

decode Science Update 3_2013

Persuasive Attention

How attention influences purchasing decisions

October 2013

Welcome to the decode Science Update

It is often said that we live in an age of *Attention Economy*. Many suppliers vie for the (short) attention span of various target groups. Mostly we assume that the customer's attention is the "eye of the needle", through which we must pass before any real persuading can begin.

The AIDA formula, still commonly used in practice, describes advertising impact as a linear sequence, in which attention is the first step – but in order to persuade somebody to carry out a (purchase) action, further steps are necessary (information, persuasion etc.). In this respect, attention is considered to be the *basis* for a subsequent decision-making process.

Now, however, new insights from the visual neurosciences and psychophysics indicate that attention is much more than "only" a basis for decisions. **Current studies show that shoppers – whether in-store or online - use attention actively as information, in order to make decisions. The product is purchased, because the shopper has seen it first, looked at it for longer or more often** ("What you see is what you buy").

In this Science Update, we consider how attention directly influences the purchasing decision itself ("persuasive attention"), how exactly it works and what it means for marketing practice.

We hope you enjoy reading this Science Update.
Your decode team



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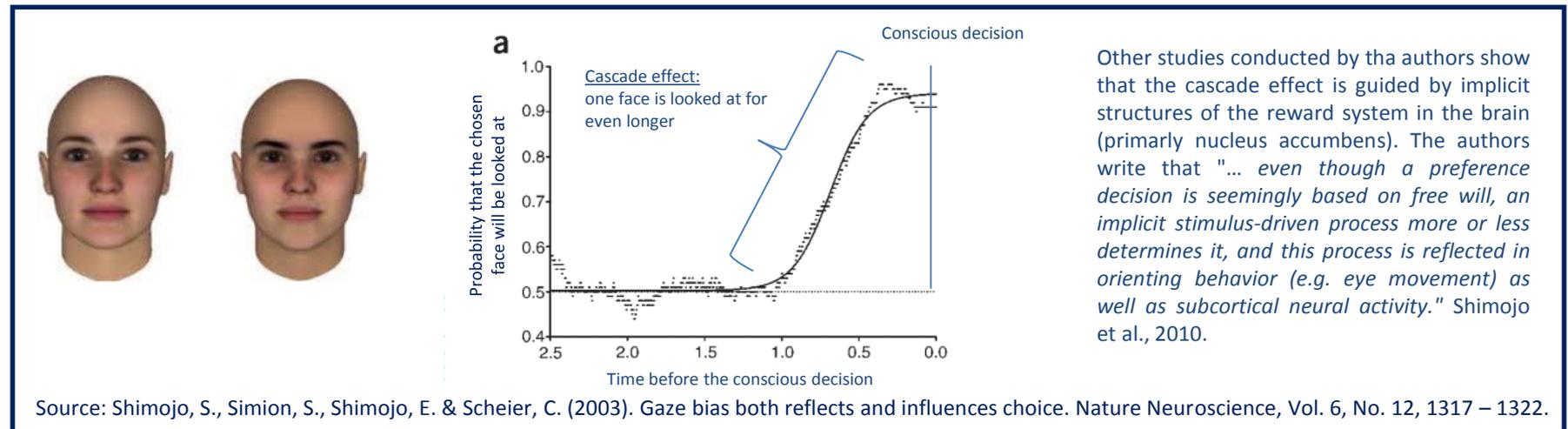
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The "gaze cascade" effect: Attention as a decision-making criterion

The role played by attention in decision-making has been studied intensively in recent years. In one of the fundamental studies on this subject, scientists from the California Institute of Technology (USA) considered this question (in collaboration with Dr Christian Scheier, founding Partner of decode). In a preliminary study, faces were studied for their attractiveness. Two faces (see illustration below left) were selected, which were felt to be equally attractive. The test subjects then had to choose, at the touch of a button, which of the two they found more attractive. Whilst doing this, their eye movements were recorded with eye tracking. In order to make a decision, the test subjects looked from one face to the other. Suddenly the following happened: the person looked at one of the pictures for a few milliseconds longer. Then their gaze wandered back to the other face, but the dynamic shifted: **The face that they happened to look at for a bit longer was now looked at for even longer (see illustration on right). The reason: Initially we look for a bit longer at one face, which slightly increases our preference. This slightly increased preference for one face then leads us to look at this face for even longer, which in turn increases our preference further – and so on, until we make the conscious decision.** This so-called cascade effect takes place completely implicitly. The effect was also replicated with more than two faces and – of particular interest for us – with pictures of products.



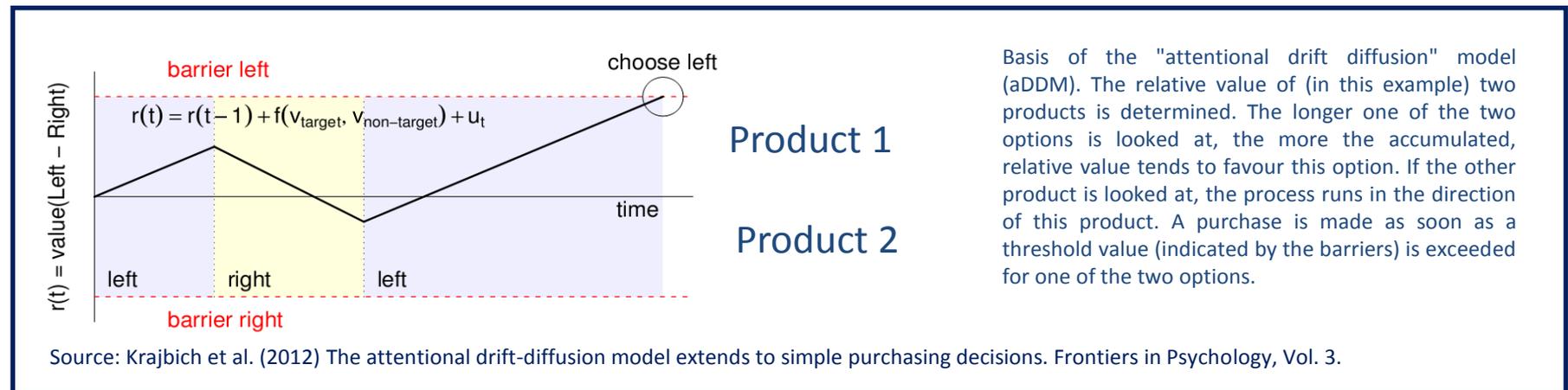
Attention is used by the brain as a judgement criterion, in order to decide between two options. By guiding the customer's attention, we can therefore influence their purchasing decision by means of the "cascade effect". Let's look at this in more detail.

The attentional drift-diffusion model:

How attention influences the purchasing decision

So what exactly happens in the brain when a cascade effect occurs and attention influences the purchasing decision? Several research groups have established a model: the *attentional drift-diffusion model* (aDDM). According to the model, if we have to decide between two different products, the brain determines at each point of the decision-making process (e.g. when we stand in front of a retail shelf) the relative, perceived value of the product observed. If this value exceeds a threshold value for one of the options, the process stops and this product is chosen.

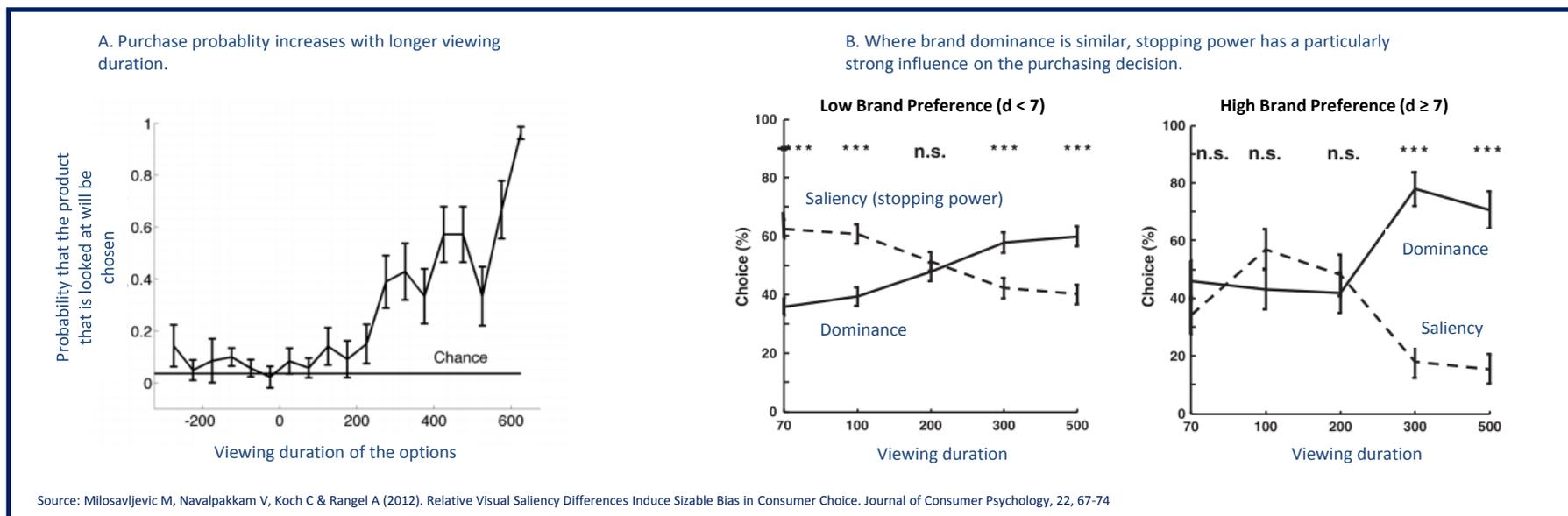
Attention influences this process as follows (see graph): **When we look at a product, the relative, perceived value "drifts" in the direction of this product, so that the probability of purchasing this product increases.** The researchers write that: „*Visual attention matters because it affects the integration process that is used to construct the relative value variable that is used to make choices.*“ (Krajibich et al., 2012).



Attention alters purchase probability by moving the decision in the direction of the product looked at. **Every eye fixation on the product contributes to an increase in purchase probability, because attention in itself is classified as an increase in value. Just looking at a product improves its value and increases preference ("What you see is what you buy").**

Stopping power increases purchase probability

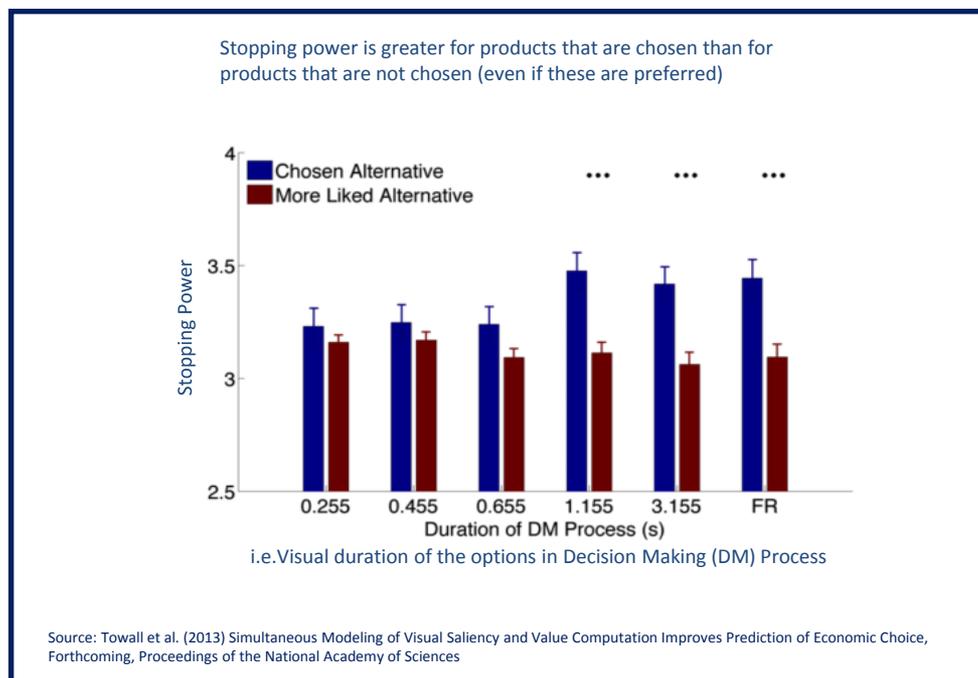
So how does this work in practice? A research group from the California Institute of Technology (USA) has published a number of studies on this subject. For these studies, test subjects were asked to look at products on shelves and decide on one product. Whilst doing this, their eye movements were recorded. The results are very clear: For every millisecond longer that a product is looked at, purchase probability increases by 0.2 per cent. **Therefore, if a product is looked at for 0.5 seconds longer than a competing product, this increases purchase probability by 100 per cent.** The influence of stopping power or attention increases under the following conditions: 1. Pressure of time (the less time available, the greater the influence of attention), 2. Overload (the more diversion, the greater the influence) and 3. low brand dominance (if there is no clear preference, the influence of attention is even greater).



In conclusion: stopping power – (a) the product that is looked at first, (b) how often the eye returns to the product and (c) how long the product is looked at in total – has a causal, direct and significant influence on preference formation and thus on the purchasing decision.

Can stopping power outdo brand preference?

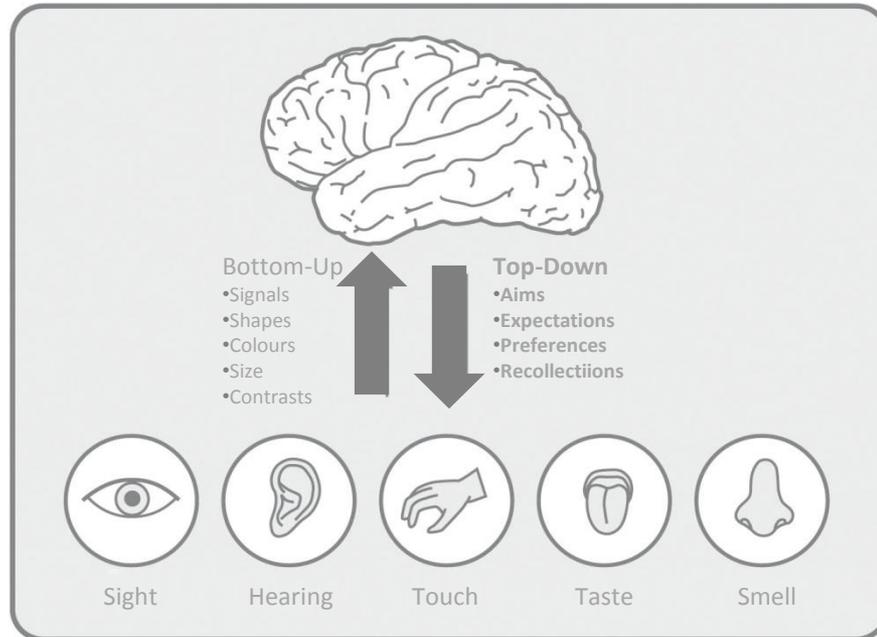
If consumers have a clear brand preference – if, for example, they buy out of habit – then the influence of stopping power is naturally lower – people just simply always reach for the same product. Today, however, segments with high loyalty are the exception (see Byron Sharp "How Brands Grow"). In addition, several studies show that even if there is a brand preference, the stopping power of packaging or displays significantly influences the purchasing decision. The faster the consumers decide, the greater this influence. The longer they take, the more the decision is determined by preferences. **Even then, however, the influence of stopping power remains significant, to such an extent that studies show that, in 40 per cent of cases, the visually more prominent product is chosen, even though another product is preferred** (see graph). However, this effect only occurs with products that are not valued negatively. Eye-catching packaging, shelf displays or in-store displays might be able to encourage positive preferences, but not create new ones or turn negative "preferences" into positive ones.



Overall it appears that if a product is looked at for half a second, the influence of stopping power is 200 per cent greater than that of an increase in brand preference of one scale point. Even after a longer time span of 1.5 seconds, the effect of stopping power on purchase probability is significant. The researchers summarise these results as follows: *"These results provide evidence for the existence of a sizable visual saliency bias, especially under the conditions of rapid decision making and cognitive load that characterize everyday decisions, such as many supermarket purchases. (...) This suggests that what matters is to be visually different from the local surroundings, which induces an interesting problem of strategic competition in package design among competing brands."* (Mormann et al., 2012).

Managing customers' attention systematically

In marketing we normally talk of attention generically. However, in science, two fundamental forms of attention are distinguished (see graphic):



1. Bottom-up: from the senses to the brain. For example, a red dot on a green surface automatically draws attention to itself (and therefore has high stopping power). Bottom-up attention is the same for all consumers and is determined by the visual characteristics of packaging, displays or websites, such as contrasts, particular shapes or other elements, such as faces.

2. Top-down: from the brain to the senses. Here, the attention is guided by our goals, expectations and preferences. If we are looking for our favourite brand on the shelf, our attention is more sensitive to signals that we associate closely with the brand (e.g. red for Coca Cola).

In order to influence attention as much as possible, both triggers must be optimised: both bottom-up attention (e.g. stopping power at POS) and top-down-driven attention (e.g. brand cues for loyal customers).

We have seen that attention is not "only" an initial trigger at the start of a decision-making process. Indeed it is the stopping power, or bottom-up attention generated by a design or display that is a *decision-making criterion*, which actively influences the decision itself.

In a current review of this phenomenon, published in the professional journal *Acta Psychologica*, which summarises all relevant studies, the authors Orquin and Müller-Loose write:

"An important conclusion of this review is that attention plays an active role in constructing decisions. Contrary to the assumption of passive information acquisition, it has been shown how attention is not only driven by information demands, but also by bottom-up processes, and interactions with working memory. Furthermore, attention leads to down-stream effects on decision making. Thus, the final decision emerges, not as a simple application of preferences and heuristics to choice stimuli but, through complex interactions among stimuli, attention processes, working memory, and preferences. Therefore, it is only fair to conclude that attention plays a constructive role in decision making" (Orquin & Müller-Loose, 2013).

Against the background of low loyalty for many brands and thus similar brand preferences, stopping power at POS – in-store or online – takes on an even greater significance. But, the management of stopping power throughout the entire development process is often neglected and not managed very systematically.

However, if between 60 and 80 per cent of all purchasing decisions are made at POS, this shows the large (sales) potential afforded by optimisation of packaging and in-store material (e.g. displays).

Fortunately, learning and understanding from the cognitive sciences demonstrate very clearly the rules and principles of how attention can be influenced, and with this knowledge, optimisation is clearly possible. For example, researchers from the Copenhagen Business School carried out a series of experiments to see which design features (e.g. shapes, colours, sizes) most strongly influence stopping power and the ultimate purchasing decision. In doing so they recorded the eye movements of shoppers buying products in a supermarket. We will examine in detail these and other insights on the subject of how attention and stopping power can be optimised and managed, in one of the next Science Updates.

Further reading

- The gaze cascade effect was initially described in this article and has since been replicated in many other studies:
Shimojo, S., Simion, S., Shimojo, E. & Scheier, C. (2003). Gaze bias both reflects and influences choice. *Nature Neuroscience*, Vol. 6, No. 12, 1317 – 1322
http://www2.bpe.es.osaka-u.ac.jp/event/summerws2004/papers/shimojo/GazePref_NN03.pdf
- Detailed review of the neuroscience of preference formation and decisions (incl. persuasive attention):
Dolan, R. und Sharot, T. (2012).
<http://books.google.de/books?id=XbtlaXvjBqEC&printsec=frontcover&dq=neuroscience+of+preference+and+choice&hl=de&sa=X&ei=w2hyUq-eAYGShQe-ioHgBA&ved=0CDQQ6AEwAA#v=onepage&q=neuroscience%20of%20preference%20and%20choice&f=false>
- The attentional drift-diffusion model applied to purchasing decisions: Krajbich et al. (2012). *Front. Psychol.*, 13.
<http://www.frontiersin.org/Journal/10.3389/fpsyg.2012.00193/full>

Event recommendation (including decode presentation)

40. DEUTSCHER MARKETING-TAG & DEUTSCHER MARKETING-PREIS 2013

Back into Leadership - Mit dem Marketing in die Pole Position



40th GERMAN MARKETING DAY & 2013 GERMAN MARKETING PRIZE

Back into Leadership - Into Pole Position with Marketing

Decode presentation:

“Knowing what customers really want”

Dr. Christian Scheier, GF decode

Düsseldorf, 28 November 2013

<http://www.marketing-tag.de>

decode presentations, seminars and publications

- 18 November 2013 – Dr Christian Scheier

Return on Advertising conference – measuring and evaluating advertising impact.

Theme: **How advertising works – neuropsychology insights**

Hamburg

- 28 November 2013 – Dr Christian Scheier

40th German marketing day

Theme: ***What customers really want: Current neuropsychology insights..***

Düsseldorf

Open seminar

- 5/6 December 2013 – PD. Dr Martin Scarabis / decode partner

ZFU International Business School

Theme: **Neuromarketing in practice: What your customers really want. Using your touchpoints to their full potential..**

Zürich

Current scientific publications

- **PD Dr Martin Scarabis** (in collaboration with Caltech, USA and the Universities of Mannheim & Vienna)

Genschow, O., Florack, A., Chib, V. S., Shimojo, S., Scarabis, M., & Wänke, M. (2013). Reaching for the (product) stars:

Measuring recognition and approach speed to get insights into consumer choice. *Basic and Applied Social Psychology*, 35, 298-315

<http://www.tandfonline.com/doi/full/10.1080/01973533.2013.785399#.UhcrGz-lc1>

- **PD Dr Martin Scarabis**

Büttner, O.B., Florack, A. & Scarabis, M. (2013). Werbekommunikation [advertising communication]. In: Blanz, M., Florack, A., & Piontkowski, U. (Hrsg.) (2013).

Kommunikation: Eine interdisziplinäre Einführung [Communication: an interdisciplinary introduction]. Kohlhammer: Stuttgart.

decode press review

• **Haptica:** Interview with **Dr Christian Scheier:**

Haptic advertising is more reliable.

October 2013, page 76

<http://www.myepublish.com/R103642/#page=12>

• **Finance:** Interview mit **Dr Christian Scheier:**

The experienced CFO has a different perspective on balance sheets.

October/November 2013, page 38

• **TV debate** – *Responsibility in audiovisual media:* Interview with **Dr Christian Scheier:**

Neuromarketing: the examination of gut instinct

October/November 2013

http://fsf.de/data/hefte/ausgabe/66/gottberg_scheier_030_tvd66.pdf

Welcome to the dialogue

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