

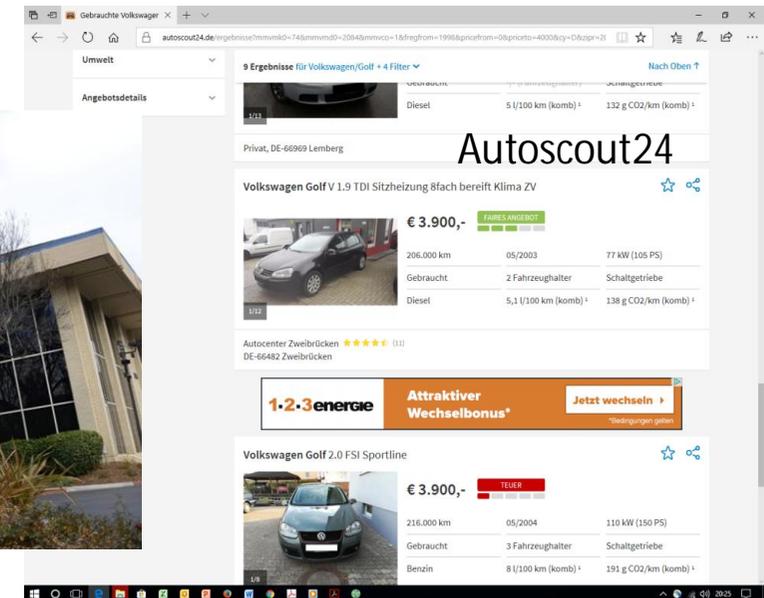
# Trust and Reputation in the Digital World



Wissenschaftskolleg zu Berlin

INSTITUTE FOR ADVANCED STUDY

Reputation systems reduce uncertainty and promote cooperation but there are also dark sides of rating systems



Andreas Diekmann

Institute of Advanced Studies, Berlin and ETH Zurich

Venice, San Servolo, 20. -23. November 2017

# Trust problems of social and economic transactions

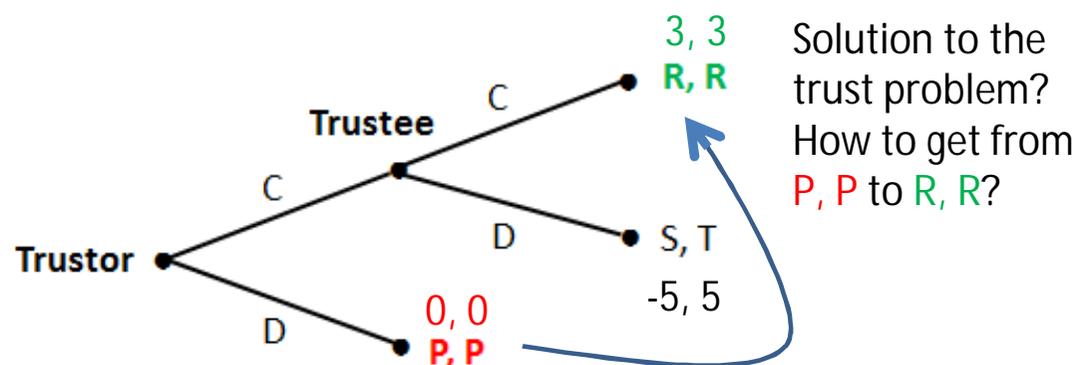
Transaction partners always face the risk of being cheated instead of achieving a mutual satisfying bargain.

1. Asymmetric information about the quality of goods
2. Transactions are sequential (time lag)

North (1991): "Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange."

► The trustor is vulnerable and won't place trust. How to get from a „bad“ equilibrium to a mutual better outcome?

► Emergence of trust institutions!



# Asymmetric information and trust in modern markets

Examples: **second-hand cars, car repair, medical treatments, dentists.**

Recent study by team of Wanda Mimra of ETH-Zurich :

- Student tester was visiting **180 dentists** in canton Zurich.
- Tester was diagnosed independently by four dentists.  
Recommendation: **No treatment necessary at all!**
- Overtreatment: **28%** of dentists suggested one to six unnecessary fillings at average cost of CHF 535.
- Low patient status increases overtreatment!



Overtreatment 32%

23%

Gottschalk, Mimra, Waibel 2017

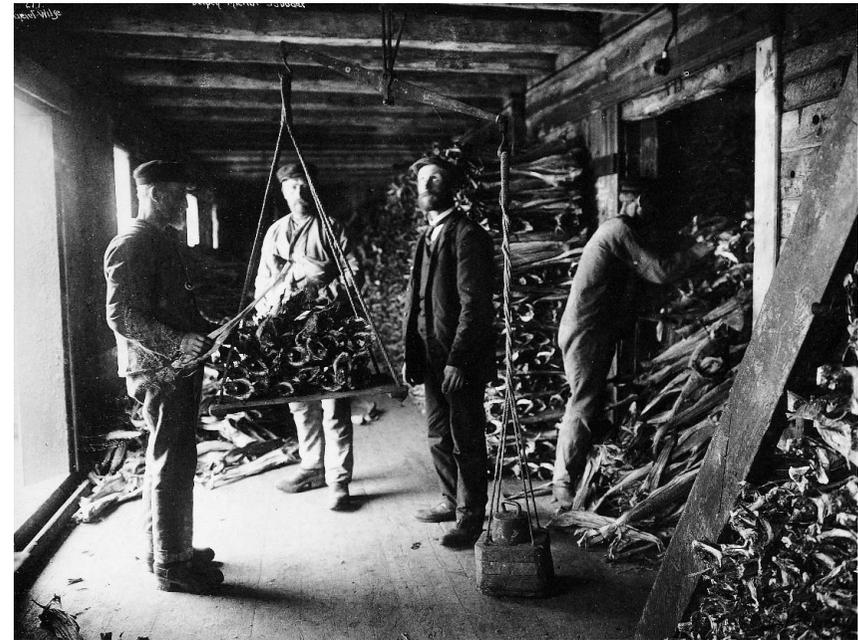
# Repeated Trust Game

## Example: The Hanse Kontor in Bergen

- Hanse merchants exchanged wheat and beer for stockfish since the 14th century.
- Lübeck merchants sailed to Bergen (where they resided in the Bryggen Kontor) while stockfish came from the Lofoten in northern Norway.
- Although the traders never met in person they established trust relationships over many years and sometimes over generations.



Bergen Bryggen



Hanse Museum Bergen

# How to achieve cooperation with trust problems?

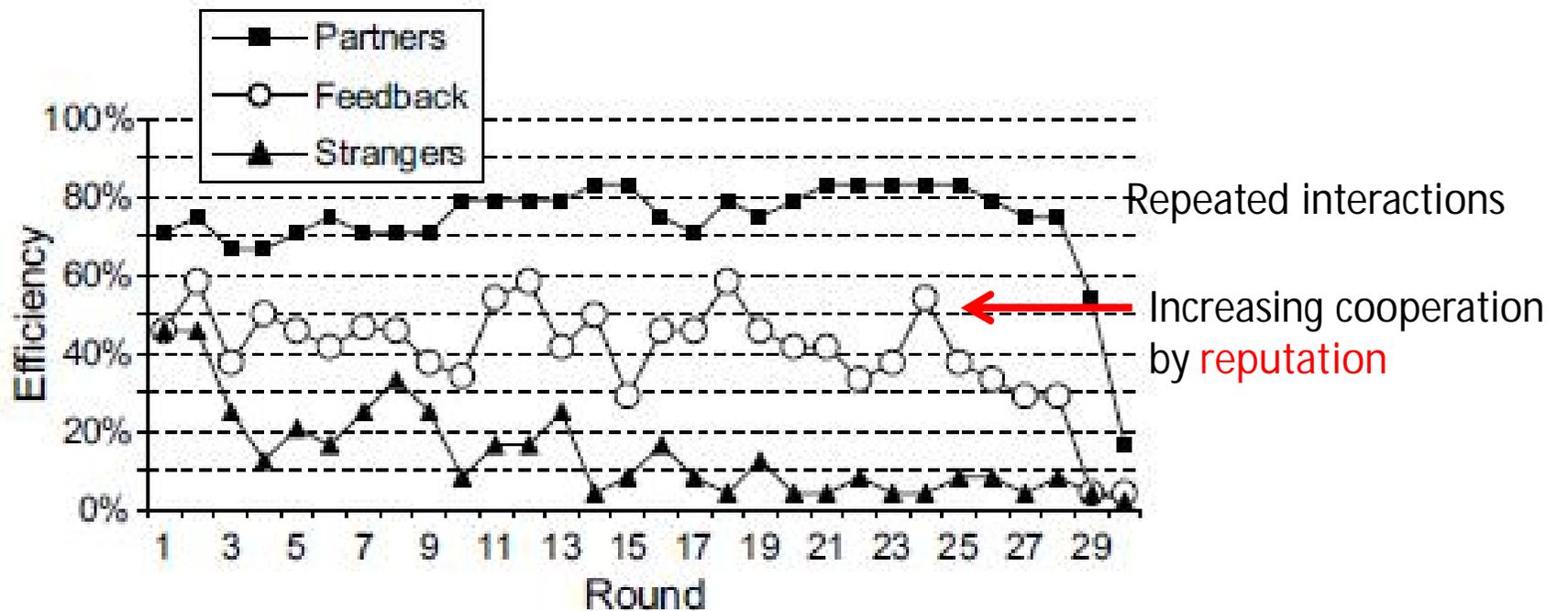
Decentralized mechanisms sustaining the emergence of cooperation:

1. Repeated games: „The shadow of the future“ (Axelrod 1984)
2. But non-repeated, single transactions among strangers?  
**Reputation: „The shadow of the past“**

► Trust building Institutions based on reputation.

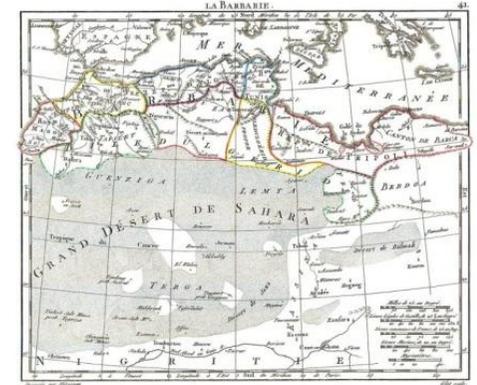
# Experimental Study of Digital Markets

Figure 2 Efficiency Measured as How Often the Gain from Trade Is Realized, by Round



# Reputation based commercial transactions of medieval long-distance trade

- Historical study by Avner Greif (1989) about long distance trade of Mahgreb merchants in the 11th century. Merchants established an effective reputation system to prevent fraudulent behaviour of agents.
- Long distance trade in medieval Europe: The Champagne Fairs in the 12th and 13th century. Private judges kept records on past behaviour of merchants; merchants payed a fee for access to information. (Game theoretic analysis: Milgram, North, Weingast 1990, *The Role of Institutions in the Revival of Trade. The Law Merchant, Private Judges, and the Champagne Fairs.*)



Wikimedia Commons

# Reputation on Digital Markets

WWW: Enormous extension of markets and new technologies for sustaining reputation mechanisms:

1. Evaluation of past behavior by transaction partners.
2. Transparency: The Information on the past behavior of actor x with all other transaction partners is available to all market participants.
3. Information cost is almost zero.

# Autoscout24

Car dealer  
reputation  
1 to 5 stars

Gebrauchte Volkswagen

autoscout24.de/ergebnisse?mmvkm0=74&mmvmd0=2084&mmvco=1&fregfrom=1998&pricefrom=0&priceto=4000&cy=D&zpr=20

Umwelt

Angebotsdetails

9 Ergebnisse für Volkswagen/Golf + 4 Filter

Nach Oben ↑

Gebrauch	Verbrauch (l/100 km)	CO2 (g/km)
Diesel	5 l/100 km (komb)	132 g CO2/km (komb)

Privat, DE-66969 Lemberg

Volkswagen Golf V 1.9 TDI Sitzheizung 8fach bereift Klima ZV

FAIRES ANGEBOT

€ 3.900,-

206.000 km	05/2003	77 kW (105 PS)
Gebraucht	2 Fahrzeughalter	Schaltgetriebe
Diesel	5,1 l/100 km (komb)	138 g CO2/km (komb)

1/12

Autocenter Zweibrücken ★★★★★ (11)  
DE-66482 Zweibrücken

1.2.3energie Attraktiver Wechselbonus\* Jetzt wechseln ▶  
\*Bedingungen gelten

Volkswagen Golf 2.0 FSI Sportline

TEUER

€ 3.900,-

216.000 km	05/2004	110 kW (150 PS)
Gebraucht	3 Fahrzeughalter	Schaltgetriebe
Benzin	8 l/100 km (komb)	191 g CO2/km (komb)

1/8

20:25

# **Does Reputation solve for the trust problem?**

- 1. Incentive problem of reputation: Does it pay off to have a good reputation?**
- 2. Do professional car dealer claim higher prices than private sellers?**
- 3. Warranty: A signal of quality?**

# Findings from Autoscout24: Statistical analysis of 58'000 Autoscout24 auctions

## Data

- Homogeneous goods (to reduce unobserved heterogeneity)
- Volkswagen Golf
- May and October 2015

(with Siow, Tobler, Wehrli)

	May		October	
	(2.1)	(2.2)	(2.3)	(2.4)
	logprice	logprice	logprice	logprice
<b>Age in Years</b>	-0.0877***	-0.0878***	-0.0831***	-0.0837***
	(-177.77)	(-151.23)	(-131.53)	(-101.92)
<b>Kilometers (km/10k)</b>	-0.0353***	-0.0349***	-0.0331***	-0.0331***
	(-126.19)	(-125.85)	(-94.74)	(-92.83)
<b>Horsepower (hp/10)</b>	0.0575***	0.0489***	0.0538***	0.0459***
	(243.67)	(170.22)	(120.90)	(99.27)
<b>Diesel (0/1)</b>	0.0976***	0.0911***	0.0754***	0.0722***
	(73.73)	(78.29)	(37.88)	(40.37)
<b>Warranty (0/1)</b>	0.0175***	0.0128***	0.0158***	0.00934***
	(12.06)	(9.28)	(5.08)	(3.61)
<b>Rating Average (1-5)</b>	0.00552***	<b>0.00497***</b>	0.0110***	<b>0.00874***</b>
	(5.20)	(5.18)	(4.02)	(3.51)
<b>Car Models (Df=19)</b>	No	Yes	No	Yes
<b>Car Features (Df= 14)</b>	No	Yes	No	Yes
<b>Constant</b>	9.491***	9.500***	9.482***	9.499***
	(1811.69)	(1375.65)	(749.94)	(719.51)
<b>Observations</b>	36431	36431	42696	42696
<b>Adjusted R<sup>2</sup></b>	0.911	0.933	0.904	0.923
<b>F</b>	52798.4	10585.2	18864.6	3848.2
<b>df_m</b>	6	38	6	38
<b>bic</b>	-54065.0	-64306.5	-69906.8	-79212.5

•Warranty and Reputation (Dealers only) In these models, we drop 13'005 (5688+7317) cases from private sellers. Additionally, we also drop 16'746 cases where the average rating is unobserved because the ratings are hidden or the number of ratings is zero. *t* statistics in parentheses  
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

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\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

	May		October	
	(1.1)	(1.2)	(1.3)	(1.4)
	logprice	logprice	logprice	logprice
<b>Age in Years</b>	-0.0893*** (-214.82)	-0.0879*** (-179.08)	-0.0856*** (-171.61)	-0.0848*** (-129.09)
<b>Kilometers (km/10k)</b>	-0.0350*** (-148.16)	-0.0348*** (-146.29)	-0.0330*** (-115.98)	-0.0332*** (-118.81)
<b>Horsepower (hp/10)</b>	0.0576*** (277.05)	0.0488*** (186.66)	0.0548*** (159.71)	0.0455*** (108.83)
<b>Diesel (0/1)</b>	0.102*** (84.16)	<b>0.0919***</b> (84.25)	0.0807*** (47.06)	<b>0.0748***</b> (46.99)
<b>Private Seller (0/1)</b>	-0.00997*** (-4.36)	<b>-0.00357</b> (-1.34)	-0.00203 (-0.94)	<b>0.00214</b> (0.79)
<b>Constant</b>	9.526*** (4553.71)	9.520*** (2162.19)	9.535*** (2792.20)	9.534*** (1333.20)
<b>Observations</b>	50730	50730	58148	58148
<b>Adjusted R<sup>2</sup></b>	0.923	0.939	0.921	0.935
<b>F</b>	98389.1	16863.3	39418.5	7177.5
<b>df_m</b>	5	37	5	37
<b>BIC</b>	-69905.3	-81575.8	-88342.4	-99156.5

•Dealer vs. Seller

*t* statistics in parentheses. Model 1.1 and 1.2 have robust standard errors. Models 1.3 and 1.4 are additionally clustered on seller id.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

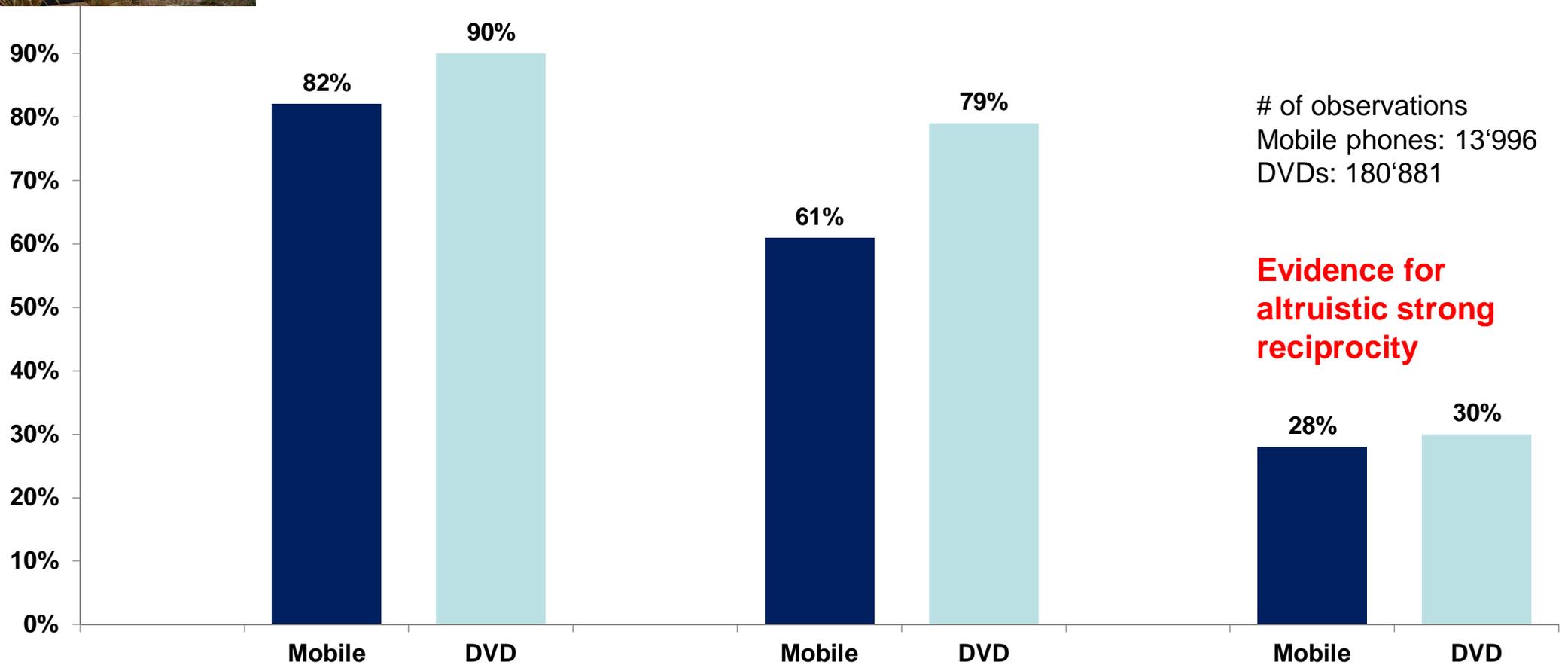


## Feedback Patterns: Percent ratings by seller and buyer in two-sided rating system

% Rating

Seller and buyer give feedback

Buyer as a second rater



# of observations  
Mobile phones: 13'996  
DVDs: 180'881

**Evidence for  
altruistic strong  
reciprocity**

Diekmann, A., Jann, B., Przepiorka, W., Wehrli, S., 2014. Reputation Formation and the Evolution of Cooperation in Anonymous Online Markets. *American Sociological Review* 79: 65-85.

# Use and Misuse of Reputation. Key Problem: Fake reputations

► Offers on web platform „Fiverr“

The screenshot shows a Fiverr gig listing. The main title is "I will write a compelling and positive appraisal of your book For You for \$5". Below the title, it says "in Reviews" and "2 Days On Average". The main image features a man in a blue suit standing in front of a large "amazon" logo. To the right of the image, there is a green "Order Now (\$5)" button with a shopping cart icon. Below the button, there is a "Basic Gig Quantity" dropdown menu set to "1 (\$5)". There are social media icons for Facebook, Twitter, Google+, LinkedIn, and Email. The seller's profile picture and name are redacted with black bars. Below the profile picture, it says "From United States" and "Speaks English". At the bottom right, there is a "Contact Me" button.

Are Fiverr Running Scared From Amazon Fake Reviews Lawsuit?  
Oct 22, 2015 by [Anita Campbell](#) In [Marketing Tips](#)  
[14](#)

„Professional“ help to destruct competitor’s reputation:

The image shows a screenshot of a Fiverr gig listing. The main text on the left reads: "I will post negative reviews in anywhere for \$5". Below this, it says "in Reviews" and "4 Days On Average". The central text is "ITS ALL ABOUT NEGATIVE REVIEWS" in large blue letters, followed by "100% SATISFACTION" in red letters with a row of asterisks underneath. On the right side, there is a green "Order Now (\$5)" button with a shopping cart icon. Below the button, it shows "Basic Gig Quantity" set to "1 (\$5)". Further down, it displays "21 Buyer Reviews" with a 4.7 star rating and "Orders in Queue" with a count of 6. At the bottom right, there are social media icons for Facebook, Twitter, Google+, LinkedIn, and Email, along with a cartoon illustration of a person running with a box.

Are Fiverr Running Scared From Amazon Fake Reviews Lawsuit?  
Oct 22, 2015 by [Anita Campbell](#) In [Marketing Tips 14](#)

Misuse of reputation scores by authoritarian states to control civilians: Orwell „1984“?



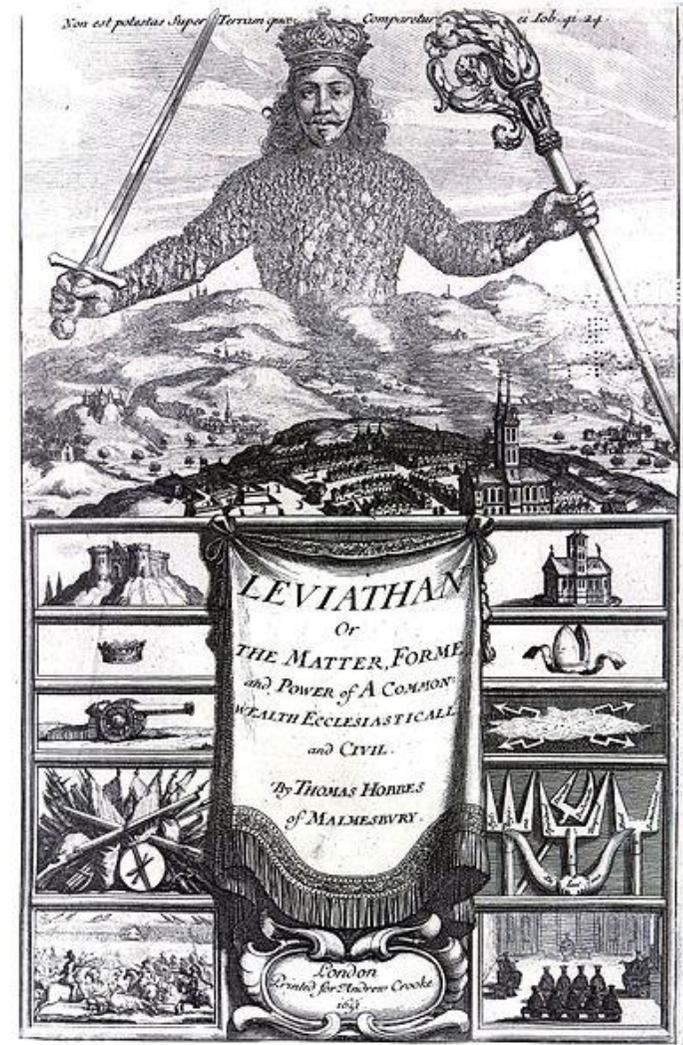
„A pilot scheme in Suining county, in Jiangsu province north of Shanghai, gives clues about what such a system might mean in practice. Starting in 2010, the local government awarded people points for good behaviour (such as winning a national honour of some kind) and deducted points for everything from minor traffic offences to „illegally petitioning higher authorities for help“. Those who score highest were eligible for rewards such as fast-track promotion at work or jumping the queue for public housing“ (The Economist, December 17th, 2016).

# How to Cope With Anarchy in the Online World?

- The „Dark Net“: A real Hobbesean world
- Illegal digital markets : People have an incentive to cheat on each other and markets are likely to collapse.



In the state of nature life was  
„solitary, poor, nasty, brutish, and  
short“  
(Thomas Hobbes 1651)



„Drugs“ is by far the most popular category.



Browse Categories	
<input type="checkbox"/> Fraud	9479
<input type="checkbox"/> Drugs & Chemicals	28713
<input type="checkbox"/> Guides & Tutorials	4347
<input type="checkbox"/> Counterfeit Items	1785
<input type="checkbox"/> Digital Products	3786
<input type="checkbox"/> Jewels & Gold	531
<input type="checkbox"/> Weapons	551
<input type="checkbox"/> Carded Items	958
<input type="checkbox"/> Services	2135
<input type="checkbox"/> Other Listings	748
<input type="checkbox"/> Software & Malware	465
<input type="checkbox"/> Security & Hosting	169

Fake German ID Card \*Hig... x +

Search

 AlphaBay Market You are logged in  
Current balance

Home • Sales • Messages • Listings • Balance • Orders • Feedback • Forums • Contact ▲USD 380.71 ▲CAD 505.85 ▲EUR 354.44 ▲AUD 540.21 ▲GBP 252.95

Home / Counterfeit Items / Fake IDs / Fake IDs / Fake German ID Card \*High Quality\*

**Listing Options**

Contact Seller

Favorite Listing

Favorite Seller

Alert when restock

Report Listing

**Browse Categories**

Fraud 9479



**Fake German ID Card \*High Quality\***

ID-2 Format Größe von 105 x 74 mm Format DIN A7 Der Personalausweis wurde in HD Qualität Gedruckt und mit der selben Folie Laminiert wie der echte. Gut für unter 18 Jährige um in die Disco Reinzukommen oder am Kiosk Alkohol und Zigaretten zu Kaufen. Bestellformular : Shipping Name ( Vor- und Nachname ) : Lieferadresse ( genau wie es ist, auf dem Umschlag angezeigt): Nachname ( Nachname ) : Vor...

Sold by **KCO47169** - 28 sold since May 5, 2015 Level 1

	Features	Features	Features
<b>Product class</b>	Physical package	<b>Origin country</b>	Worldwide
<b>Quantity left</b>	Unlimited	<b>Ships to</b>	Worldwide
<b>Ends in</b>	Never	<b>Payment</b>	Escrow

EU - 4 days - USD +2.23 / item

7.11.2015

**Listing Options**

- [Contact Seller](#)

---

- [Favorite Listing](#)

---

- [Favorite Seller](#)

---

- [Alert when restock](#)

---

- [Report Listing](#)

**Browse Categories**

- ▶  [Fraud](#) 9479

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- ▶  [Drugs & Chemicals](#) 28709

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- ▶  [Guides & Tutorials](#) 4347

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- ▶  [Counterfeit Items](#) 1785

---

- ▶  [Digital Products](#) 3786

---

- ▶  [Jewels & Gold](#) 531

---

- ▶  [Weapons](#) 551

---

- ▶  [Carded Items](#) 958

---

- ▶  [Services](#) 2135

---

- ▶  [Other Listings](#) 748

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- ▶  [Software & Malware](#) 465

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- ▶  [Security & Hosting](#) 169



**Counterfeits Bills Top Quality - 20€ (10 bills)**

10x20 top quality in the world

Sold by [levistrau\\$\\$](#) - 72 sold since Mar 24, 2015 Level 2

Features		Features	
<b>Product class</b>	Physical package	<b>Origin country</b>	Italy
<b>Quantity left</b>	Unlimited	<b>Ships to</b>	Worldwide
<b>Ends in</b>	Never	<b>Payment</b>	Escrow

international Shipping - 10 days - USD +10.90 / item

Purchase price: USD 108.94

Qty:  Buy Now Queue

0.2851 BTC

- Description
- Bids
- Feedback
- Refund Policy

**Product Description**

10x20  
top quality in the world

- levistrau\$\$
- levistrauss
- fake
- money
- bills
- counterfeits

▶ Fixed price, payed in Bitcoins

▶ Auctions are very rare. I searched the market (all categories): the proportion of auctions is less than 1 %.

Hacked UK Amazon Acc... x

pwoah7foa6au2pul.onion/listing.php?id=3953

AlphaBay Market

You are logged in as Spiegelmuller  
Current balance: BTC 0.0000  
Autoshop Logout

Home • Sales • Messages • Listings • Balance • Orders • Feedback • Forums • Contact

USD 382.10 CAD 507.70 EUR 355.73 AUD 542.19 GBP 253.87

Home / Fraud / Accounts & Bank Drops / Accounts & Bank Drops / Hacked UK Amazon Accounts

**Listing Options**

- Contact Seller
- Favorite Listing
- Favorite Seller
- Alert when restock
- Report Listing

**Browse Categories**

- Fraud 9479
- Drugs & Chemicals 28708
- Guides & Tutorials 4347
- Counterfeit Items 1785
- Digital Products 3786
- Jewels & Gold 531
- Weapons 551
- Carded Items 958
- Services 2135
- Other Listings 748
- Software & Malware 465
- Security & Hosting 169

**Search Options**

Search terms:

Listing type:  
 All  Fixed Price  Auction

Product type:





**Hacked UK Amazon Accounts**

This listing is for 1 x unchecked hacked uk amazon account. Format of account Live | p.m.thomas7@gmail.com | hdle21 | [CRE:196] There is no guarantee with these account as of items or content they contain they are picked at random live and none checked. I will not replace due to security restricted accounts or any other problems you have caused. You are only buying login information email ...

Sold by stackcash - 122 sold since Apr 3, 2015 **Level 5**

	Features		Features
Product class	Digital goods	Origin country	Worldwide
Quantity left	Unlimited	Ships to	Worldwide
Ends in	Never	Payment	Escrow

Default - 1 days - USD +0.00 / item

Purchase price: USD 2.00  
 Qty: 1 **Buy Now** **Queue**  
 0.0052 BTC

Description **Bids** Feedback Refund Policy

**Product Description**

This listing is for 1 x unchecked hacked uk amazon account.

Format of account  
 Live | p.m.thomas7@gmail.com | hdle21 | [CRE:196]

There is no guarantee with these account as of items or content they contain they are picked at random live and none checked. I will not replace due to security restricted accounts or any other problems you have caused.

You are only buying login information email + pass with these accounts!

Hacked UK Amazon Accounts

„stackcash“ sells counterfeit items. Here, a hacked amazon account is for sale for US\$ 2.00 (stackcash is honest and does not give a guarantee).

Windows taskbar with various application icons and system tray showing 18:44.

**Profile Actions**

- Home Page
- My Information
- Private Messages
- Listings
- Orders
- Sales
- Contracts
- Favorites
- Vacation Mode
- Shared Access
- Balance
- Feedback
- Buyer Blacklist
- Vendor Stats
- Order Queuing
- Affiliate Stats
- Help

**Seller statistics**

Currently selling

Listed items	0
Will sell	0
Listed amount	USD 0.00

Sold items

Items sold	0
Sold amount	USD 0.00

Payments

Received	USD 0.00
In Escrow	USD 0.00
Escrow holdings	BTC 0.0000

stackcash | User Profile



**stackcash** (2749) Level 5

**Positive feedback (last 12 months): 98%**  
[How is the feedback score calculated?]

Member since: March 18, 2015  
 Contracts: 0 in progress, 0 complete

[View Store](#)  
[Send Message](#)  
[Favorite](#)  
[Blacklist](#)  
**FE Allowed**

98 % positive ratings in last 12 months



**Seller Feedback Ratings** (last 12 months) ?

	1 month	6 months	12 months
<span style="color: green;">+</span> Positive	61	374	51
<span style="color: blue;">o</span> Neutral	0	4	1
<span style="color: red;">-</span> Negative	1	4	1

**Buyer Statistics** (since join date) ?

	Since join
Total disputes / orders	0 / 0
Total spendings	---
Feedback left	0 (100.0% positive)
Last online	Nov 7, 2015

Detailed seller ratings:

Stealth	Quality	Value for price
★★★★★	★★★★★	★★★★★

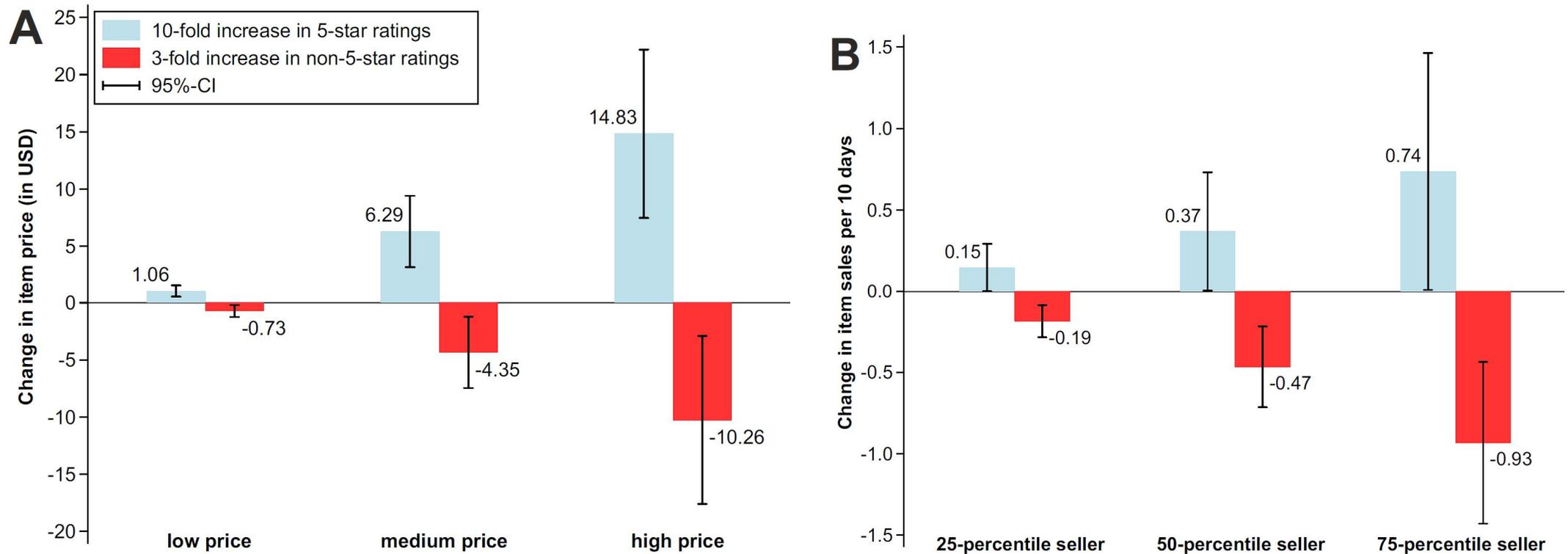
- + NDD, look genuine, its going to be a good XMAS!
- + Don't think....Just buy! Fantastic product. Thank you.
- + Stackcash is the best vendor I've ever dealt with in my entire life
- + shipped quick
- + Top as usual.

- About
- Positive Feedback
- Neutral Feedback
- Negative Feedback
- Feedback Left
- PGP

Total positive feedback: 486 97% of all feedback ?

Feedback	Buyer / Price	Date / Time
<span style="color: green;">+</span> Don't think....Just buy! Fantastic product. Thank you. <small>[NEW] ▾ Morrison ▾ Tesco ▾ Co-op ▾ Saver Stamps ▾ Only On USD 54.0000                      AlphaBay ▾ Triple Your Money ▾ £100 - £1000+ ▾</small>	c...2	Nov 6, 2015 01:09 <a href="#">View Item</a>
<span style="color: green;">+</span> NDD, look genuine, its going to be a good XMAS! <small>[NEW] ▾ Morrison ▾ Tesco ▾ Co-op ▾ Saver Stamps ▾ Only On USD 230.0000                      AlphaBay ▾ Triple Your Money ▾ £100 - £1000+ ▾</small>	g...e	Nov 6, 2015 00:55 <a href="#">View Item</a>
<span style="color: green;">+</span> Top as usual. <small>▾ Hacked Next ▾ Available Credit ▾ Catalog Shopping Accounts USD 15.0000</small>	c...r	Nov 5, 2015 02:40 <a href="#">View Item</a>

# Reputation on drug cryptomarket „silk road“ enhances both the selling price of drugs and the frequency of sales



# Reputation is not sufficient: Buyer protection by escrow service

Interordnance R94 7,62x39 ... x +

pwoah7foa6au2pul.onion/listing.php?id=43036

Home • Sales • Messages • Listings • Balance • Orders • Feedback • Forums • Contact

Home / Weapons / Long-Range Guns / Long-Range Guns / Interordnance R94 7,62x39 FULL ESCROW

**Listing Options**

- Contact Seller
- Favorite Listing
- Favorite Seller
- Alert when restock
- Report Listing

**Browse Categories**

- Fraud 9480
- Drugs & Chemicals 28730
- Guides & Tutorials 4347
- Counterfeit Items 1785
- Digital Products 3786
- Jewels & Gold 531
- Weapons 551
- Carded Items 958
- Services 2136

**Interordnance R94 7,62x39 FULL ESCROW**

For sale is an Interordnance R94 Straight-Pull-Repeater, which has been made in Austria by Interordnance. It's a 7,62x39mm caliber and operated by a simple straight-pull and safety lock. It comes with 2 magazines and 40 Rounds of FMJ Ammo. It is in good condition as you can see for yourself in the pictures. better quality Images <http://www0.xup.in/exec/ximg.php?fid=20577635> <http://www0.xu...>

Sold by [deschek1337](#) - 0 sold since Oct 5, 2015 **Level 1**

	Features		Features
Product class	Physical package	Origin country	Austria
Quantity left	1 items	Ships to	Europe
Ends in	Never	Payment	Escrow

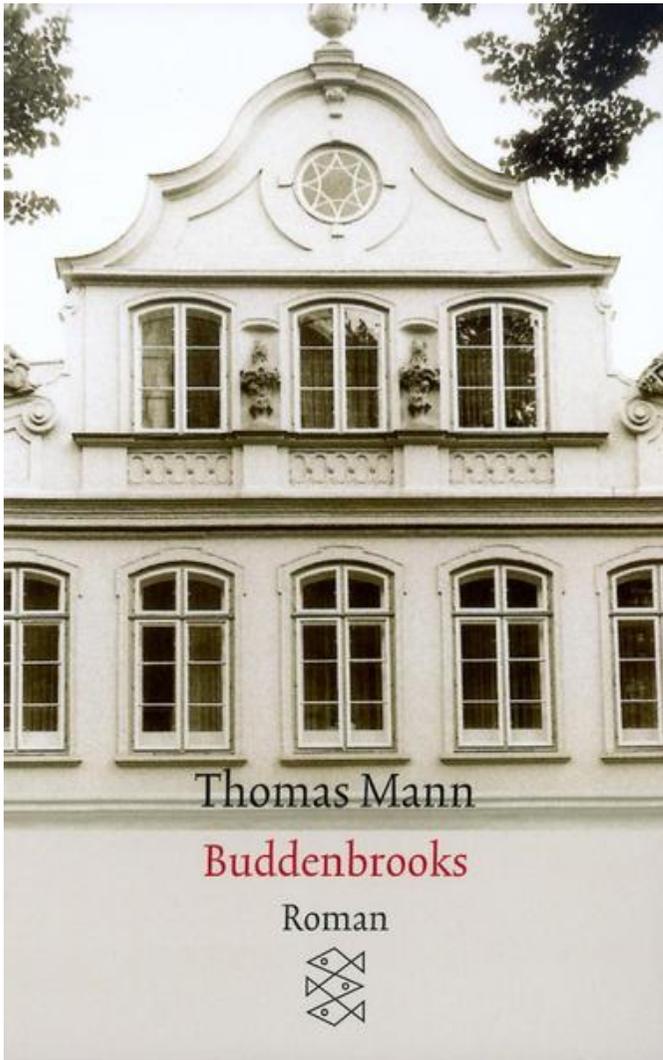
EU - 12 days - USD +44.84 / item

Purchase price: USD 1,934.92  
Qty: 1 **Buy Now** **Queue**  
5.0001 BTC

**Escrow: Buyer has to finalize after delivery (protection of buyer)**

**Product Description**

For sale is an Interordnance R94 Straight-Pull-Repeater, which has been made in Austria by Interordnance. It's a 7,62x39mm caliber and operated by a simple straight-pull and safety lock. It comes with 2 magazines and 40 Rounds of FMJ Ammo. It is in good condition as you can see for yourself in the pictures.



## The ethical code of an honourable merchant

- »Mein Sohn, sey mit Lust bey den Geschäften am Tage, aber mache nur solche, dass wir bey Nacht ruhig schlafen können.«
- "My son, attend with zeal to thy business by day; but do none that hinders thee from thy sleep at night."

# AlphaBay Market Rules for Sellers: Ethical Code in the Underworld

## Seller Account

Here you can activate your seller account. Take time to read the seller rules below, check the box, and click the button. After that, you will be able to create listings and start selling here.

**#1: FE (Finalize Early) is not permitted. This is to avoid potential exit scams. All transactions must be dealt through Escrow, unless you get explicit permission later.**

#2: Digital orders auto-finalize after 48 hours, and physical orders auto-finalize after 14 days.

#3: If you get too many scam reports, **we may revoke your seller account** at any time.

#4: There is a **USD \$100 vendor bond** (0.2587 BTC at the current rate), refundable upon closure of account if in good standing.

#5: All sellers must have a PGP key in their profile before starting to sell.

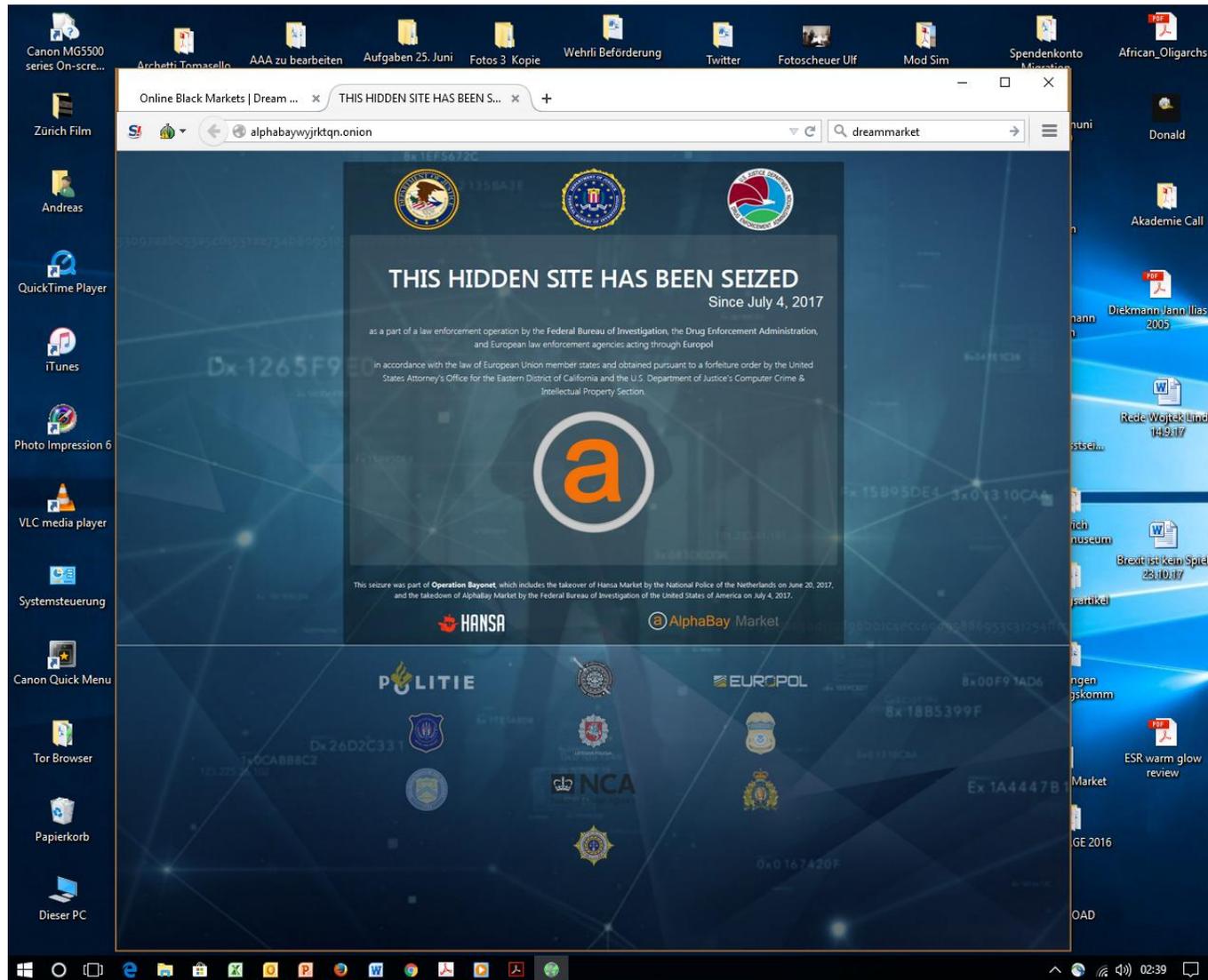
**#6: Prostitution, child porn, and murder services are not permitted. Personal information about Russian citizens is also prohibited.**

#7: Any dox threat will result in an immediate ban.

#8: It is not mandatory but strongly recommended that you enable 2FA on your account. If you get hacked, there is nothing we can do. Use the security features.

I have read and accept the rules mentioned above.

Alphabay market  
was closed by a  
joint operation of  
Netherland police  
And FBI in July  
2017



# Exit Scam: A Further Trust Problem

The screenshot shows a web browser window with the URL <https://dreammarketdrugs.com/top-10-most-popular-darknet-marketplaces/>. The page content includes:

- 2. Nucleus Market**
  - Nucleus Market**
  - Nucleus is another well used marketplace that has been around since late 2014. The site has many users but mixed reviews. In December 2015, many vendors were simply locked out of their accounts, sparking rumors of admins stealing Bitcoin. Nucleus has apparently resolved the issues now.
  - Nucleus is GONE. They performed an EXIT SCAM and took everyone's bitcoins with them.**
  - Nucleus Market URL:** <http://nucleusmarket.org/>
  - More Info:** <http://darkwebnews.com/darkwebmarkets/nucleus-market/>
  - User Guide:** <http://nucleusmarket.org/>
- 2. Dream Market**
  - Dream Market**  
Established 2013
  - Dream Market is a smaller marketplace than say Nucleus or AlphaBay; however, the quality of sellers and their products appears to be quite good. Dream Market has many refugees

The browser's address bar shows the search term "dreammarket". The desktop background is blue with various icons, and the taskbar at the bottom shows the time as 02:34.

## Cooperation on illegal and completely anonymous markets

- ▶ Mostly fixed price offers
- ▶ Payment in bitcoins (tumbling service)
- ▶ Reputation yields additional information but is not a sufficient guarantee of cooperation.
- ▶ Escrow: Institutional device to reduce the trust problem (as well as other institutional market regulations)
- ▶ Ethical Rules of conduct!

The mixture of institutional rules (escrow service etc.) and reputation ensures:

- ▶ „Order Without Law“

# What to do?

- ▶ In principle, **reputation systems** (possibly supplemented by other institutional mechanisms) are very **efficient, decentralized** mechanisms to sustain cooperation.
- However, there is the risk that **social bots and faked ratings will undermine** and eventually destroy reputation systems. My research is also concerned with suggestions to mitigate these risks.
- **Design of reputation institutions matters!** (One-sided, double-sided, double-sided blind systems etc. make a difference.) The effect of market regulations may depend on culture and social context.
- There is also **misuse of reputation scores** by companies (secret algorithms, e.g. Research Gate, credit scores etc.) and by authorities (e.g. China's experiments with citizen score)!
- **There are limitations and negative side effects of decentralized reputation systems:** hospitals, universities, **reputation scores in science?** Often reputation scores set wrong incentives!

**“The most  
expensive  
item sold on  
eBay**

**\$168 million!**



**“The most expensive item sold on eBay** to date is a Frank Mulder designed Gigayacht, which auctioned off for an incredible \$168 million, in 2006. The yacht was purchased by Russian billionaire, [Roman Abramovich](#) who rose to fame and riches by owning the investment company, Millhouse LLC and the Chelsea Football Club. At 405 feet long, his new ginormous yacht includes two VIP suites, a children’s cabin, guest cabins, a gym, movie theater, spa, elevator and helicopter pad. We’re not sure why the yacht’s manufacturers chose to sell it on eBay, but because of their decision and Abramovich’s bid, history was made.”

<http://www.therichest.com/luxury/most-expensive/top-10-most-expensive-items-ever-sold-on-ebay/>



## ► Social Marketing: Buy Facebook likes

The screenshot shows a web browser window with the URL [fanmondo.de/facebook-bewertungen-kaufen](https://www.fanmondo.de/facebook-bewertungen-kaufen). The main heading is "Facebook Bewertungen kaufen".

Below the heading, there is a video player for "Fanmondo.de Social Marketing - YouTube" with a duration of 0:41. A blue arrow points from the video player to a Facebook profile snippet for "Fanmondo | Facebook".

The Facebook snippet shows the URL <https://www.facebook.com>, location "Fulda, Germany", a 5-star rating, and 252 votes. It also mentions "6054 likes" and "7 talking about this".

Below the snippet, there is a section titled "Mit Positiven 5 Sterne Facebook Bewertungen, steht Ihre Unternehmensseite in den Google-Suchergebnissen auf der ersten Seite".

At the bottom left, it says "Echte deutsche Bewertungen für Ihre Fan Page oder Seite. Wir vermitteln Ihnen 5 Sterne".

At the bottom right, there is a star rating system showing "5,0" (5,0 von 5 Sternen) with 195 reviews. A progress bar indicates that 195 out of 195 reviews are 5 stars.

The Windows taskbar at the bottom shows various application icons and the system clock at 00:53.

<https://www.fanmondo.de/>

**Reputation** = an index based on ratings, e.g. the number or proportion of positive ratings

Here 100%

The screenshot shows an eBay user profile page. At the top, the eBay logo is on the left, and navigation links like 'Startseite', 'Artikel bezahlen', 'Anmelden', 'Service', and 'Übersicht' are on the right. Below the logo, there are buttons for 'Kaufen', 'Verkaufen', 'Mein eBay', 'Gemeinschaft', and 'Hilfe'. A search bar with 'Neue Suche' and 'Finden' buttons is also present. The user is logged in, with 'Hallo! Einloggen/Ausloggen.' displayed. The page title is 'Bewertungsprofil'.

The main content area shows the user's rating profile:

- Bewertungsprofil:** 2
- Positive Bewertungen:** 100%
- Mitglieder, die mich positiv bewertet haben: 2
- Mitglieder, die mich negativ bewertet haben: 0
- Alle positiven Bewertungen: 2

A red arrow points from the text 'Here 100%' to the '100%' value in the 'Positive Bewertungen' row.

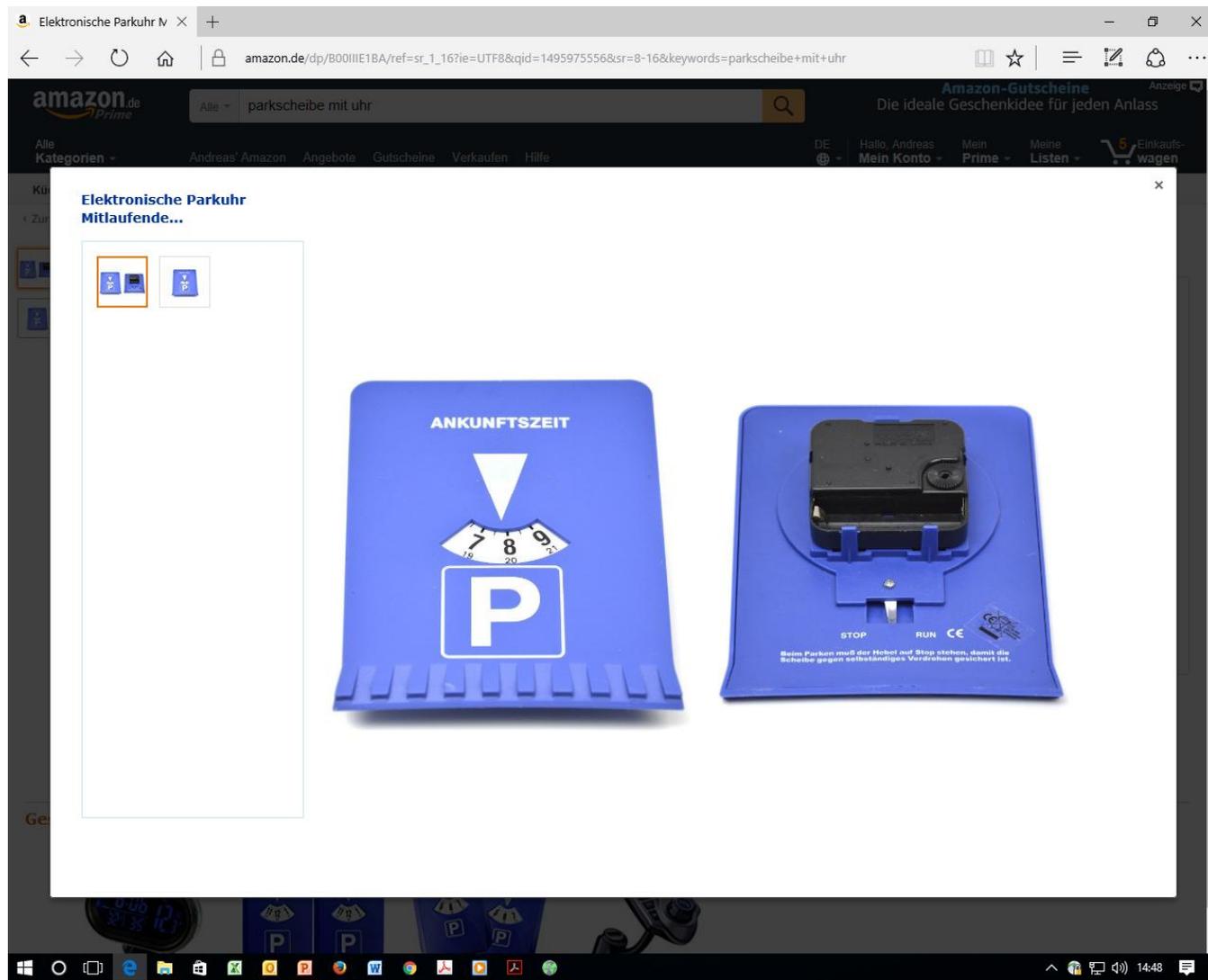
Below the profile summary, there is a table for 'Jüngste Bewertungen':

	Letzter Monat	Letzte 6 Monate	Letzte 12 Monate
positiv	1	1	2
neutral	0	0	0
negativ	0	0	0

Additional information includes 'Mitglied seit: 14.12.02', 'Ort: Deutschland', and a list of links: 'Bisherige Mitgliedsnamen', 'Angebotene Artikel', and 'Zu meinen bevorzugten Verkäufern hinzufügen'. A button 'Mit Mitglied Kontakt aufnehmen' is also visible.

At the bottom, there is a section for 'Bewertung erhalten' with tabs for 'Von Käufern', 'Von Verkäufern', and 'Alle abgegebenen Bewertungen'. It shows 2 evaluations for 'andreasdie' (0 in mutual agreement). The table below lists these evaluations:

Bewertungskommentar	Von	Datum/Uhrzeit	Artikelnummer
super gelaufen, gerne wieder, mit bestem Dank von www.ebc-gmbh.de	Verkäufer <a href="#">ebcgmbh</a> (5620 ★)	11.01.05 11:21	<a href="#">5147615317</a>
Vielen Dank & weiter SO ...	Verkäufer <a href="#">onlineworldshop24</a> (1865 ★)	02.06.04 16:21	3292195540



Parking disc with clock. (Not illegal to buy or sell but illegal in Germany when displayed in a parking car with clock switched on!)

	(-177.77)	(-151.23)	(-131.53)	(-101.92)
<b>Kilometers (km/10k)</b>	-0.0353***	-0.0349***	-0.0331***	-0.0331***
	(-126.19)	(-125.85)	(-94.74)	(-92.83)
<b>Horsepower (hp/10)</b>	0.0575***	0.0489***	0.0538***	0.0459***
	(243.67)	(170.22)	(120.90)	(99.27)
<b>Diesel (0/1)</b>	0.0976***	0.0911***	0.0754***	0.0722***
	(73.73)	(78.29)	(37.88)	(40.37)
<b>Warranty (0/1)</b>	0.0175***	0.0128***	0.0158***	0.00934***
	(12.06)	(9.28)	(5.08)	(3.61)
<b>Rating Average (1-5)</b>	0.00552***	<b>0.00497***</b>	0.0110***	<b>0.00874***</b>
	(5.20)	(5.18)	(4.02)	(3.51)
<b>Car Models (Df=19)</b>	No	Yes	No	Yes
<b>Car Features (Df= 14)</b>	No	Yes	No	Yes
<b>Constant</b>	9.491***	9.500***	9.482***	9.499***
	(1811.69)	(1375.65)	(749.94)	(719.51)
<b>Observations</b>	36431	36431	42696	42696
<b>Adjusted R<sup>2</sup></b>	0.911	0.933	0.904	0.923
<b>F</b>	52798.4	10585.2	18864.6	3848.2
<b>df</b>	6	28	6	28

- Warranty and Reputation (Dealers only) In these models, we drop 13'005 (5688+7317) cases from private sellers. Additionally, we also drop 16'746 cases where the average rating is undisplayed because the ratings are hidden or the number of ratings is zero. F statistics in parentheses.
- \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

# Autoscout24

Data from more than 40'000 offers of second-hand VW Golf cars were collected from the platform Autoscout24 using web crawling Software.

Indep. Variable	log (price)	
Age in Years	-0.091	
Mileage	-0.028	
Horsepower [PS]	0.006	
Warranty	0.016	
<b>Reputation</b>	<b>0.011</b>	
Constant	9.504	
Adj. R2	0.893	
N	42696	

Siow/Tobler & Diekmann/Wehrli 2016 (preliminary results). All coefficients are significant for  $p < 0.001$ .

► Car dealers voluntarily granting a **warranty** claim higher prices (1.6% according to the analysis of 42'696 VW Golf offers on Autoscout24.)

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# Autoscout24

Data from more than 40'000 offers of second-hand VW Golf cars were collected from the platform Autoscout24 using web crawling Software.

Indep. Variable	log (price)	log (price) for Golf TDI
Age in Years	-0.091	-0.085
Mileage	-0.028	-0.034
Horsepower [PS]	0.005	0.005
<b>Warranty</b>	<b>0.016</b>	<b>0.017</b>
<b>Reputation</b>	<b>0.011</b>	<b>0.012</b>
<b>„Dieselgate“ (before/after Oct. 2015)</b>	-	<b>-0.039</b>
Constant	9.476	9.638
Adj. R2	0.898	0.882
N	42696	3964

Siow/Tobler & Diekmann/Wehrli 2016 (preliminary results). All coefficients are significant for  $p < 0.01$ .

- ▶ Car dealers voluntarily granting a **warranty** claim higher prices (1.6% according to the analysis of 42'696 VW Golf offers on Autoscout24. Besides: the impact of “Dieselgate” is measurable as a price reduction of 3.9%)
- ▶ Smaller but in most models significant coefficients in fixed-effects regression with May and October data

## Empirical analysis of auction data shows:

1. Buyers pay for reputation („premium“ on reputation).
2. Sellers have an incentive to invest in reputation, i.e. to behave cooperatively.
3. Sellers choose payment mode („second mover advantage“).
4. A large proportion of buyers is motivated to give feedback: Both motives are present: strategic and altruistic, „strong reciprocity“
5. Simple institutional setting to ensure cooperation! Emergence of institutional rules: 1. Buyer's choice of seller, 2. Advance payment, 3. Seller shipping the product in quality advertised, 4. Buyer's and seller's feedback.

▶ «Strong reciprocity» supports feedback. Note: without altruistic motives the feedback system would break down and the market would collapse.

▶ Similar with other institutions (tax compliance, recycling etc.): Important not to destroy the intrinsic motivation of low cost contribution to the public good!

# Effect of Reputation on Price

**Table 2.** Effect of Reputation on Sales and Prices

	Product Sold (0/1)			Selling Price			Selling Price (with Fixed Effects)			
	1	2	3	4	5	6	7	8	9	10
	New Mobile Phones	Used Mobile Phones	DVDs	New Mobile Phones	Used Mobile Phones	DVDs	New Mobile Phones	Used Mobile Phones	DVDs	DVDs
Seller's positive ratings (log)	.344* (.136)	-.019 (.064)	.117** (.040)	.005*** (.001)	.008* (.003)	.053*** (.015)	.027** (.010)	-.002 (.045)	.016*** (.002)	.005 (.007)
Seller's negative ratings (log)	-.670* (.301)	-.207 (.132)	-.145* (.058)	-.013*** (.002)	-.018** (.006)	-.101** (.035)	-.055 (.034)	-.025 (.033)	-.012** (.005)	-.036** (.014)
McFadden <i>R</i> -squared	.858	.678	.133							
<i>R</i> -Squared				.844	.513	.111				
Number of observations	5,499	9,128	339,517	5,269	8,727	180,881	1,612	1,944	113,276	103,030
Number of sellers	4,341	7,687	33,166	4,242	7,474	30,018	585	691		6,901
Number of titles									18,054	15,964

*Note:* Models 1, 2, and 3: Coefficient estimates of logistic regressions are shown; the binary dependent variable is equal to one for successful auctions. Models 4, 5, and 6: Coefficient estimates of OLS regressions are shown; the dependent variable is the logarithm of the selling price (in Euros). Models 7, 8, 9, and 10: Coefficient estimates of fixed-effects regressions are shown (seller fixed effects in Models 7 and 8, title fixed effects in Model 9, title and seller fixed effects in Model 10); the dependent variable is the logarithm of the selling price (in Euros). Numbers in parentheses are robust standard errors (adjusted for seller-clusters). Models contain various control variables (starting price, length of product description, number of competing offers, and dummies for private profile, verified identity, Me-Page, PowerSeller, auction picture, thumbnail listing, bold listing, payment modes, auction duration, time and date of auction ending, and product subcategory); for detailed results see the online supplement.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

- ▶ Significant effect of reputation on price („premium on reputation“)
- ▶ Negative ratings have a much larger effect than positive ratings!
- ▶ In accordance with many other studies. However, here with FE models and panel data.

Diekmann, A., Jann, B., Przepiorka, W., Wehrli, S., 2014.

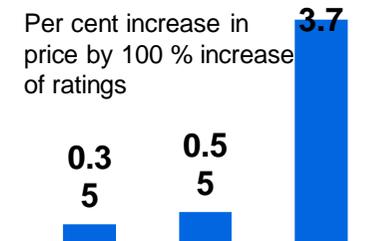


Table 4. Hazards of Positive and Negative Feedback in the DVD Market

	Positive Feedback		Negative Feedback	
	11	12	13	14
	Buyer	Seller	Buyer	Seller
Positive first move by partner (time-dependent)	5.106*** (.112)	13.754*** (1.013)	.003 (.004)	-.006** (.002)
Neutral first move by partner (time-dependent)	.410 (.732)	2.176*** (.461)	-.011** (.004)	.440*** (.109)
Negative first move by partner (time-dependent)	-.544 (.327)	1.859*** (.461)	.535** (.166)	1.871*** (.311)
Positive ratings (log)	-.880*** (.183)	-.421 (.234)	-.025* (.012)	-.012** (.004)
Negative ratings (log)	-.616 (.508)	-.225 (.258)	-.102* (.051)	-.008 (.006)
Partner's positive ratings (log)	-.840*** (.137)	-.259 (.269)	.017*** (.005)	.021*** (.006)
Partner's negative ratings (log)	1.023*** (.259)	-.894 (.755)	-.043** (.014)	-.059 (.035)
Previous interaction rating				
Received only	-.067 (.459)	.943 (.596)		
Provided only	-2.051*** (.428)	-1.448* (.676)		
Received and provided	-1.147*** (.219)	-.158 (.286)		
Received or provided			.002 (.005)	.006* (.003)
Number of observations	96,055	96,055	96,055	96,055
Number of events	80,601	80,343	310	223
Number of sellers	9,309	9,309	9,309	9,309
Number of buyers	26,188	26,188	26,188	26,188

Note: The table shows coefficient estimates for effects on the conditional probability of submitting a rating on a specific day given that no rating had been submitted yet (scaled by a factor of 100) for discrete-time linear probability models (LPMs) with seller and buyer fixed effects (standard errors in parentheses, adjusted for buyer-clusters in Models 11 and 13 and for seller-clusters in Models 12 and 14). Time indicators parameterizing the baseline hazard are not displayed.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

Seller (buyer) initiates positive feedback:

Buyer (seller) responds to positive feedback:

Evidence for „strong reciprocity“ of buyer

And, to some degree, strategic rating of seller

Strong(er) response of seller

Strong response of buyer

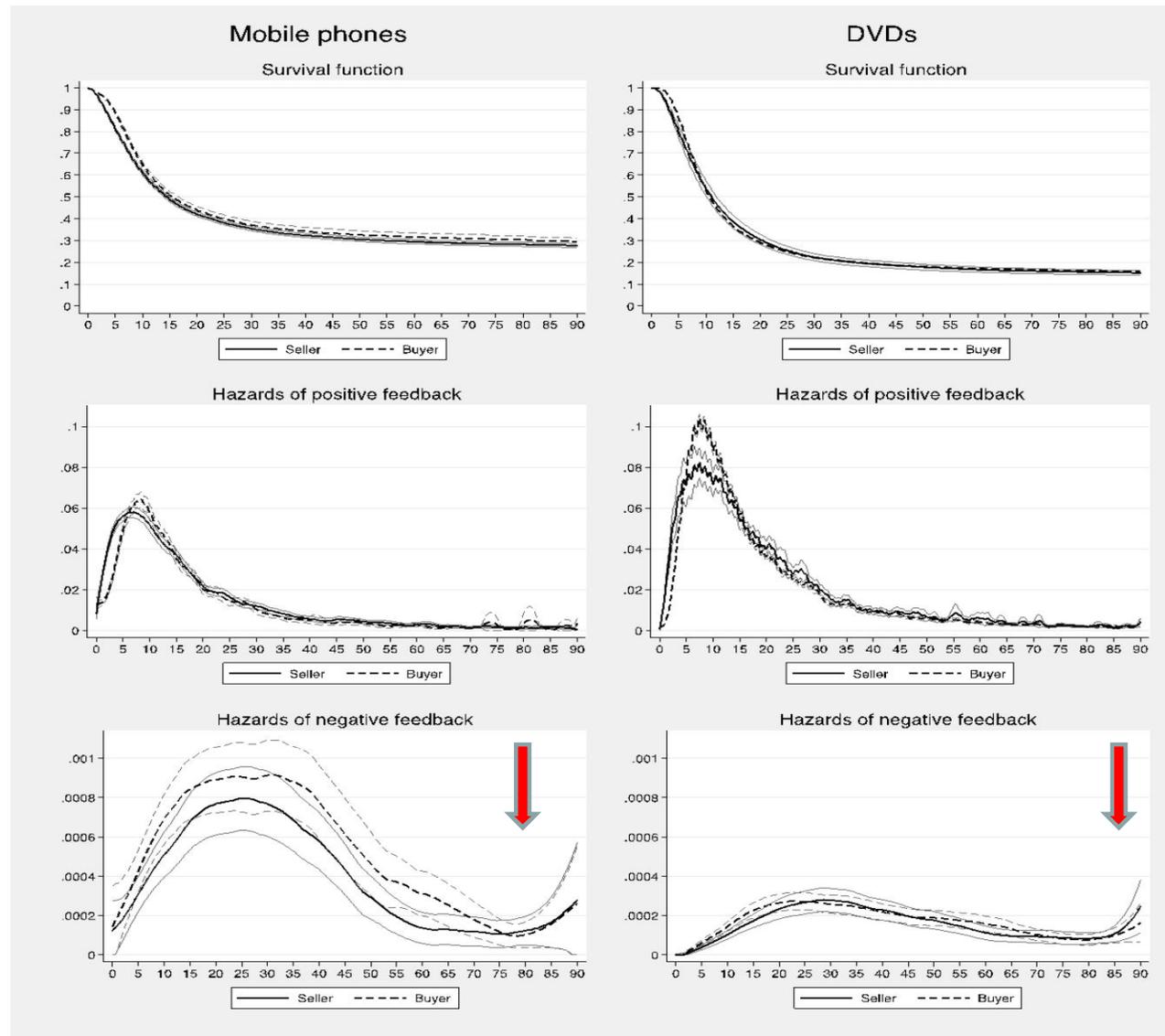


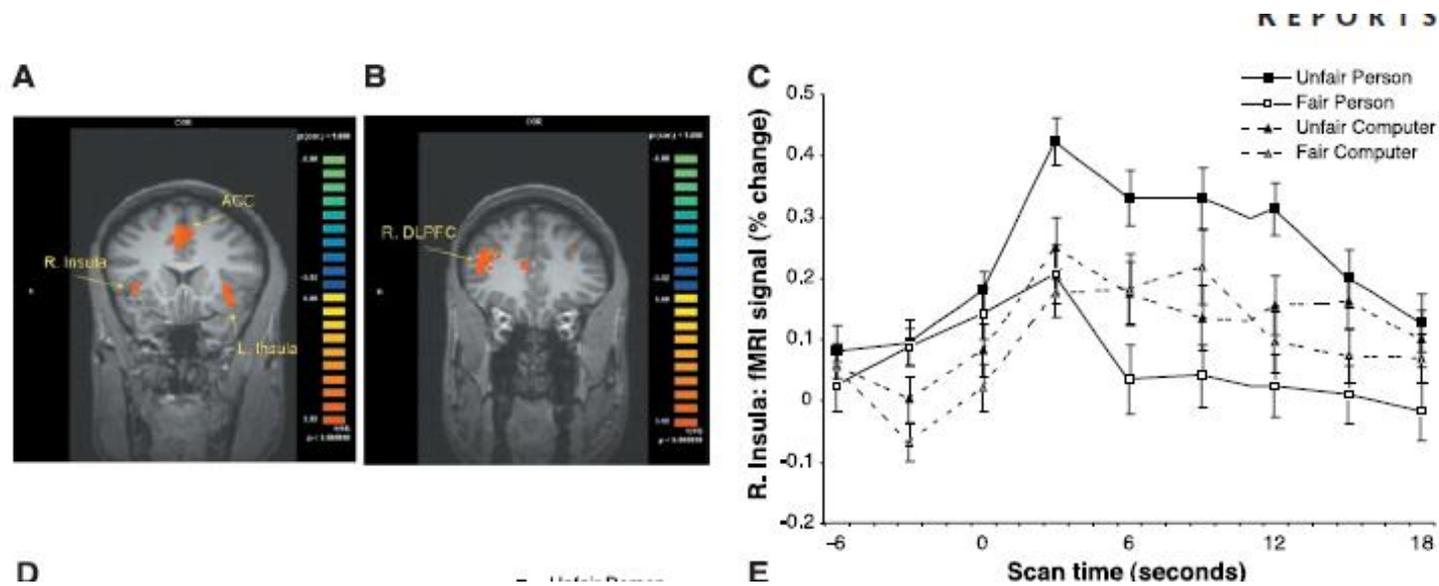
Figure 1. Survival Functions and Hazard Rates of Sellers' and Buyers' Rating Decisions

Hazard rate  
(conditional  
probability) of  
**positive** feedback

Hazard rate  
(conditional  
probability) of  
**negative** feedback

► Strategic motive

# Sanfey et al., 2003. The Neural Basis of Economic Decision Making in the Ultimatum Game.



„Hard wired“ tendency of reciprocity in Humans?

Subjects playing the ultimatum game in an fMRI scanner

# „Monkeys reject unequal pay“. Reciprocity and fairness. An Experiment with Capuchine Monkeys

Preference order of probands

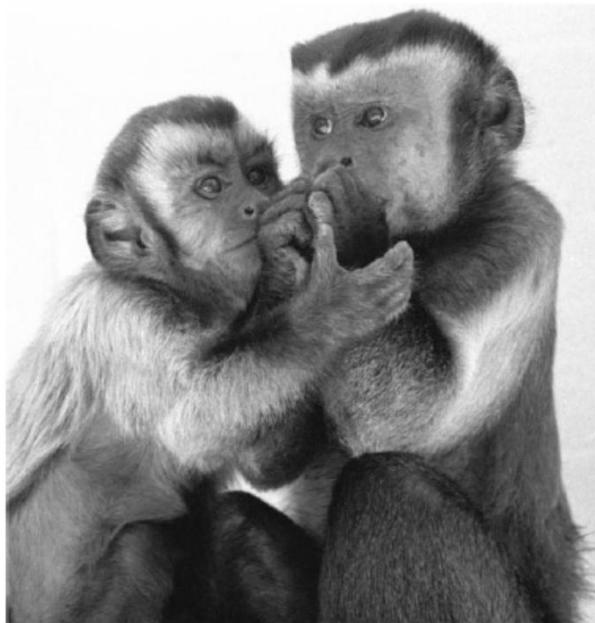


Figure 3 A juvenile capuchin monkey shows cheek-to-cheek begging to an eating adult male, cupping his hand next to the adult's food in solicitation. This primate is exceptionally tolerant and readily shares food, which may be a precondition for the reported reactions to reward division.

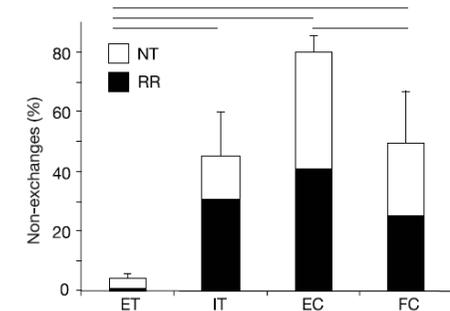
## Experimental Design



Control



Unequal exchange



Monkeys observe partners' exchange.

# The Power of Reciprocity

## FAIRNESS, RECIPROCITY, AND STAKES IN VARIANTS OF THE DICTATOR GAME

ANDREAS DIEKMANN

*Swiss Federal Institute of Technology*

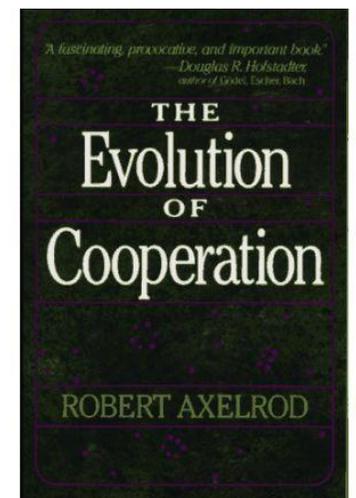
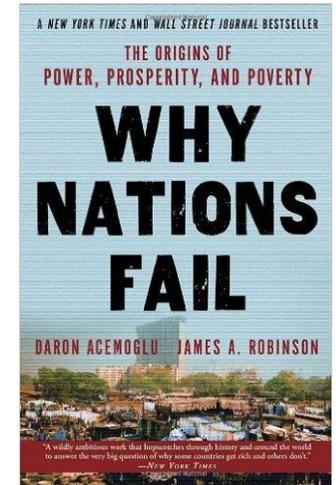
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In two experiments, the existence and extent of altruistic reciprocity is explored in the context of a simple experimental game, “the sequential dictator.” Findings show that altruistic reciprocity is frequent and robust, and the reciprocity norm does not erode if stakes are raised. Implications of the findings for social theory and further empirical research are discussed.

JOURNAL OF CONFLICT RESOLUTION, Vol. 48 No. 4, August 2004 487-505

# Institutional regulations promote cooperation: Acemoglu & Robinson (2012): „Why Nations Fail“

- ▶ Cooperative and prosperous societies have learnt to build „inclusive institutions“!
- ▶ But there is also the possibility that, under certain conditions, cooperation emerges under conditions of anarchy - even among selfish actors! (Axelrod 1984)

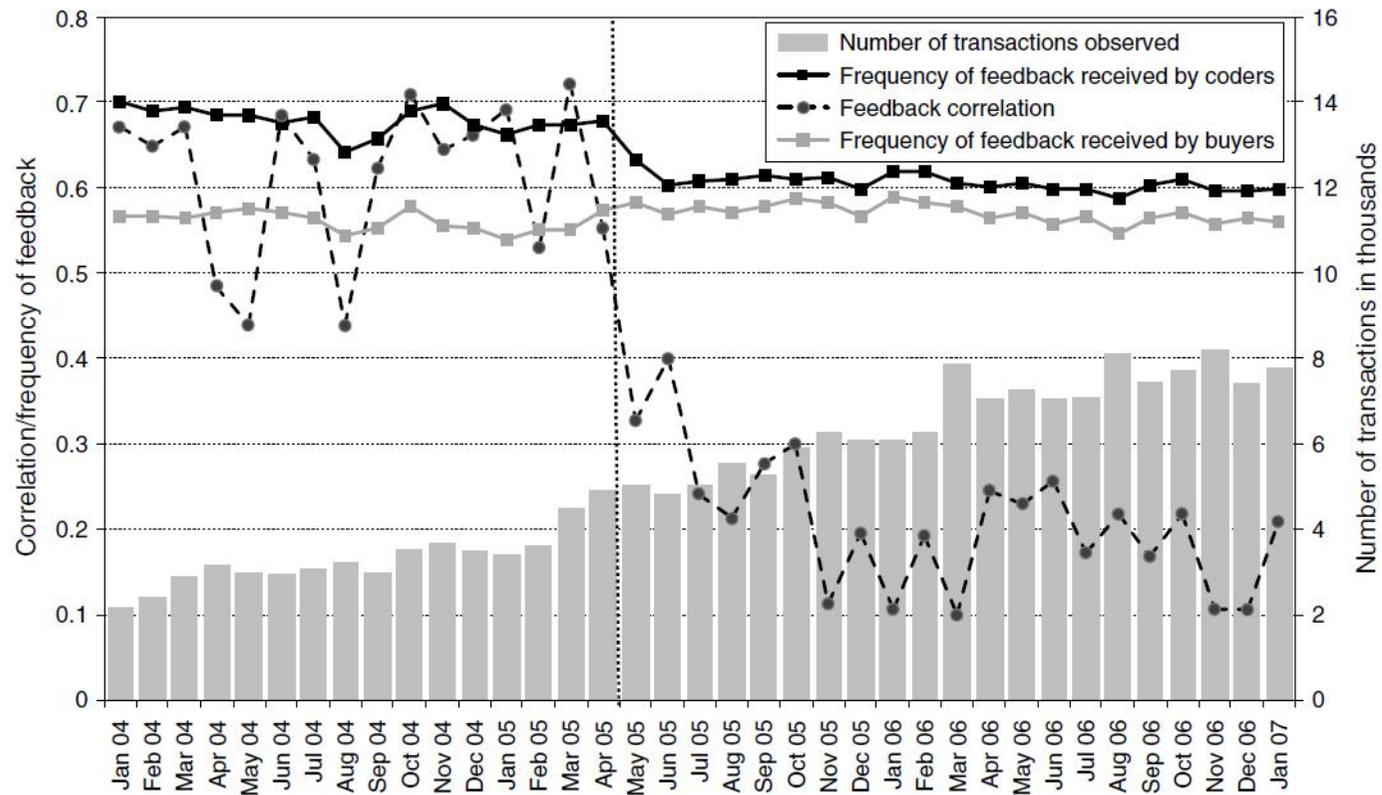


**Table 2** Feedback Frequency, Content, and Correlation on MercadoLivre and eBay China, Compared to Other eBay Platforms

	Feedback frequency			Problematic feedback given by (%)		Feedback-content correlation	Feedback-giving correlation
	<i>N</i>	Buyer (%)	Seller (%)	Buyer	Seller	Kendall's tau	Kendall's tau
eBay U.S.	10,169	74.8	76.7	1.4	1.2	0.720	0.595
eBay Germany	14,297	77.3	76.9	1.9	1.1	0.621	0.623
eBay China	2,011	9.3	19.7	5.0	6.7	0.576	0.652
Verified buyers	1,062	15.0	13.6	5.0	4.9	0.576	0.682
Unverified buyers	949	3.1	3.6		14.7		0.460
MercadoLivre Brazil	1,958	71.1	87.9	18.7	29.2	0.785	0.175

*Note.* All correlations are highly significant.

Figure 2 Feedback Frequency and Correlations Before and After the System Change in April 2005 on RentACoder.com



# How to achieve cooperation with trust problems

## Decentralized mechanisms sustaining the emergence of cooperation:

1. Moral norms, Kant: categorical imperative
2. Peer Punishment: Sanctioning norm violations (Fehr and Gächter 2001)
3. Costly signals of trustworthiness (Signaling theory), (Spence 1973, Zahavi 1975)
4. Commitments: Deposit, escrow service (Schelling 1960)
5. Repeated games: „The shadow of the future“ (Axelrod 1984)
- 6. Reputation: „The shadow of the past“**

► Trust building Institutions are based on these elements or combinations of it.

# Research program: Analysis of alternative reputation systems, its problems and the impact on society

Research question: Functioning and social cooperation on decentralized digital markets without state intervention.

Empirical research:

- Market regulation less important. Decentralized systems („The Foxes“)
- Collecting large („big data“) by web crawling (data from second-hand car market, dark net markets etc.)
- Refined statistical analysis of internet data
- Research with experimental markets in the lab

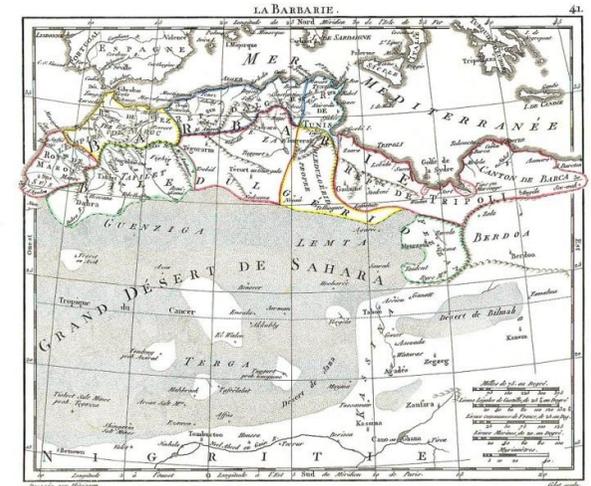
Market regulation is much more important concerning the big companies (Facebook, What's app, Credit Score, Google, Airbnb, Uber etc.) – „The Lions“

# Reputation in Science

- Bibliometric measures, citations, h-index etc?
- Various competitive systems: Web of Science (Thompson Reuters), Google Scholars, Research Gate, Academia Edu etc.
- Reputations scores set incentives (and sometimes wrong incentives) for research and publishing.
- Private companies' reputation scores are often not transparent and have an impact on scientists careers!

Historical study by Avner Greif (1989):  
Long distance trade of Mahgreb  
merchants in 11th century

- Actors are merchants and agents
- Agents had plenty of opportunities to commit fraud (e.g. reporting a lower price for the goods sold while keeping the difference).
- Asymmetric information and trust problem
- Mahgreb merchants solved the dilemma by forming a coalition and establishing a system of exchange of information, i.e. by **establishing a decentralized reputation system.**



Wikipedia Commons

## Law Merchant (Lex mercatoria)

- Long distance trade in medieval Europe
- Important trading place: Champagne Fairs in the 12th and 13th century.
- Solving the trust problem by private judges.
- Judges keep records on past behaviour of merchants, merchants pay a fee for access to information, and merchants can ask for a judgment in case a trading partner had been cheated.
- ▶ Law Merchant: Endogeneous evolution of institutions to establish a reputation system.
- ▶ Game theoretic analysis by Milgram, North, Weingast 1990, The Role of Institutions in the Revival of Trade. The Law Merchant, Private Judges, and the Champagne Fairs.

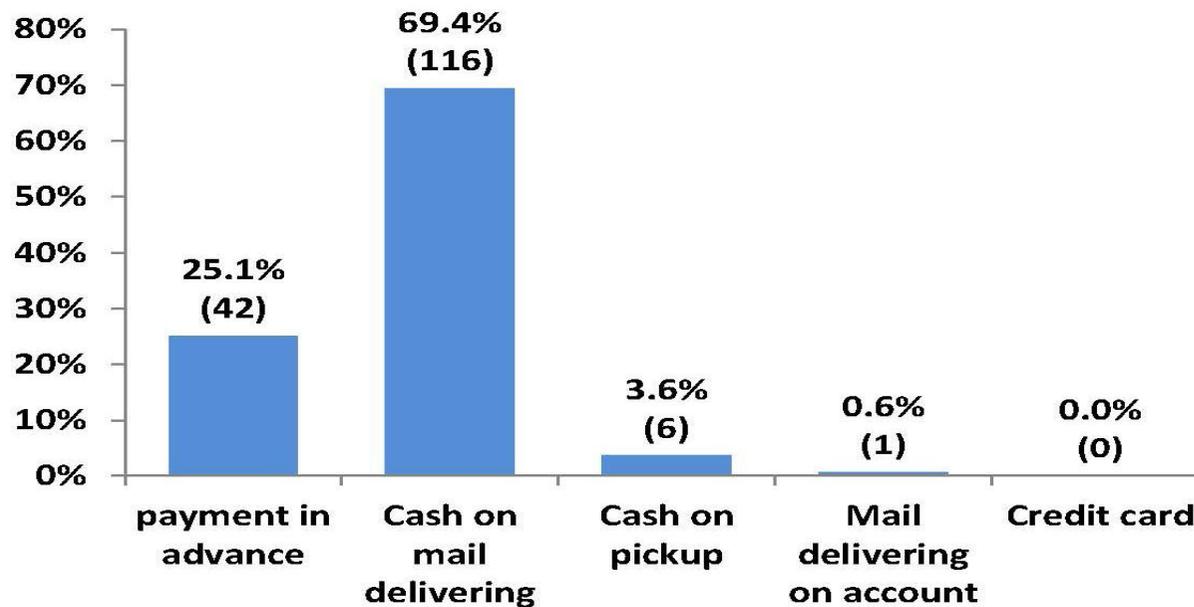


Champagne Fair, Wikimedia Commons

## Seller's Trust Problem

- Asymmetry: Buyer chooses seller while seller has to accept buyer!
- Solution to seller's trust problem: Establish payment rules in favour of seller (advance payment, cash on delivery etc.)
- „Small Data“ study with Ricardo.ch: 95 % of 165 transactions were in favour of seller (Diekmann & Wyder 2002)

## Payment Rules by Power of Seller



- ▶ Shift of power from buyer to seller
- ▶ Buyer pays in advance.
- ▶ The „strength“ of advance payment (the power of the seller) increases with the sellers' reputation.

**Ranking of asymmetry in favour of seller**

4                      3                      2                      1                      0

**Medium reputation of seller**

22.1                  7.3                  1.7                  –                  –

Data from 2001/2002 Ricardo Switzerland auction of Nokia cell phones (Diekmann and Wyder 2002; Diekmann, Jann, Wyder 2009)

# Goldbarren bei eBay



Ende Januar ersteigerte ein Schnäppchenjäger im Internet auf der Handelsplattform Ebay einen solchen Perth-Mint-Barren vom Gewicht einer Feinunze (**31,1 Gramm**) für **367 Euro**. Auf die Idee, dass daran etwas faul sein könnte, kam er nicht. Gemessen am aktuellen Goldkurs wäre **ein echter Barren 1163 Euro** wert gewesen - dreimal so viel.

Die Anbieter im Internet erfinden dazu gern Geschichten. Einer schrieb, er habe das Gold auf dem Dachboden einer verstorbenen Tante gefunden und wolle es loswerden, deshalb gebe er es billiger ab. "Gerade wenn sie im Internet kaufen, handeln manche nach dem Motto: Gier frisst Hirn", sagt Experte Meyer (Südde. Zeitung, 18.2.2017).

# Reputation

Solution to the trust and cooperation problem:

- ▶ Repeated interactions, Axelrod's „Shadow of the future“
- ▶ However, many transactions are non-repeated, single transactions.
- ▶ Cooperation problem with encounters of strangers. Solution?
- ▶ Reputation: „The shadow of the past“!

# How to achieve cooperation with trust problems

Decentralized mechanisms sustaining the emergence of cooperation:

1. Moral norms, Kant: categorical imperative
2. Peer Punishment: Sanctioning norm violations
3. Costly signals of trustworthiness (signaling theory)
4. Commitments: Deposit, escrow service
5. Repeated games: „The shadow of the future“
6. Reputation: „The shadow of the past“

# Market with uncertainty of the quality of goods

*For sellers.*—During each trading period you will have an opportunity to sell *one* shipment of “goods” to one of the buyers. The shipment you sell can vary in terms of its quality. There are three levels of quality (low, regular, super) and the higher the quality the more it will cost you to produce a shipment (a low costs 20 points, a regular costs 60 points, and a super costs 100 points). You will be asked at the beginning of each trading period what quality of goods you wish to produce. The higher the quality, the more the shipment is worth to a buyer. However, *at the time you sell the shipment the buyer will not know the quality*. After the purchase the buyer will be told the quality of the shipment he or she just bought from you.

*For buyers.*—During each trading period you will have an opportunity to buy *one* shipment of “goods” from one of the sellers. The value of a shipment to you depends on its quality. There are three levels of quality (low, regular, super) and the higher the quality, the higher its value to you (this value is known as the “redemption value”). A low is worth 40 points, a regular is worth 120 points, and a super is worth 200 points. *At the time you buy the shipment you will not know the quality* but after the purchase you will be told the quality of the shipment you bought.

Seller	Buyer
20	200 (40)
60	200 (120)
100	200 (200)

## **The Emergence of Exchange Structures: An Experimental Study of Uncertainty, Commitment, and Trust<sup>1</sup>**

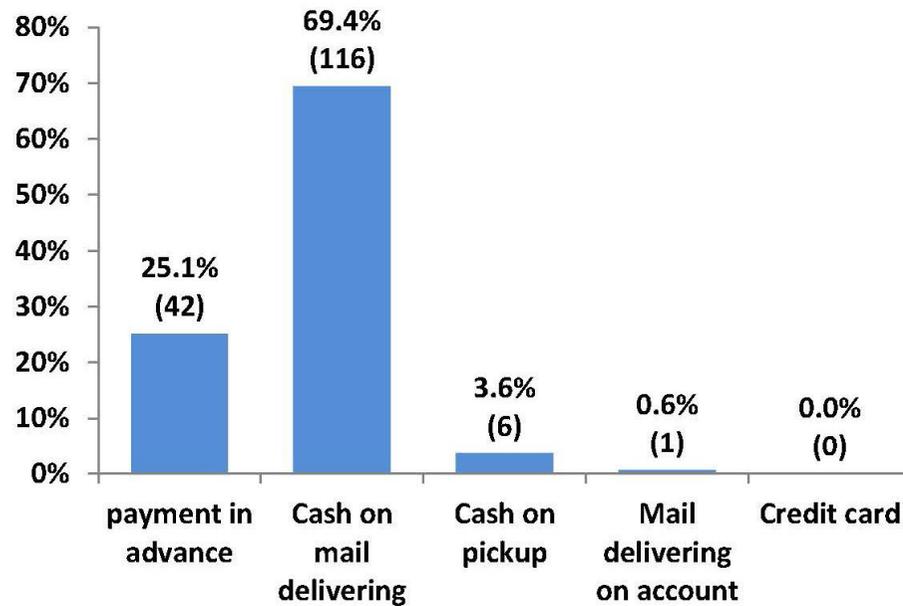
Peter Kollock  
*University of California, Los Angeles*

American Journal of Sociology 100, 1994: 313-345

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<b>Medium reputation of seller</b>	<b>22.1</b>	<b>7.3</b>	<b>1.7</b>	<b>–</b>	<b>–</b>

Data from 2001/2002 Ricardo Switzerland auction of Nokia cell phones  
(Diekmann and Wyder 2002; Diekmann, Jann, Wyder 2009)

Kollock, 1994: Lab experiments about trading behaviour on experimental markets with goods of  
a) Certain quality  
b) Uncertain quality

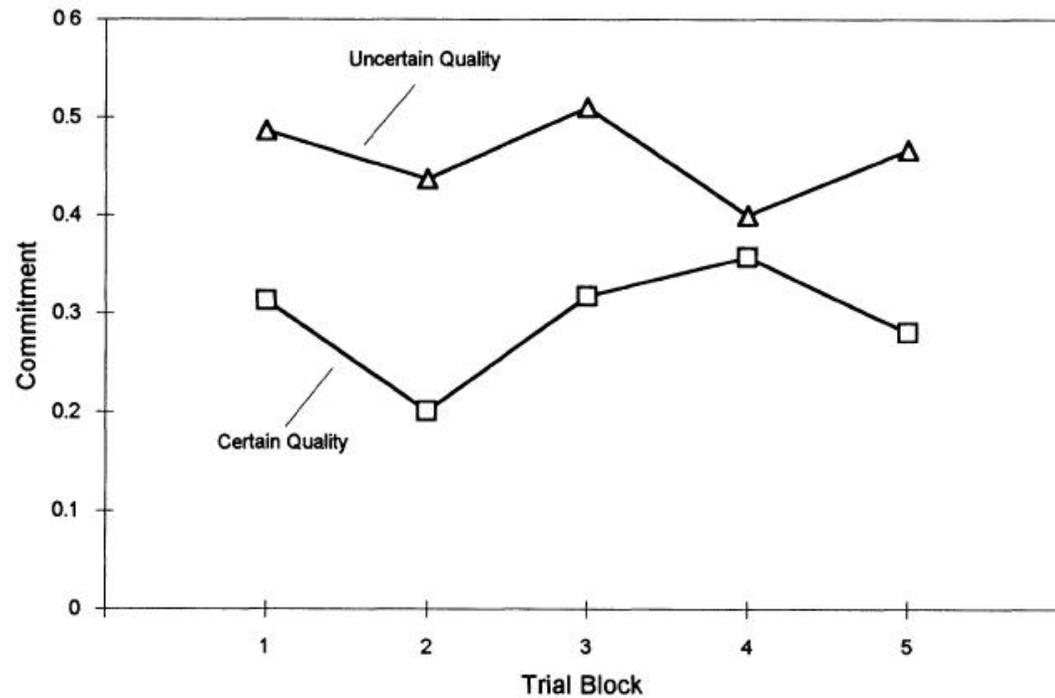


FIG. 1.—Average level of commitment

Kollock 1994

Commitment measure = Standardized network index for the tendency to deal in dyads [0, 1]

## Illegal and completely anonymous markets:

- ▶ Ethical Rules of conduct!
- ▶ Seller deposit
- ▶ Seller's account may be revoked if in bad standing
- ▶ Mandatory escrow service
- ▶ Reputation system (informing about product prices of rated transactions)
- ▶ Forum

The mixture of institutional rules (escrow service etc.) and reputation ensures:

▶ **„Order Without Law“**

Max Weber (1920)  
“The Protestant Sects and the Spirit of Capitalism”

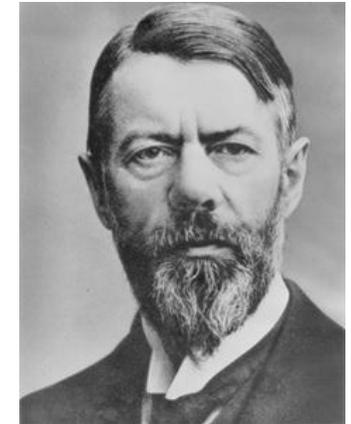


Foto Max Weber, Bavarian  
Academy of Science

After attending a baptism ceremony of a Baptist congregation, Weber learned that “... **once being baptized he will get the patronage of the whole region and he will outcompete everybody.**’ Further questions of ‘why’ and ‘by what means’ led to the following conclusion: Admission to the local Baptist congregation follows only upon the most careful ‘probation’ and after closest inquiries into conduct going back to early childhood (Disorderly conduct? Frequenting taverns? Dance? Theatre? Card Playing? Untimely meeting of liability? Other Frivolities?) The congregation still adhered strictly to the religious tradition. **Admission to the congregation is recognized as an absolute guarantee of the moral qualities of a gentleman, especially of those qualities required in business matters. Baptism secures to the individual the deposits of the whole region and unlimited credit without any competition. He is a ‘made man’**” (Weber 2002:129-130; also see Voss 1998).

## Reputation

- ▶ Evaluation of conduct
- ▶ Reliable („careful ,probation‘ and after closest inquiries“)
- ▶ Visible, easy to recognize

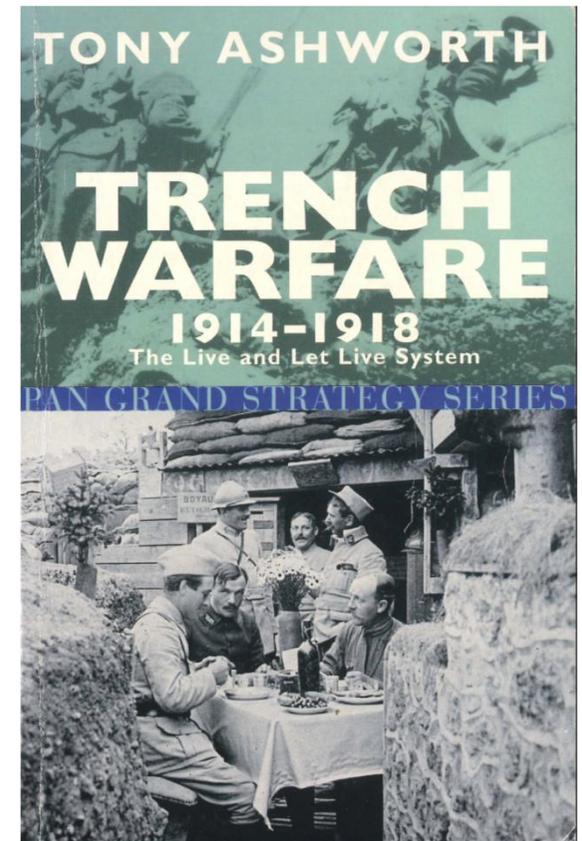
Diekmann, Jann, Wyder 2009; Voss 1998

# WW I: Emergence of cooperation among German and French soldiers in repeated interactions



18. German trenches in the Vosges sector where live and let live prevailed for long periods throughout the war.

A system of cooperation emerged among soldiers. Trench warfare led to frequent interactions among the German, British and French soldiers. Soldiers started singing christmas carols, intentionally failed to shoot on each other, and even fraternized and engaged in soccer playing between the front lines in WW I. The „live and let live system“ was explained by theorems of the theory of repeated games (Axelrod 1984, The Evolution of Cooperation)



The End



# Othello

Cassio

„Reputation, reputation, reputation! **O, I have lost my reputation!** I have lost the immortal part of myself, and what remains is bestial. My reputation, Iago, my reputation!

# Bertold Brecht, Life of Galileo

- ANDREA loudly: "Unhappy the land that has no heroes"

# Bertold Brecht, Life of Galileo

- ANDREA loudly: "Unhappy the land that has no heroes"
- GALILEO: "No. Unhappy the land that is in need of heroes."