

How Mastercard invented the health hazard of cash

12 March 2021 | [During the corona crisis, Mastercard has been busy peddling the claim that cash poses a major health threat. But this is a campaign that's been going on for at least eight years. Hakon von Holst took a closer look at its beginnings. At the center: media that trumpet any interest-driven trash that someone calls a study and gives it a snappy headline.](#)

Hakon von Holst. The American credit card company Mastercard is committed to a world without cash. To achieve its goal, the company is pulling out all the stops. In this article, you'll get a look at how Mastercard is manipulating public opinion worldwide to promote digital payment methods. The main focus is on the attempt to anchor cash in society's consciousness as an unhygienic and unhealthy object.

March 2013: A message goes around the world

America

CNN, March 28: "If you thought dirty money was only found in offshore bank accounts, check your wallet instead. But you may want to wash your hands afterward. [...]. An Oxford University study found an average of 26,000 bacteria on bank notes." [Source](#)

Switzerland

Blick, March 26: "Disgusting money: many Swiss find cash unhygienic[.] 64 percent of Swiss people find their cash unhygienic. No wonder, since it is particularly dirty." [Source A](#), [Source B](#)

The Local, March 27: "[...] a study by researchers at Oxford University concludes that legal tender in Switzerland is among the dirtiest in Europe [...]." [Source](#)

France

Le Monde, April 1: "Is Cash Dirty?" [Source](#)

UK

Metro, March 26: "More than half of Brits fear germ risk from filthy money – with good reason[.]" [Source](#)

Spain

Infosaulus, March 26: "63% of Spaniards consider coins and banknotes to be the dirtiest items[.]" [Source](#)

Denmark

DR, March 26: "Banknotes and coins are dangerous germ bombs[.] Danish banknotes are so dirty and filled with harmful bacteria that they can pose a health risk." [Source](#)

Russia

Komsomolskaya Pravda, March 27: "Each Russian banknote has 30 thousand bacteria on it[.] [...]. Our Ministry of Finance plans to introduce restrictions on large payments in cash. [...]. Officials say that this way it is easier to

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fight those who do not pay taxes. [...]. Now, there is another reason to get rid of cash [...]: hygiene.” [Source](#)

Ukraine

Svobodnaya Pressa, March 26: “Even new banknotes are home to thousands of bacteria[.]” [Source](#)

Japan

CNN Japan, March 31: “An independent study conducted [...] by Oxford University scientists found that there are an average of 26,000 bacteria on each banknote.” [Source](#)

Irorio, April 2: “Banknotes are the dirtiest thing you can touch, according to a survey by Mastercard[.]” [Source](#)

The background to the Oxford study

What had happened? Mastercard had sponsored an investigation at Oxford. Under the direction of Prof. Ian Thompson, banknotes of various currencies were tested for their germ load. The trial started on Friday, March 15, 2013, giving the [young researchers](#) a little diversion in their dry daily scientific routine.

To make the bacteria on the banknotes countable, the [samples](#) taken from them were then placed in a heating cabinet for 5 days. Based on the number of colonies of microbes that had grown during this time, a conclusion could be drawn as to how many bacteria had previously been on the banknote.

Note that the “study,” as the investigation at the prestigious elite University of Oxford was and is referred to in many press reports, was a simple laboratory test commissioned by a credit card company. Mastercard reserved the right to present the results exclusively to the public.

Mastercard’s press release of March 25, 2013

Five days after the evaluation of the samples, the company addresses the media. In its international [press release](#), Mastercard begins by interpreting the results of an [online survey](#) that a British market research firm had conducted for them.

57% believe that bank notes and coins are the least hygienic item they come into contact with ahead of even escalator handrails.”

Slightly modified, the [German version](#) of the press release states:

Thus 51% of Germans are convinced that no everyday object is as unhygienic as bank bills and coins. They don’t even fear contact with escalator handrails any more.”

The actual results of the poll do not support this statement. The question posed to participants reads, “Could you please rank the items below in terms of hygiene, where 1 is the highest in terms of hygiene and 4 is the lowest?” However, the choices are only “books in a library,” “the buttons on a payment/card terminal,” “the handle on an escalator,” and “notes & coins that you get as change.” The explicit reference to banknotes AS CHANGE helps to focus the mind of the interviewee on the fact that other people have touched the object. Against this background, it is no longer so surprising that 51% of German and 57% of all participants considered change to be the most unhygienic of the few items mentioned.

Leading over to the Oxford “study” the statement mentions that on average 26,000 bacteria are on each banknote (on euro banknotes the average is only 11,066). Even on the newest banknotes, there are already 2400 bacteria.

The press release continues with a quote from Ian Thompson. He mentions that a larger number of bacteria of a pathogenic microbial species can lead to infection. However, Mastercard does not mention that this is only true for bacteria of ONE AND THE SAME SPECIES, and only if they manage to enter the body in large numbers. Moreover, other studies have consistently found that banknotes [contain mainly](#) bacteria of the human skin flora.

A different quote for every country

Lead researcher Thompson is quoted in the press releases in different ways, depending on the country. In the International press release he says:

Europeans’ perceptions of dirty cash are not without reason. The bank notes we tested harboured an average of 26,000 bacteria, which, for a number of pathogenic organisms is sufficient for passing on infection. [...]” [Source](#)

In the German press release he says:

There is a reason why Germans think cash is dirty. The euros we tested contained an average of 11,000 bacteria. For some pathogens, that’s enough for infection. [...]” [Source](#)

In the Swedish press release he says:

Swedes are right to think that cash is dirty. The Swedish banknotes we tested contained an average of 39,600 bacteria. With a number of pathogenic organisms, that’s enough for infection. [...]” [Source](#)

The flu is coming soon

In the fall and winter of 2013, Mastercard used the flu as an opportunity to promote its services: “Achoo! Prepare for flu season by going #Cashless[.]” ([Nov. 12, 2013.](#)) “A friendly reminder to wash your hands this #flu season[.]” ([Dec. 17, 2013.](#)) Each accompanied by the keyword “dirty cash” and a meaningful photo.

Some examples of pithy messages in the form of graphics that Mastercard subsequently distributed over the Internet:

- “When do you think using #dirtycash will become a social taboo?” [See graphic here.](#)
- “Are you still using #dirtycash?” [See graphic.](#)
- And to coincide with the May 2014 release of another [survey](#) in which Mastercard [criticised](#) a disparity between the number of respondents who think cash is dirty and the number who consistently wash their hands after every contact with cash, an [ambiguous photo](#) appeared with the caption “Stop bad habits” and the note “Cash is a dirty habit.”

Spring 2020: results from the Oxford lab get a second life

On February 18, 2020, Mastercard issued a [press release](#) in Turkish: “Money has an impact on the spread of viruses[.]” That’s about what the headline says. Except that in this press release, the U.S. company again proclaims its Oxford research findings, it only refers to a 2017 [U.S. study](#) in which, according to Mastercard, it was found that a cold virus [freshly deposited on a banknote] could stay alive for 12 days.

The press release spread quickly and was often published by the media [uncommented](#). Soon, a Russian translation existed and travelled just as unchanged through the online press: here is an example from [Russia](#) and [Azerbaijan](#). On February 19 already, the [Chinese press](#) reported, referring to a [Turkish report](#).

In March, many [Spanish media](#) then wrote about the investigations from Oxford, coupled with a reference to the fact that cash payment is [no longer possible](#) on Madrid’s city buses for current reasons. The reports were apparently triggered by an [information](#) from the Spanish news agency EFE. In the course of the spring, there were also isolated articles in other countries where the findings from Oxford were given a second life: for example, in [Switzerland](#) or in [Japan](#).

At the beginning of the crisis, Mastercard [joined efforts](#) with other companies in the financial sector to raise the limit for contactless payment. The project was successful [around the globe](#). In the European Union, the project gained the [support](#) of the European Banking Authority. Towards the public, the company presented itself as a [quiet connoisseur](#).

Cash or credit card: Which is best for our health?

As a study [brought to light](#), only a few bacteria detach from cotton-based banknotes such as the euro (the 1-dollar bill with 25% linen and 75% cotton content was examined): In the three types of bacteria examined, generally no more than 0.1–0.3% (in the maximum 0.7%) attached to the finger at the point touched. Of the virus in the trial from 0.1 to 1.5% attached to the finger. Moreover, it was found that from smooth, non-porous objects, transmission is up to 250 times stronger than from the banknote.

Most of the bacteria on a banknote are [harmless](#) anyway. For the few others, their growth on our skin is hindered by the presence of other bacteria belonging to the natural skin flora, which have the support of our body behind them. It should also be mentioned that there are microorganisms on our [body surface](#) that form [antimicrobial peptides](#) and kill less useful microbes.

However, should we ever touch ourselves in the face at the wrong moment and allow a virus or bacterium to enter our body, this does not necessarily cause infection. As we all know, the dose makes the poison. Our immune system will step in and put kill viruses or bacteria if they do not enter in overwhelming numbers. In the case of salmonella poisoning, the Robert Koch Institute (RKI), a federal government agency in Germany, [estimates](#) that between 10,000 and 1,000,000 cells are needed to become infected.

Thus, it is not surprising that the German Federal Office for Risk Assessment [does not](#) consider cash to be a particular danger as far as the virus is concerned in the current crisis. Neither do the [Swiss Federal Office of Public Health](#), the [RKI](#), the [Deutsche Bundesbank](#) (the central bank of Germany) and the [ECB](#). Regarding the bacteria, the European Central Bank notes that their quantity is so small that they [cannot cause](#) any symptoms of illness.

Is 11,066 bacteria on a banknote a lot?

The 5 euro banknotes studied in Oxford have dimensions of 120x62mm (that's 74.4cm²) and a top and bottom side (74.4 times 2 sides makes 148.8cm²). An average of 11,066 bacteria divided by 148.8 gives 74 bacteria per square centimeter. Not a large number. In addition, as mentioned above, only a very small fraction of the

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bacteria on a banknote attach when touched.

In 2014, researchers [studied](#) how many bacteria are transferred during a 10-second kiss with tongue contact: it is an average of 80 million. And there are as many as [100 billion](#) microbes living on human skin!

As the water utility of the city of Zurich writes in a [publication](#), healthy, uncontaminated drinking water contains 20,000–150,000 bacteria per milliliter. Still mineral water from the bottle is in the same order of magnitude. Clean lake water counts 1 million bacteria per milliliter.

Bacteria are ubiquitous – in the air, in water, on surfaces, even in red-hot [lava](#)! But they are far [outnumbered](#) by [viruses](#). Only atoms and molecules seem to be more abundant.

Bacteria are part of our natural environment. Doesn't this raise the question of whether a healthy body doesn't also benefit from coming into contact with them? In the case of skin microbes, scientists have now made precisely this observation: without the bacteria, we would not have a [properly functioning](#) immune system.

Further activities by Mastercard against cash and for cashless payments

– On May 8, 2013, the Nigerian National Identity Management Commission and Mastercard unveiled a new electronic identity card at the World Economic Forum on Africa: credit card included. As Mastercard [reported](#), the reason the commission would involve the credit card company in the project was because it would help the Nigerian government reduce cash use. A year later, the [time had come](#): Nigeria's new identity card was [decorated](#) with the Mastercard symbol.

– On June 12, 2013, the Cost of Cash [study](#) sponsored* by Mastercard was [released](#). This study points out that cash would cost every German 150 euros a year. At the end of their analysis, the authors make suggestions as to how the use of cash can be regulated and thus further and further reduced.

Mastercard is also trying to change the minds of government organizations on the subject of cash. Earlier in 2013, the group had [reported](#), "As part of its ongoing effort to advance a public-private dialogue on the cost of cash and the benefits of electronic payments, MasterCard convened representatives from governments, academia and other NGOs to share insights and new research on this topic at a Public Sector Payments Forum [...]."

* See [article A](#), [article B](#) or [article C](#).

About the author

Hakon von Holst (born 1999) is committed to preserving cash and lives in southern Germany. He writes regularly for the portal Bargeldverbot.info. Contact: `post{at}hakonvon{last name}.de`

This is the abridged translation of a longer original German version, which can be found [here](#).

What can be done? By Norbert Häring

Pay as much as possible in cash and as little as possible with Mastercard and Visa. Ignore the signs in supermarkets asking you to pay by card.