

ICON DESIGN

THE VARIOUS FACTORS FOR DESIGNING GRAPHIC ICONS FOR INFORMATION SYSTEMS

Kevin King 2020

What are icons?

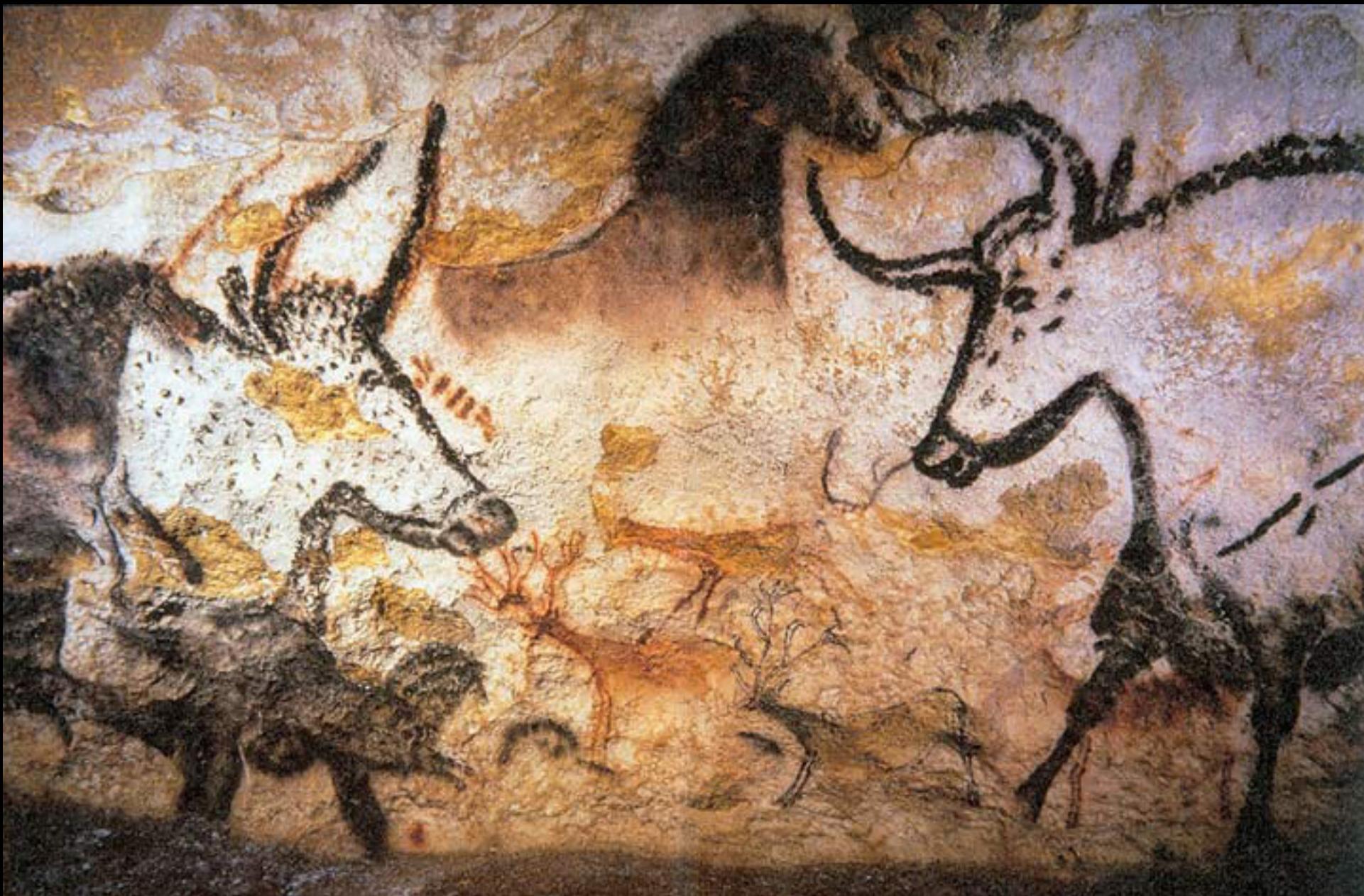
As we understand them in contemporary graphic design terms today, **icons** are symbols – typically collected within a related system series – which are primarily intended for the representation of practical concepts without the use of localized languages.



The critical aspect of icons is the fact that they can be understood by anyone, regardless of linguistic background. This means that they can work within information design systems on a global scale.

Origins of icons

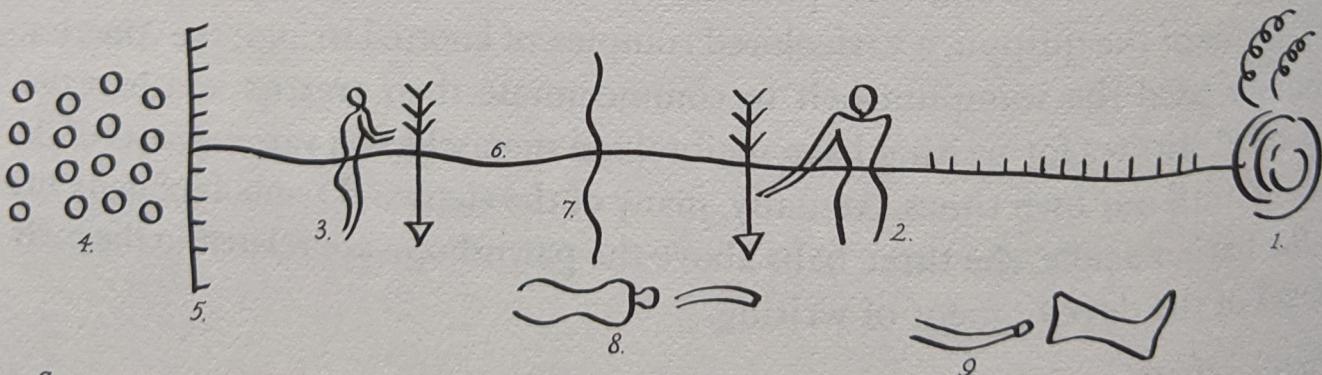
Historically speaking, icons arose as the earliest forms of human writing forms to graphically represent and preserve information and ideas.



*Example of pictograph
in which aesthetic expression
seems the dominant urge.*

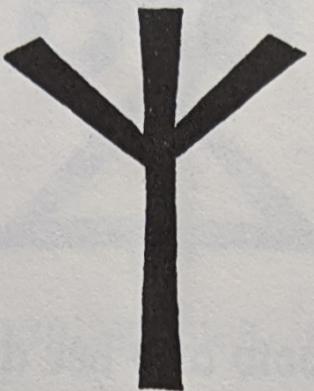


*Rock-tracing of reindeer, etc; possibly representing a journey to the far north by the man wearing snow-shoes.
Bohuslän, Sweden. Freely drawn from Du Chaillu, "The Viking Age" - Charles Scribner's Sons.*

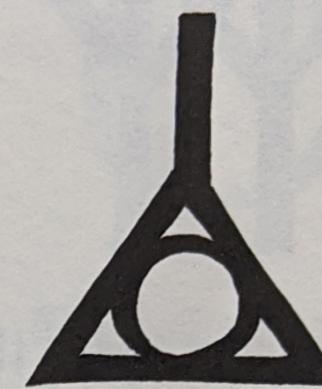


*Story of a raid by the Ojibways on the Sioux - 1. Ojibway camp 2. Ojibway chief 3. Sioux chief
4. Sioux wigwams 5. Prairie with a few trees 6. Line of march 7. River at scene of raid 8. Slain
9. Arm brought home as trophy.*

The next is a series of signs illustrating the vicissitudes of family life:



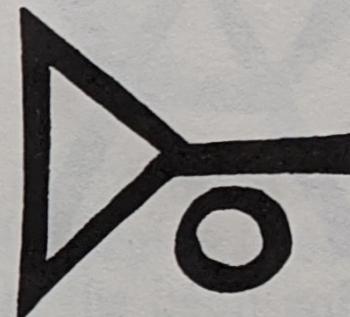
Man



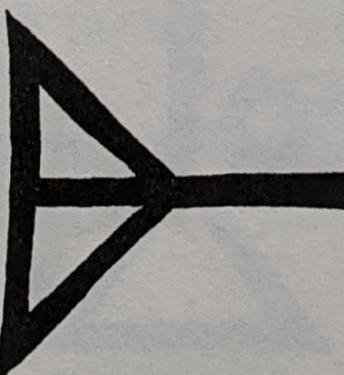
The woman becomes pregnant,



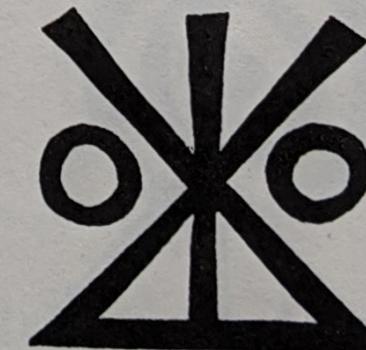
Woman



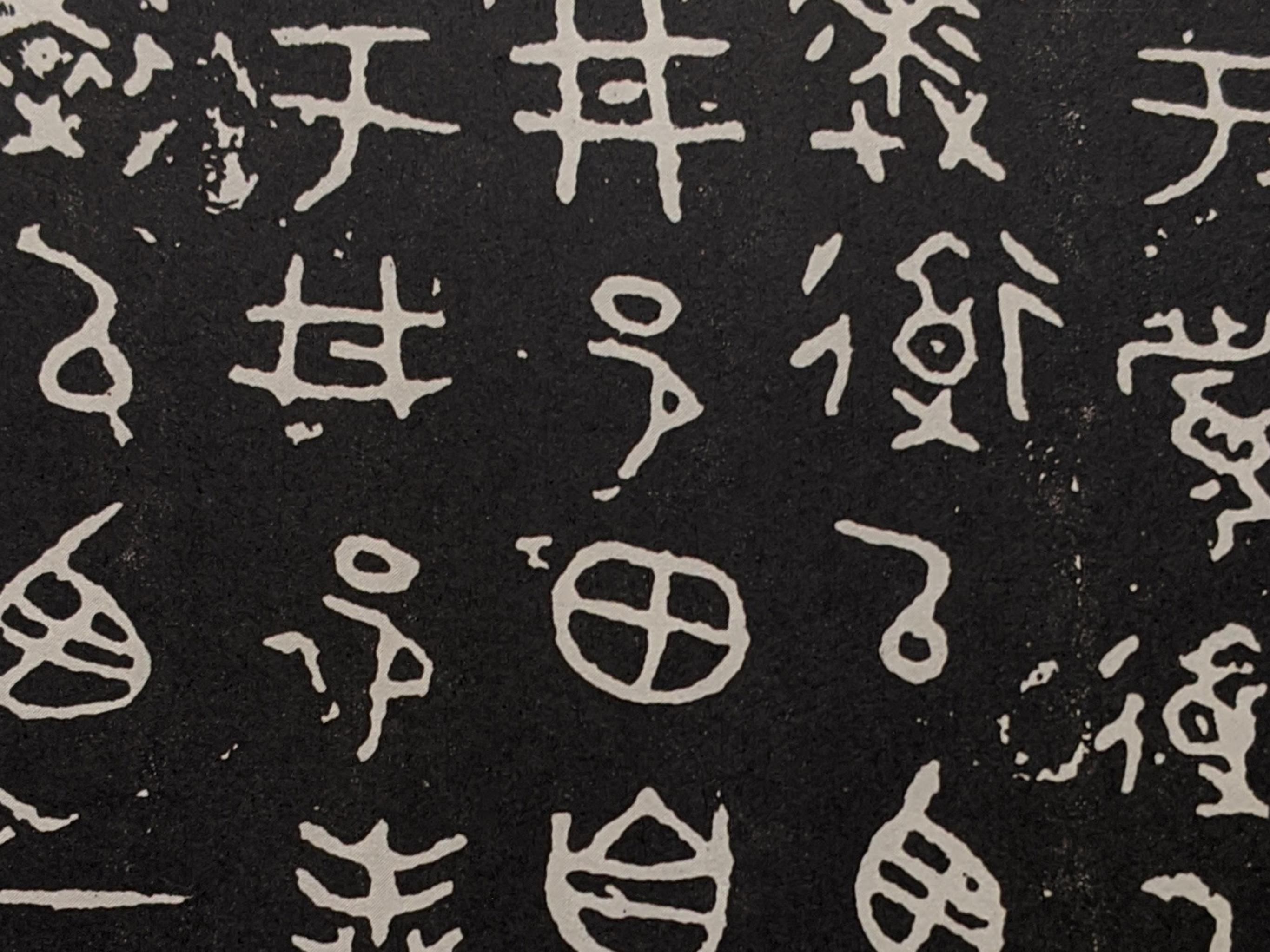
and bears a child.



Man and woman united for procreation.



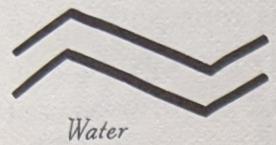
The family; man with his wife and children.



大史傷之龍
金鏡
御
秀辟不祥
未日吉
中
含易
尹
躁猶
日
八
川
二
翫
樂
富
日

漢尚方錢銘
庚辰年冬十月朔旦張邪王作書於
九龍山房

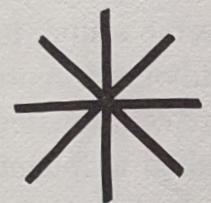
Sumerian ~ about 5000 B.C.



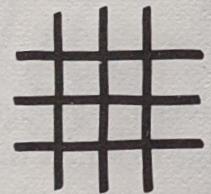
Water



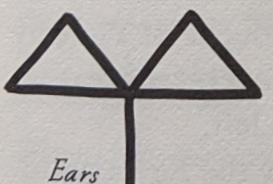
Mountains



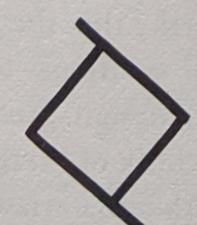
Star, Heavens



Net, Texture



Ears



Sun, Day, Light

Early Chinese ~ about 2000 B.C.



Child



Tree



Heart



Rain



Dog

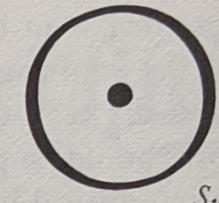


Field

Egyptian ~ about 3500 B.C.



Weeping



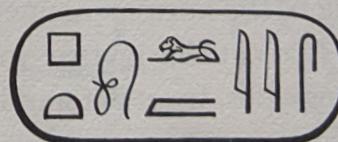
Sun



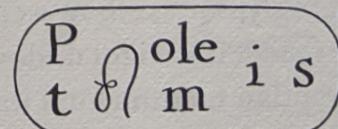
Swallow



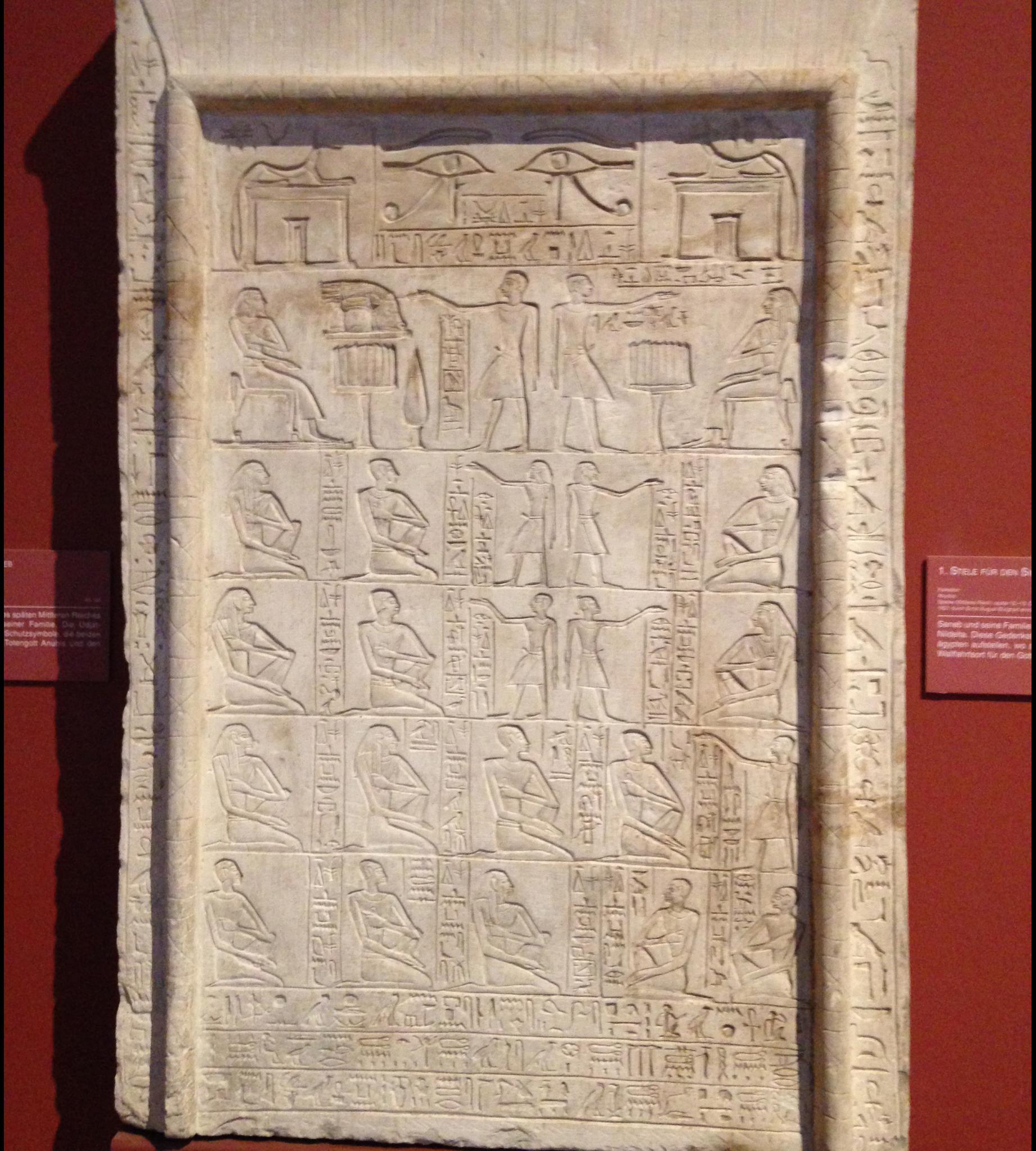
Finding



200 B.C.



Cartouche of Ptolemy with
explanatory diagram.



... sollte Mittwoch Pischis
seiner Familie. Die Udu-
Schutzsymbole, die beiden
Totengott Anubis und den

1. STELE FÜR DEN S.
...
Gebet und seine Familie
Nofret. Diese Gedanken
Ägypten aufzuteilen, wo /
Waffenamt für den Go





Isotypes

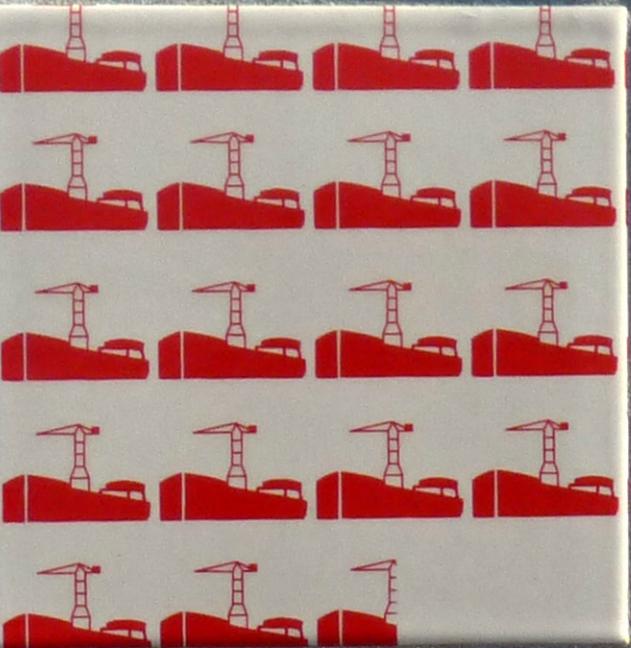
(International System of Typographic Picture Education) was developed by the Gesellschafts- und Wirtschaftsmuseum in Vienna led by Otto Neurath with artwork created by Gerd Arntz. It is a system of icons used in repetition to represent statistical data sets graphically.



= 100

gemiddelde aantal
in de laatste 2 jaar

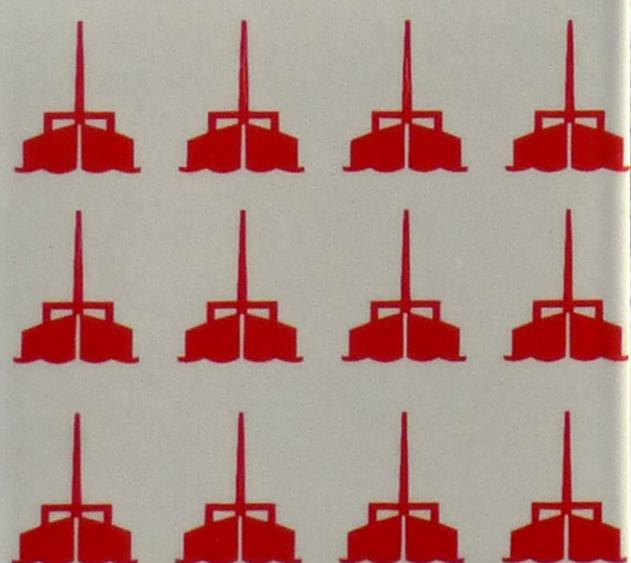
working force



= 2

dekschuiten

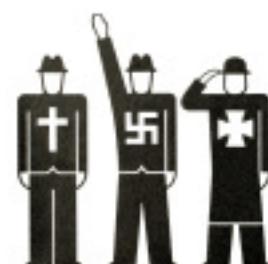
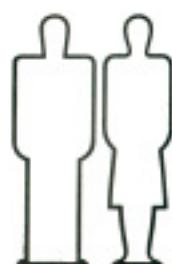
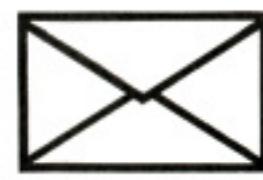
flat-bottomed boats



= 2

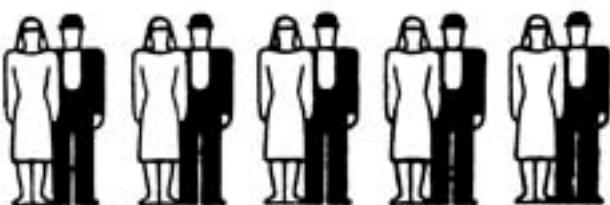
sleepboten

towboats

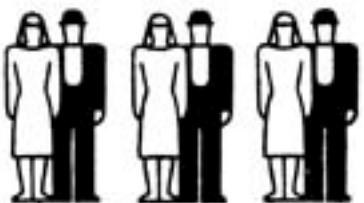


Men Getting Married in Germany in a Year

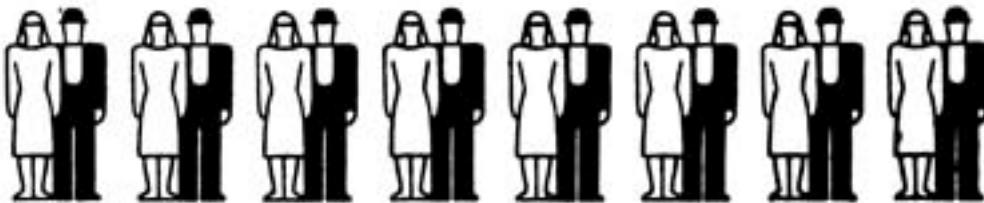
1911 - 14



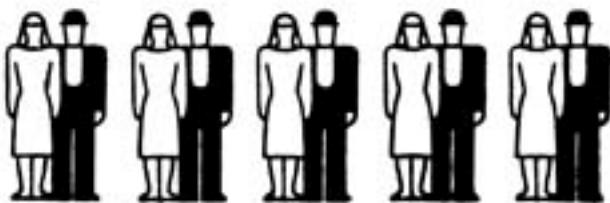
1915 - 18



1919 - 22



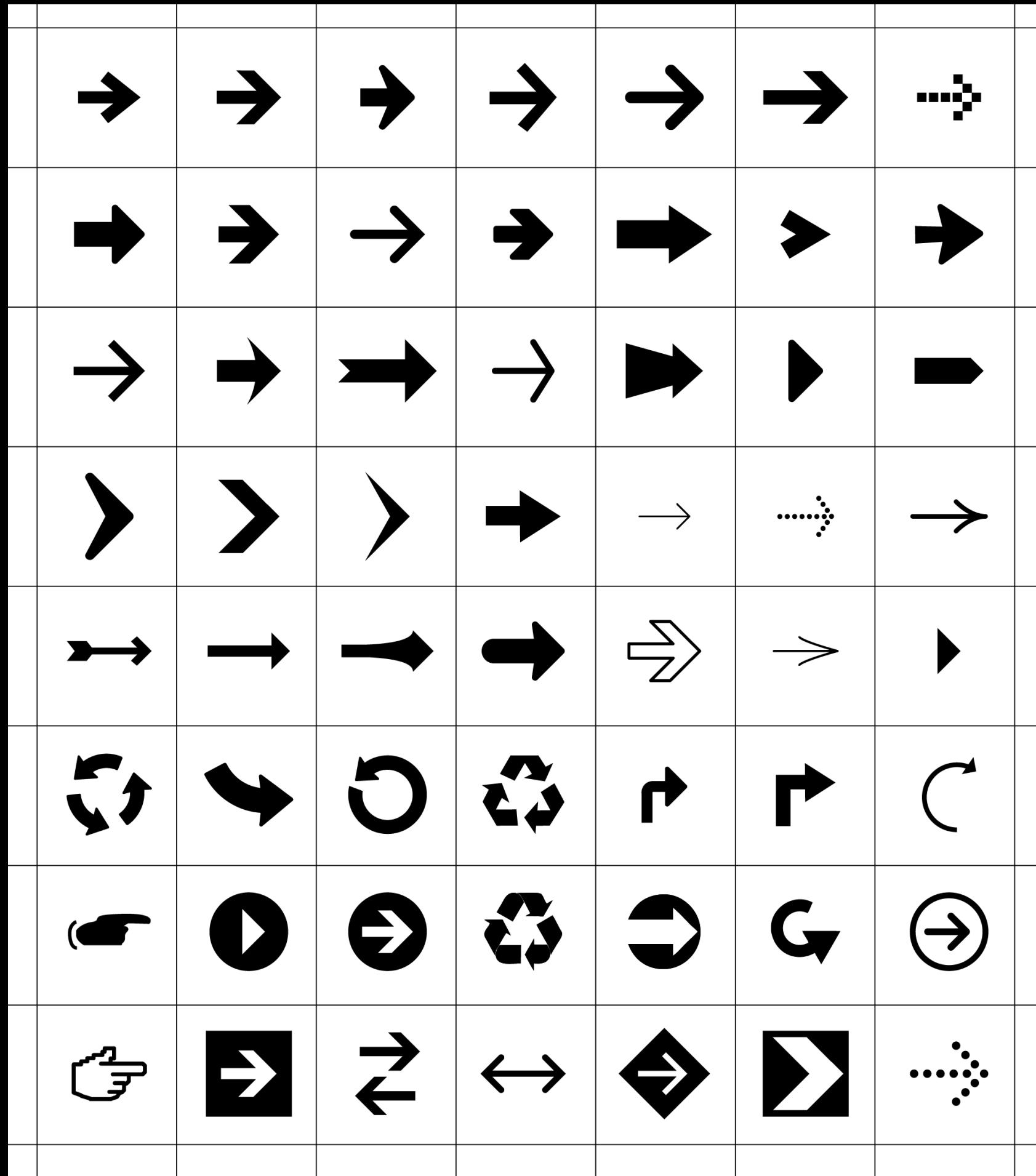
1923 - 26



1 sign for 100,000 a year

Wayfinding and icon systems

These icons primarily need to indicate locations and imply direction.



Welcome to
Amsterdam Airport Schiphol



Baggage hall



Arrivals hall



Transfer services

Gate D56



All other gates



Top Level • Bars • Restaurants



AirportSpa

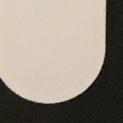


Comfort seats



Airline lounges 10-34

By invitation only



Toilets

100 m

Icons within editorial design

TOXIC CASCADE

Lethal Landscape

AFRICA'S ANIMALS are increasingly losing ground to human pressures. Habitat loss, especially to farming and grazing, is forcing people and wildlife to compete for finite space and resources. Farmers and pastoralists react with powerful weapons: potent poisons such as carbofuran that can wreak havoc not just on targeted wildlife but also on the animals and humans around them. Some 8,600 animals are known to have been poisoned during the past two decades. For every documented case, dozens go unreported.

◆ Reported wildlife-poisoning incident 2000–2018

- Highway
- Other road or path
- Railroad
- Cropland
- Rangeland

0 mi
0 km
40

Contested grassland

Wildlife and humans compete most heavily for resources in grasslands, where livestock graze and wild animals subsist.

7 lions, 2004

3 lions, 2006

3 lions, 2006

1 elephant, 2016

16 vultures, 2017

5 elephants, 2016

8 elephants, 2014

15 vultures, 3 lions,
1 eagle, 1 jackal, 2015

13 hyenas, 6 jackals, 2013

78 vultures, 2008

Olpisu Moru

SERENGETI
NATIONAL PARK

RUMA
NATIONAL PARK

MASAI MARA
NATIONAL RESERVE

Migori

Isebania

Olupisu Moru

SERENGETI
NATIONAL PARK

NATIONAL PARK

AMBOSELI
NATIONAL PARK

KILIMANJARO
N.P.

Kilimanjaro
19,340 ft
5,895 m

TSAVO
EAST

TSAVO
WEST

AMBOSELI
NATIONAL
PARK

MAKTAU

Taveta

1 Jackal, 1 lion,
vultures, 2016

1 elephant, 2017

1 elephant, 2014

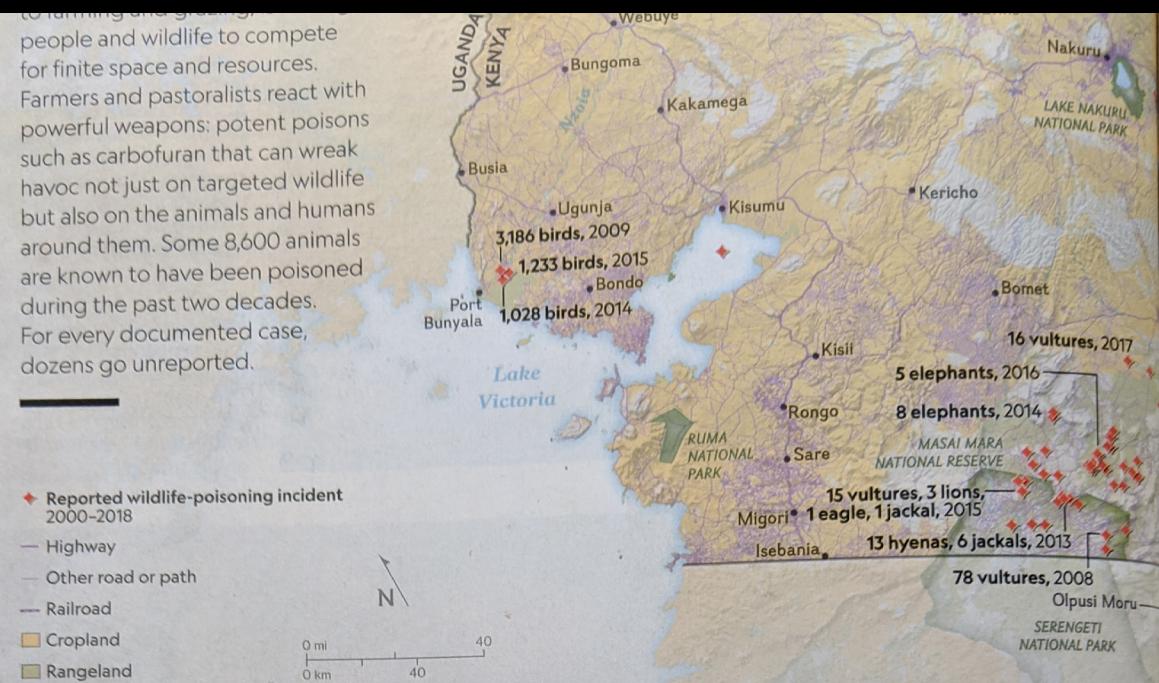
10 elephants, 2014

1 elephant, 2017

1 elephant, 2014

1 elephant, 2

to farming and grazing, people and wildlife to compete for finite space and resources. Farmers and pastoralists react with powerful weapons: potent poisons such as carbofuran that can wreak havoc not just on targeted wildlife but also on the animals and humans around them. Some 8,600 animals are known to have been poisoned during the past two decades. For every documented case, dozens go unreported.



WHY PESTICIDES ARE MISUSED

To protect livestock

Predators are poisoned in retaliation for eating cattle, chickens, and goats.



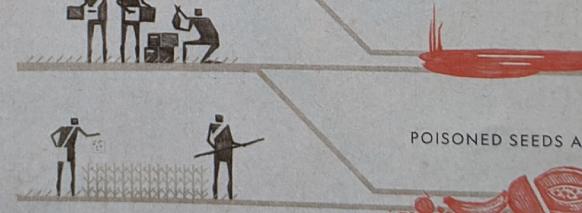
To hunt animals for trade

A China-driven global demand for animal parts—including ivory and fur—fuels the trade.



To kill animals for meat

Meat of fish and birds is sold without disclosing that the animals were killed with poison.



To safeguard crops

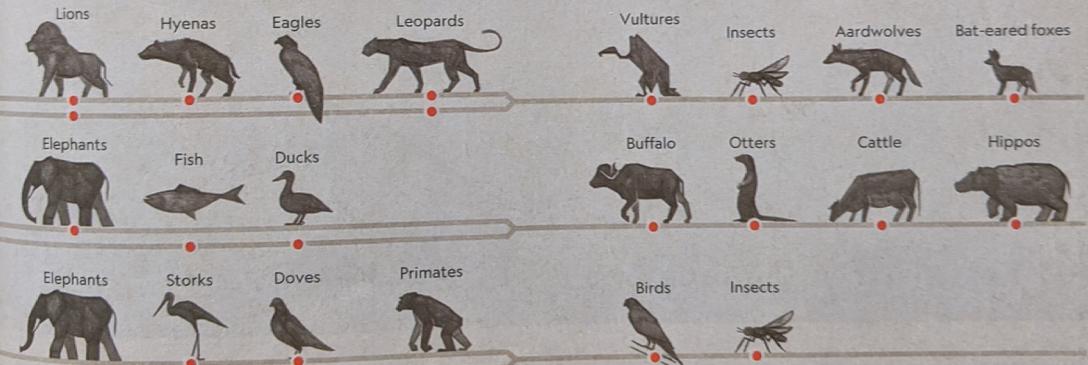
Crop-eating elephants, monkeys, and birds are targeted to reduce farmers' losses.

WHERE THEY'RE APPLIED

Pesticides are added to carcasses placed to bait wildlife as well as to natural water and food sources.

PRIMARY TARGETS

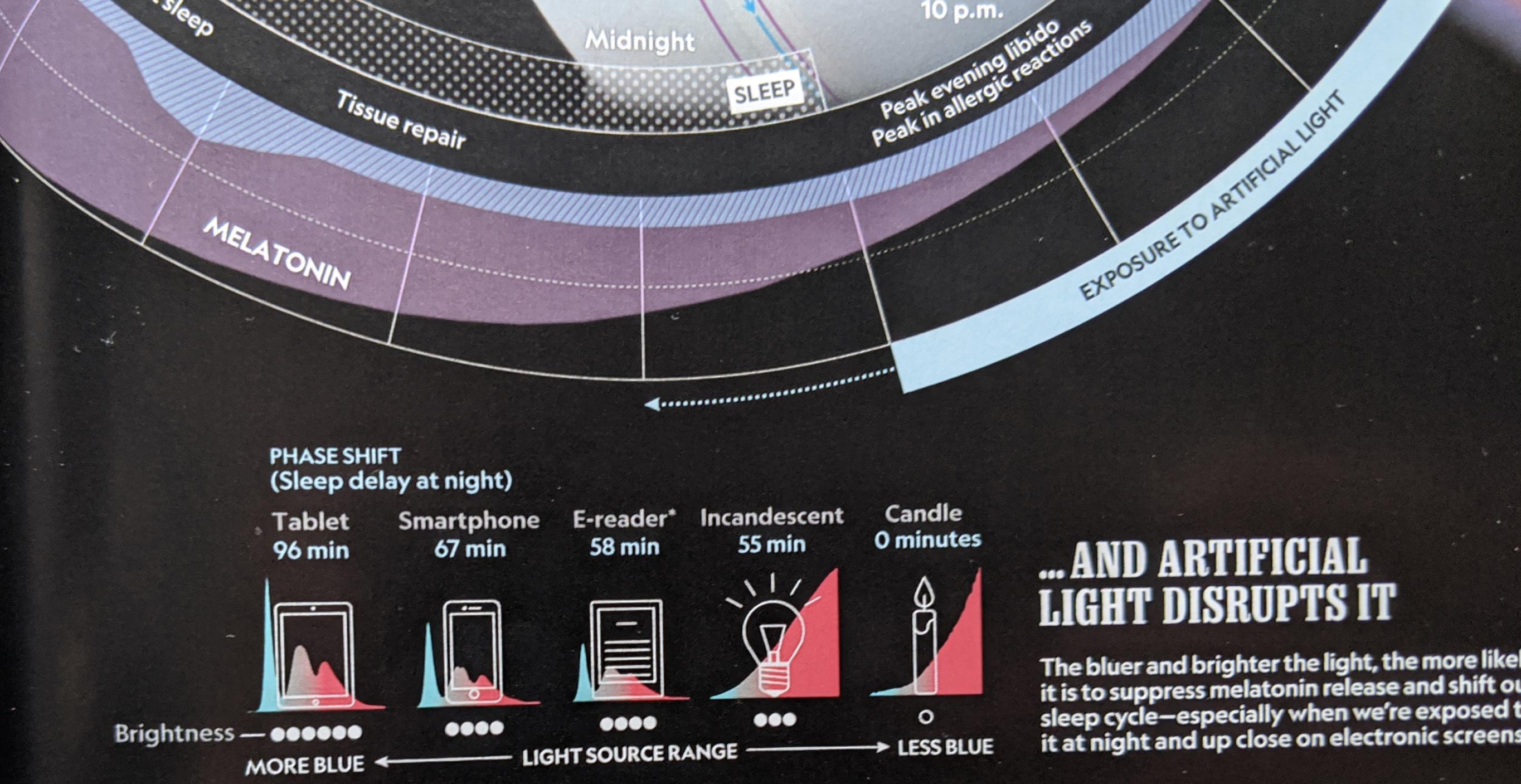
Animals that are directly targeted include lions that are poisoned to protect cattle and elephants poached for their tusks.



COLLATERAL DAMAGE

Because chemicals linger in the environment and the food chain, victims are widespread. Humans too can get sickened.

MATTHEW W. CHWASTYK AND MANUEL CANALES, NGM STAFF; KELSEY NOWAKOWSKI. SOURCES: DARCY OGADA, PEREGRINE FUND; AFRICAN RAPTOR DATABANK; HABITAT INFO: WAGENINGEN UNIVERSITY & RESEARCH; AFRICAN WILDLIFE POISONING DATABASE; ENDANGERED WILDLIFE TRUST; DUTCH MINISTRY OF ECONOMIC AFFAIRS; WWF-NETHERLANDS; RAPTORS MOU, UNEP/CMS; LIVING WITH LIONS; NORTH CAROLINA ZOO; WSPA; NASA EOSDIS LAND PROCESSES CROP EXTENT; WRI; ROAD DATA © OPENSTREETMAP CONTRIBUTORS, AVAILABLE UNDER OPEN DATABASE LICENSE: OPENSTREETMAP.ORG/COPYRIGHT



...AND ARTIFICIAL LIGHT DISRUPTS IT

The bluer and brighter the light, the more likely it is to suppress melatonin release and shift our sleep cycle—especially when we're exposed to it at night and up close on electronic screens.

*WITH BACKLIT DISPLAY

MÓNICA SERRANO, NGM STAFF; MESA SCHUMACHER. SOURCES: STEVEN LOCKLEY, BRIGHAM AND WOMEN'S HOSPITAL; RUSSELL FOSTER, UNIVERSITY OF OXFORD; DAVID SLINEY, JOHNS HOPKINS UNIVERSITY SCHOOL OF PUBLIC HEALTH; MICHAEL PERLIS; F.LUXOMETER PROJECT

Icons in user interface design

17:15 50%

Bucharest Brașov

2 hr 41 3 hr 14 1 d

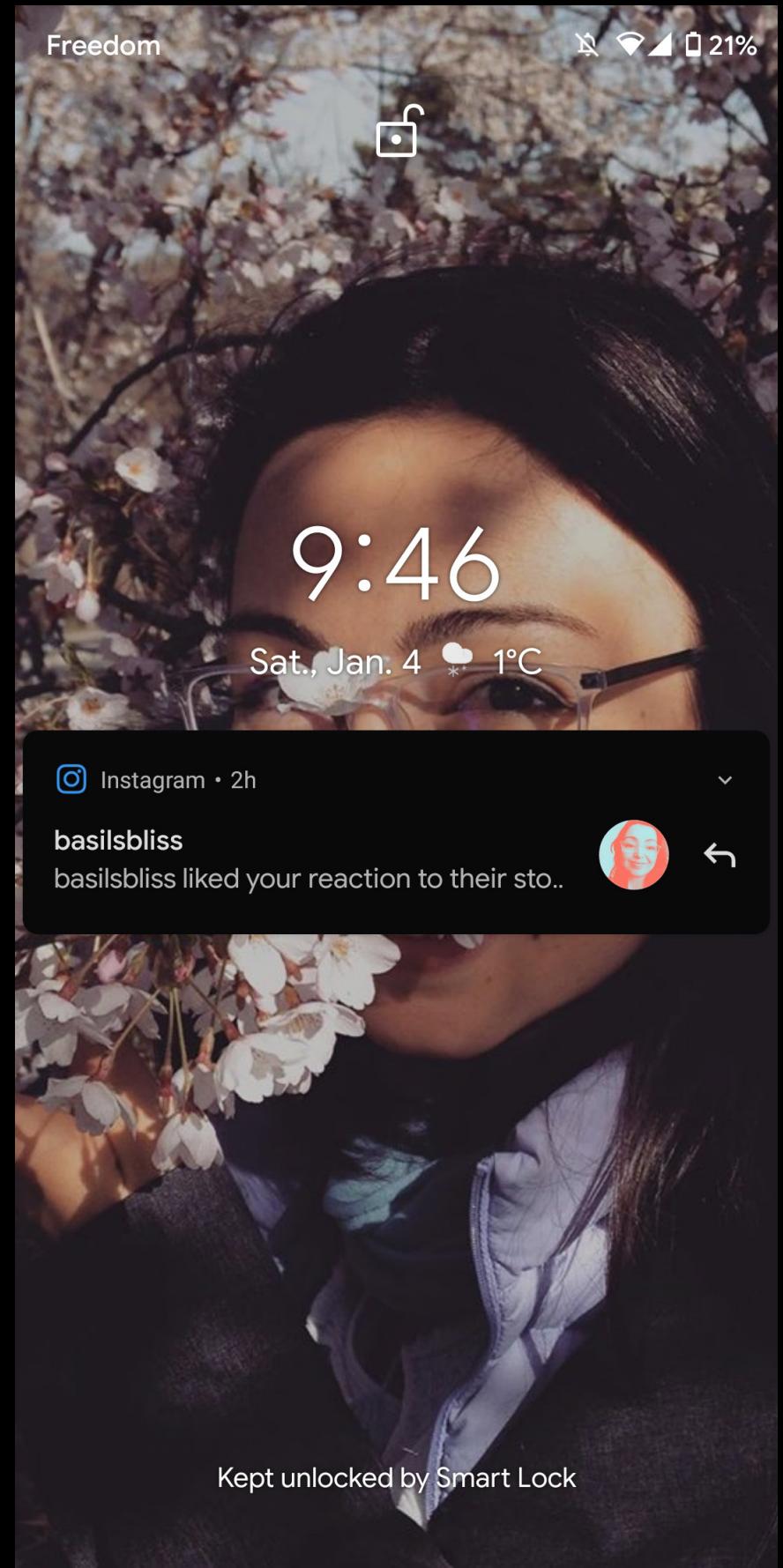
Depart at 17:15 OPTIONS

R IR N 3 hr 14 min >
20:16 - 23:30
20:16 from Northern Railway Station

R 3 hr 24 min >
20:16 - 23:40
20:16 from Northern Railway Station

IR N 2 hr 36 min >
21:10 - 23:46
21:10 from Northern Railway Station

IR 2 hr 35 min >



9:47

21%



Search contacts and places



TODAY



Bill Tsakopolous
↙ Mobile • 12:57 p.m.



Anduța Mareș
↗ Mobile • 12:51 p.m.



YESTERDAY



MAIZ The Junction
↗ Ontario • Fri.



OLDER



Mircea Mareș
↗ Mobile • Tue.



Silvia Mareș
↙ Mobile • Tue.



Canadian Tire
↙ Toronto, ON • Mon.



Dad



Favourites



Recent



Contacts



9:47

21%



2020 OFFER



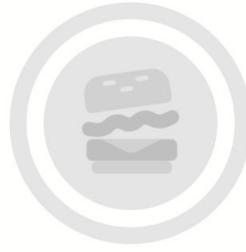
Basics 1



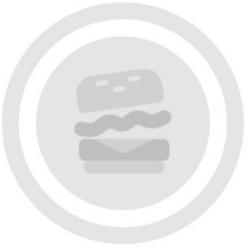
Basics 2



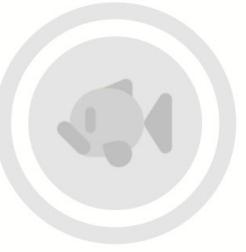
Phrases



Food 1



Food 2

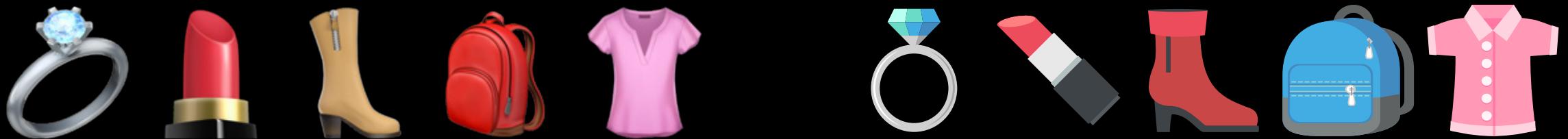
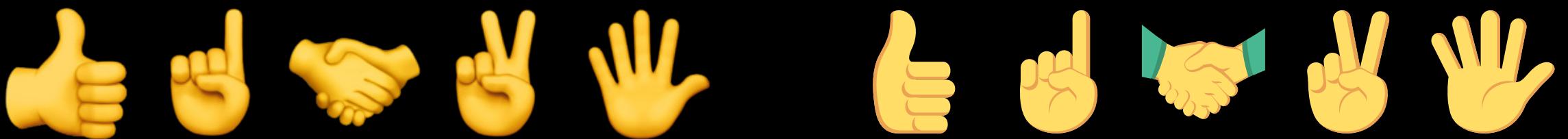


Animals



emojis

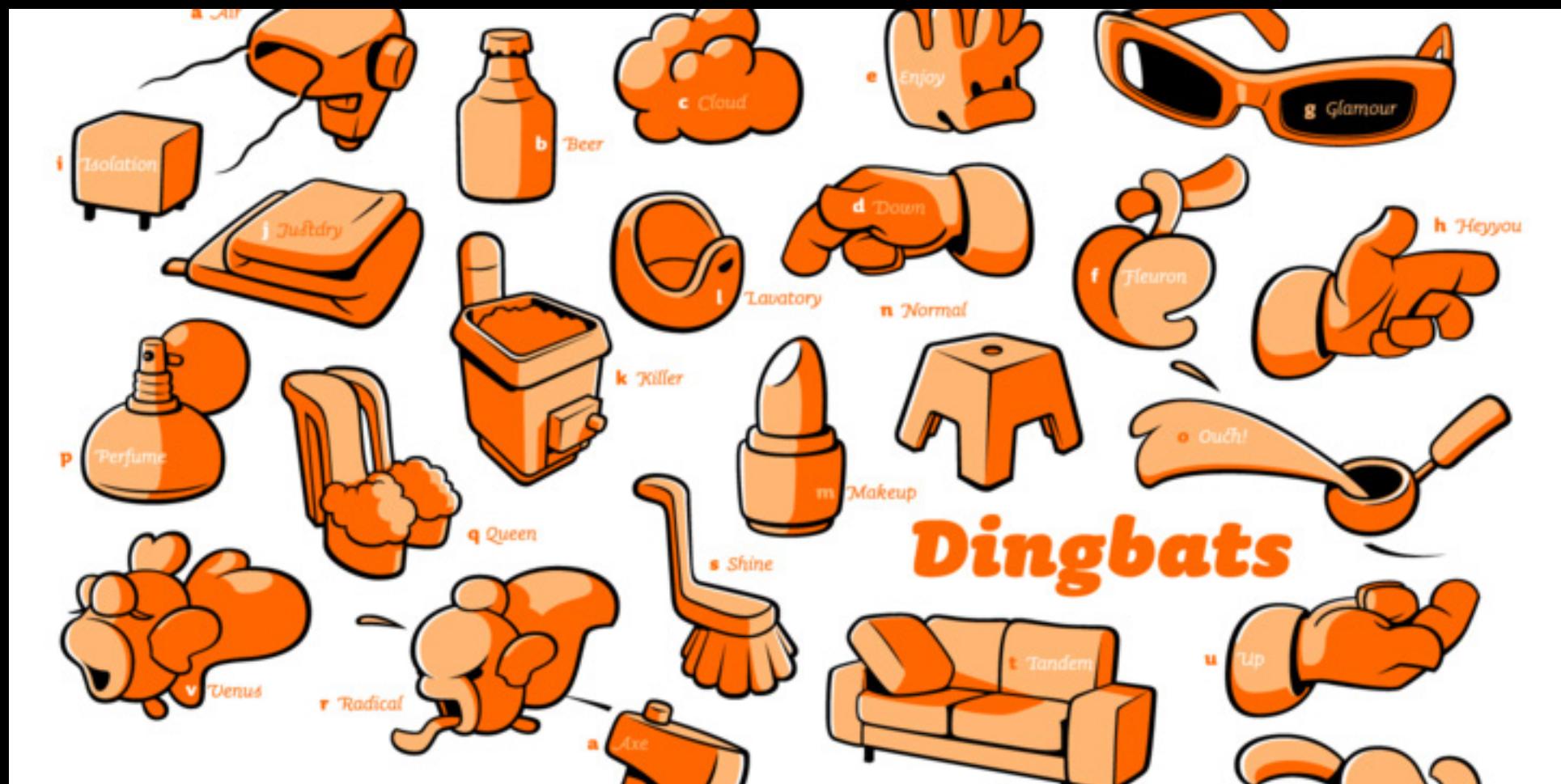




stylistic considerations in icon design

Good icon design should adhere to the following criteria:

- ☞ Simple in graphic form in order to be easily and quickly recognizable
- ☞ Forms should be literal representations of objects and concepts
- ☞ Should adhere to accessibility standards (colour, scalability)





CONCERNING A BOOK ABOUT



PÜTERSCHEIN
= HINGHAM

45 Irving Street
Hingham
MASSACHUSETTS

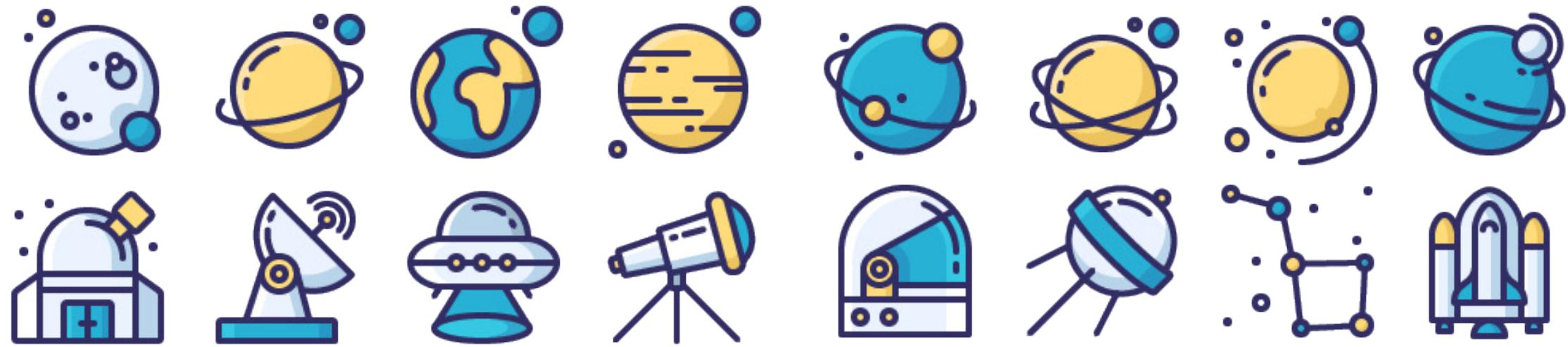






Image references (in order of appearance)

- p 4 Roger Cook and Don Shanosky, *ISO 7001 symbol for unisex toilets*. AIGA, 1989, Accessed 11 December 2019, https://en.wikipedia.org/wiki/ISO_7001#/media/File:Aiga_toilets_inv.svg
- p 8 Prof saxx, *Aurochs, horses and deer*. 2006, Accessed 18 November 2019, https://commons.wikimedia.org/wiki/File:Lascaux_painting.jpg
- p 9, 15 Alexander Nesbitt, *The history and technique of lettering*. Dover, 1950
- p 10 Rudolf Koch, *The book of signs*. Dover, 1955
- pp 11, 12, 13, 14 Zhou Kexi, *The art of Chinese calligraphy*. Better Link Press, 2009
- pp 16, 17, 18 Egyptian and near eastern collection, Kunsthistorisches Museum, 2015
- p 20 Marco Tobias Schäffer, *Stats*. 19 April 2009, Accessed 12 December 2019, <https://www.flickr.com/photos/gastev/3460153558/>
- p 21 Ed Annink, *Gerd Arntz web archive*. 2019, Accessed 21 December 2019, <http://www.gerdarntz.org/isotype>
- p 22 'Isotype: International picture language'. Isotype revisited, 2009–19, Accessed 21 December 2019, <http://isotyperevisited.org/2012/08/introduction.html>
- p 24 'Vector arrow symbols'. /designworkplan, 2019, Accessed 29 December 2019, <https://www.designworkplan.com/read/free-vector-arrows>
- p 25 Lexi Lin, "Wayfinding at Schiphol" – design considerations behind the world famous VI system and what inspires me as a UI designer'. In *Medium*, 12 September 2018, Accessed 27 December 2019, <https://uxdesign.cc/wayfinding-at-schiphol-some-design-considerations-behind-the-world-famous-vi-system-and-what-29842b368252>
- pp 27, 28, 29 National Geographic, August 2018
- p 40 'Sauna dingbats'. Underware, 2000
- pp 41, 42 Bruce Kennet, *W.A. Dwiggins: a life in design*. Letterform Archive, 2017
- p 43 Icon Utopia. 2020
- p 44 Ted Kulakevich, 'Unfold icons'. 2020, Accessed 19 December 2019, <https://dribbble.com/shots/6340915-Woke-Icon-Set>
- p 45 Brandon Lane, 'Airbnb icons – Continued'. 2020, Accessed 19 December 2019, <https://dribbble.com/shots/1662234-Airbnb-Icons-Continued>