and a mother with her small daughter could appreciate the possibilities to touch each other during the conversation [14]. They all belong to first layer of Dunbar's 150 (see below; part 3). All the other participants strongly disliked the idea of *Skype-touch*.



Figure 2 – Impression of TouchPoints (1)

This means very little. The tendencies to hug, kiss, and touch are known to be very different depending on culture. The empirical research that has been conducted in this area has confirmed that people from the United Kingdom, certain parts of Northern Europe, and Asia touch each other far less than those in France, Italy, or South America [07]. For example, couples observed in coffee-shops in San Juan, Puerto Rico by Jourard (1966) touched each other an average of 180 times per hour, while those in London cafes averaged 0 touches per hour.

Next to culture, belonging to a certain gender and age group can have a profound effect on a person's touching behaviour. Observations suggest that age and gender differences together with cultural factors have to be taken into account when investigating the role of touch as a means of interpersonal communication. [11]

Many devices have been developed in order to maintain physical contact and create feelings of social presence. For example, the aim of the ‘inTouch’ device <sup>[03]</sup> was to try and create the illusion that two people, separated by distance, were interacting with a shared physical object.

Another example of this approach is investigated at the university of Twente <sup>[02]</sup> where it was researched whether remote touch in the form of force feedback from another player's actions can

enhance feelings of social presence and enjoyment of a collaborative, spatially distributed rope pulling game <sup>[Figure 4]</sup>. The results are positive: shared virtual objects are an effective mean of influencing social behaviour and creating bonds between groups and couples. However: *“Results show that haptic force feedback significantly improves task performance, perceived task performance, and perceived virtual presence in the collaborative distributed environment. The results suggest that haptic force feedback increases perceived social presence, but the difference is not significant.”* <sup>[13]</sup> Apparently these studies do not include the layer of the relationship of the participants, previous to the study, as we will do later.

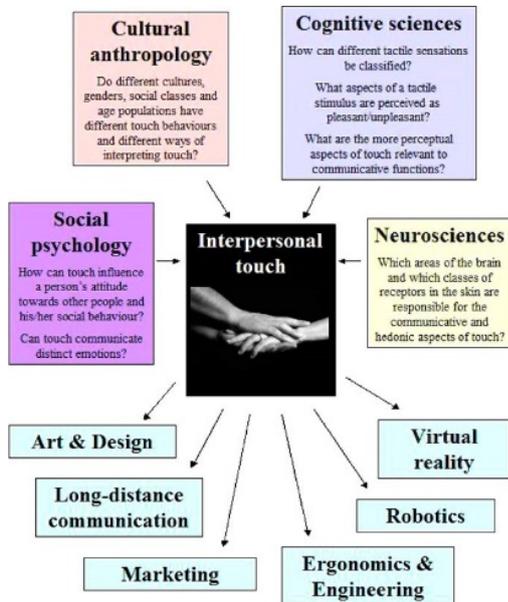


Figure 3 Schematic representation of the disciplines relevant to virtual touch research. <sup>[08]</sup>



Figure 4 Investigating the influence of remote touch on social presence.

Although favoured by the availability of new technologies and higher computational power, we hardly see any adaption of the possibilities of virtual touch by the public. Other new tools of communication are adopted (and hacked) by millions. To name a few:

**Skype** (launched in August 2003) / **Second Life** (June 2003) / **WhatsApp** (November 2009) / **Instagram** (October 2010) / **Snapchat** (October 2012) / **Face time** (September 2013)

Although wearables that support touch are developed for at least a decade and still are (e.g. The Hug Shirt <sup>[04]</sup>) and some try to add touch to the existing smartphone <sup>[12]</sup>; yet we don't see further adaptation, suggesting a lack of interest or need. An alternative conclusion however can be:

*“One might (...) point out that phones, web-cams and other popular communication devices are designed for general consumption and are simply inadequate to support and maintain a certain level of physical intimacy for couples, relatives or friends, who are located elsewhere.”* <sup>[09]</sup>

## Part 2 Sweets from Linz, a re-enactment

In September 2015 I went to Linz for 5 days. It was the first time I was more than one day away from my nearly 4-year-old daughter. Except for making funny sounds and sending icons we weren't in the habit of talking through the telephone and I don't believe she mastered the skills of the distributed mind at that time. Every evening we used Skype to 'kiss' goodnight and she showed to be very much aware that I was on the other end (and missing at home). The exchange was clear. Every evening I showed her the sweets I bought for her that day. To my surprise she remembered every item and she asked me to point the camera at the refrigerator where I kept the candy. Somehow, the sweets became an intermediate; a source of mutual attention. The growing stack of sweets seems to be connected to my absence, while returning to her would mean she could actually eat them (not at once; we are responsible parents...).

Within the context of Grooming Media, it is interesting to see what happened. To be able to re-enact the situation in Linz, another version of TouchPoints was constructed with a few alterations:

- In TouchPoints (1) the separation between camera and monitor made it impossible for people to look each other directly in the eye while this is basic for a face-to-face conversation. This parallax is smaller on tablet and smartphone. In TouchPoints 2 two tablets were used.
- In TouchPoints (1) the users could not see their own hands. In Touch Points (2) you can see your own hands and a little hatch that was in between the users, could be opened to simulate Skype-touch.



Figure 5 Impression of TouchPoints (2) – Sweets from Linz

All intentions were, again, implicit and behavioural. It didn't lead to interesting results: in the perception of my daughter, I was never in Linz but on the other side of the board. She still asks to play 'the new game' but mostly when she graves for M&M's. A more explicit preparation is needed.

## Part 3 The Mutual Moon Story

Two lovers are separated. They agree on looking at the moon at a specific point in time and when they do, they feel close, very much like being together.

*I know, that she knows, that I know, that she thinking about me right now.*

In this romantic example, there are no modern day communication tools involved, other than perhaps for making the agreement and setting the point in time. There is mutual attention for the same object while the object itself does not contain a message and there is no feedback or any sense of an interaction loop what so ever. It seems like, aside from lovers, also parents and children, lifetime friends can establish feelings of social presence in ways and with a depth that is not available for other levels of relationships. I assume there is a relation between the layer of the relationship, the medium of communication and the level of which the result can be seen as grooming.

### 3.1 Layers of closeness

Dunbar describes multiple layers of relationships<sup>[06][10]</sup> from an evolutionary perspective.

- 50 people            Bands (overnight camp groups)
- 150 people        Communities (combined bands)
- 500 people        Mega bands – Bands between communities

The table 1 is meant to be drawn by putting larger circles of over smaller one’s as if a rock cast in the water creates a waveform representing an expanding social group layer. In 1992,<sup>[06]</sup> Dunbar used the correlation observed for non-human primates to predict a social group size for humans (nota bene: 1992 is well before the general use of internet and social media. There is reason to research if the description would be different in 2016).

Layer	Number	Description
L1	5	Intimate friends
L2	15	Best friends
L3	50	Good friends
L4	150	Friends
L5	500	Near acquaintances
L6	1500	Far acquaintances

Table 1

Below <sup>[Table 2]</sup> are the same numbers presented in a different format. When putting it in a table the fact that, e.g., ‘best friends’ also include ‘intimate friends’ gets slightly obscured. For each layer only the unique number of members are given thus making the description more suitable to proceed from a perspective that is investigating the current, modern time situation. In Dunbar’s setup Layer L4-L3 contains 100 friends. It can be debated if the label ‘friend’ is well chosen and shouldn’t be ‘acquaintances’. I will do so further on.

Layer	Number	Description
L1	5	Intimate friends
L2-L1	10	Best friends
L3-L2	35	Good friends
L4-L3	100	Friends
L5-L4	350	Near acquaintances
L6-L5	1000	Far acquaintances

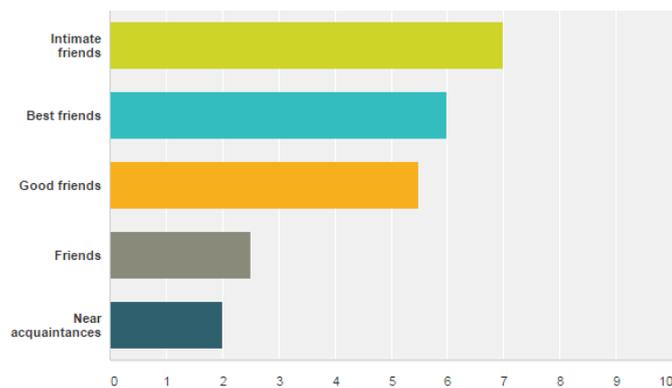
Table 2

### 3.2 Correlation between layer and the grooming effect

What is the correlation between layer of the relationship and the intensity of the grooming effect when the medium of communication is set to be Skype or FaceTime (audio + video)? In the Mutual Moon Story, the layer of the relationship is the most intimate L1; the intensity of the grooming was very strong while the medium was 'just' a shared object (the moon). It appears that the medium did not interfere with the intensity of the relation. A survey was conducted with four foreign students at Leiden University to study this further [Appendix]. The intensity of the grooming affect via a medium, seems to be correlated to the layer of the relationship; just as in real, face-to-face, circumstances.

**When Skyping or FaceTiming how close did you feel to the other person? Can you rate the feeling of being close from 1 (very distant) to 10 (like a normal face-to-face conversation).**

Answered: 4 Skipped: 0



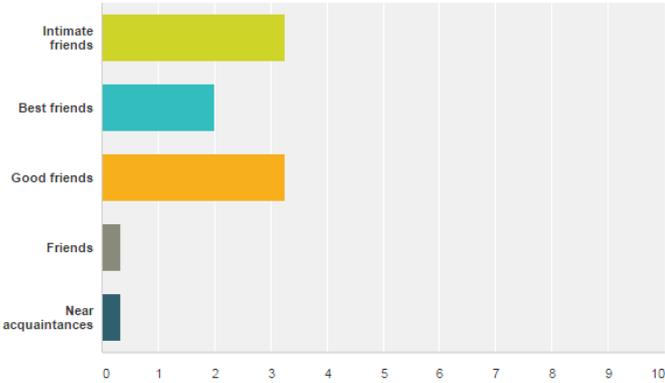
Answer Choices	Average Number	Total Number	Responses
Intimate friends <a href="#">Responses</a>	7	28	4
Best friends <a href="#">Responses</a>	6	12	2
Good friends <a href="#">Responses</a>	6	11	2
Friends <a href="#">Responses</a>	3	5	2
Near acquaintances <a href="#">Responses</a>	2	4	2
Total Respondents: 4			

Table 3- Question 4 Survey: Feelings of social presence

At level L4-L3 (Friends) the feelings of closeness drop. This break line is also visible when asked about the relationships that are maintained while being abroad. Only 4 people were asked, which makes the result not reliable however it might show a tendency worth researching further since it would indicate a good reason to change the label of layer L4-L3 from 'friends' to 'near acquaintances' or even 'acquaintances'. The 100 people in layer L4-L3 could have a different function in times of greater risk and struggle for survival then they have nowadays making those relationships much more flexible. Is sending a postcard an indicator of friendship or of being acquainted?

**Can you estimate the number of friends\* you have been in contact with via Skype or FaceTime while being abroad, and how close you are to them? Please fill out a number where the description fits your situation.\*friends include relatives**

Answered: 4 Skipped: 0



Answer Choices	Average Number	Total Number	Responses
Intimate friends <a href="#">Responses</a>	3	13	4
Best friends <a href="#">Responses</a>	2	8	4
Good friends <a href="#">Responses</a>	3	13	4
Friends <a href="#">Responses</a>	0	1	3
Near acquaintances <a href="#">Responses</a>	0	1	3

Total Respondents: 4

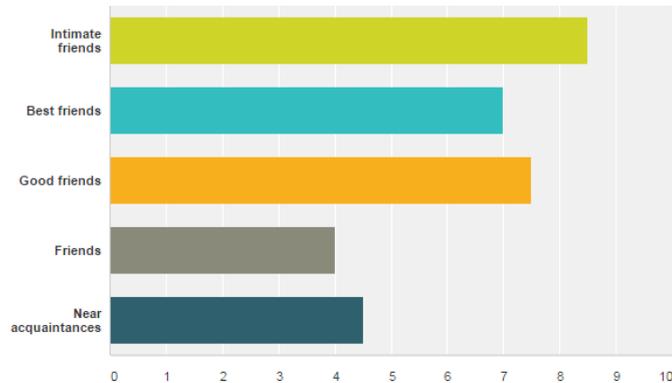
Table 4 - Question 2 Survey: Feelings of social presence

**3.3 Grooming media**

On average, for the four students that were asked, Skype and FaceTime seemed to function as strong tools to maintain personal relationships. Interestingly enough, two students rated the contacts with intimate friends with a 10, while one student rated the contact with intimate friends with a 6, going up to 9 for the contact with near acquaintances. It raises the question if things become clearer when the time being separated becomes a more important factor: How long a relationship can be maintained at the same layer of relationship when the medium of communication is set to be Skype or FaceTime (audio + video)?

Did a Skype or FaceTime conversation reduced the need to actually meet this friend or relative? Could you rate this with a number from 1 (I just miss him or her even more) to 10 (this works just fine for me).

Answered: 4 Skipped: 0



Answer Choices	Average Number	Total Number	Responses
Intimate friends <a href="#">Responses</a>	9	34	4
Best friends <a href="#">Responses</a>	7	14	2
Good friends <a href="#">Responses</a>	8	15	2
Friends <a href="#">Responses</a>	4	8	2
Near acquaintances <a href="#">Responses</a>	5	9	2
Total Respondents: 4			

Table 5 - Question 6 Survey: Feelings of social presence

## Conclusion and Discussion

Although the TouchPoints (1) interviews (40 – 50) were held with a specific type of people (Dutch, between 20 and 30 year old, students, etc.) and the survey was conducted with only 4 foreign students I feel confident to conclude that ‘touch’ is not the missing link in the sense formulated in Thinking Big<sup>[10]</sup>: “So far, no one has cracked the problem of virtual touch, but if and when they do, it might represent a major advance in our ability to create super-large, well-bonded communities on the internet.” Although touch is an important factor for social presence, also as a handshake or a pat on the back, its social importance as a grooming tool is restricted to the first layers. Virtual touch can be significant for creating feelings of social presence when the relationship falls within layer L1, L2-L1 or L3-L2. These are the most stable layers to begin with, while the instable 100 spots in layer L4-L3 and the expanding slots in further layers are hardly interested in touch-capabilities. The outer layers of ‘super-large, well-bonded communities’ will manifest where virtual touch is the least appreciated. In general, the ability to create feelings of social presence via a grooming medium is correlated to the layer of the relationship.

## Future work

When separated the relationships with 100 'friends' in layer L4-L3 tend to be changing up to the point where the relationship is not maintained and in fact is broken. How does this influence Dunbar's number being 150? It is likely that new, local, contacts are made however this is an assumption. As mentioned in the introduction the maximum of 150 relations will only be maintained when there is a high incentive due to intense environmental and economic pressure, to remain together. Do we still need the full 150 relations to protect our self from mishap and danger? We tend to be careful with the first 50 friends and relatives. Relating to them is fundamental and they are hard to replace. On the very edge of the layer 'acquaintance' however, relationships become very casual and don't have that deep meaning and sense of obligation and reciprocity that you have with your close friends. The endorphin release that supports the motivation to be close to somebody, is hardly relevant at such a distance. When necessary, social media can be a tool to easily make new contacts; things can easily be found and ordered on the internet; help and information are always just a few clicks away. It might become increasingly unnecessary to maintain a large group of relationships to protect us from social or environmental harm. We still can manage 150 relationships (like the number of people in an office building) but we don't, when we don't have to for our personal, social life. A new hypothesis <sup>[Table 6]</sup> is the result of changing labels and numbers as discussed before. The first 3 layers with the closest relationships don't change and hold 50 spots in total. Layer L4-L3 holds 50 spots (in contrast to 100) and the label of this layer is set to 'Acquaintances' (in contrast to 'Friends'):

Layer	Number	Description
L1	5	Intimate friends
L2-L1	10	Good friends
L3-L2	35	Friends
L4-L3	50	Acquaintances
L5-L4	1000	Far acquaintances

Table 6

It would be interesting to monitor people who move to another country, to study what happens to layers and numbers in relation to the time being separated:

1. The decay of existing relationships correlated to specific layers
2. The change of layer of specific relationships
3. The comparison of old (virtual) and new face-to-face relationships in correlation to specific layers
4. The number of members in a specific layer being physical present or at a virtual distance

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Without mentioning the reference.

## Appendix

### Survey Feelings of social presence

N=4

Q1

#### About you

(anonymised in this paper)

Gender:

Age:

Native country:

These other media I use to stay in touch:

Q2 (Page 2)

**Can you estimate the number of friends\* you have been in contact with via Skype or Facetime while being abroad, and how close you are to them? Please fill out a number where the description fits your situation.**

**\*friends include relatives**

	Total	Average
Intimate friends	13	3
Best friends	8	2
Good friends	13	3
Friends	1	0
Near acquaintances	1	0

Q3

**Please use this textbox to elaborate on specific relations or situations.**

I usually only skype with my parents and sometimes send voice message to good friends as well. For the rest of friends i only use text message and we don't contact as frequently as I'm in China

Mostly family

Q4 (page 3)

**When Skyping or FaceTiming how *close* did you feel to the other person? Can you rate the feeling of being close from 1 (very distant) to 10 (like a normal face-to-face conversation).**

	Total	Average
Intimate friends	28	7
Best friends	12	6
Good friends	11	6
Friends	5	5
Near acquaintances	4	4

Q5

**Please use this textbox to elaborate on specific relations or situations**

Off course it's not the same as face-to-face conversation but it's the best I can get so I'm okay with it

since i dont skype at all with just friends or near acquaintances i gave a zero to both these occasions as well

Q6 (page 4)

**Did a Skype or Facetime conversation reduced the need to actually meet this friend or relative?  
Could you rate this with a number from 1 (I just miss him or her even more) to 10 (this works just fine for me).**

	Total	Average
Intimate friends	34	9
Best friends	14	7
Good friends	15	8
Friends	8	4
Near acquaintances	9	5

Q7

**Please use this textbox to elaborate on specific relations or situations**

Well as I can't not book a ticket and be home tomorrow whenever I feel like it, so it works fine for me so far

Q8

**Being face-to-face together is not the same as having contact via Skype or Facetime. What are the differences and what did you miss the most, relative to how close you are to the friend or relative?**

You can fill in text here.

Intimate friends	<p>i miss the context of our usual conversations (now the context is always a screen when it used to be maybe a salon, a theater or a basketball court or whatever), also i probably miss the touch as well but since it happens less frequently than speaking i dont mind it too much to be honest</p> <p>Miss being able to hug them</p> <p>You do not get to touch them in any way. For example when it's their birthday and you don't get to congratulate them properly.</p>
Best friends	<p>i miss the context of our usual conversations (now the context is always a screen when it used to be maybe a salon, a theater or a basketball court or whatever), also i probably miss the touch as well but since it happens less frequently than speaking i dont mind it too much to be honest</p> <p>You do not get to for example give them a hug when they need to be comforted etc..</p>
Good friends	<p>Good friends i miss the context of our usual conversations (now the context is always a screen when it used to be maybe a salon, a theater or a basketball court or whatever), also i probably miss the touch as well but since it happens less frequently than speaking i dont mind it too much to be honest</p> <p>You can't really tell how they really are feeling from just their face. you need to see the whole "picture".</p>
Friends	<p>You can't really tell how they really are feeling from just their face. you need to see the whole "picture".</p>
Near acquaintances	<p>I didn't really miss anything with this category.</p>