



Alice in Sciences: Intertextual Figures in Scientific Articles



Faculté
de Traduction
et d'Interprétation

Ecole d'Interprètes
Internationaux

C. Meyers SWYM-MWYS Conference 2017

Outline

1. Alice in Sciences

- Science and tales
- Alice in scientific disciplines
- Different kinds of references

2. Intertextuality : From Explicitness to Implicitness

- Corpus
- What is intertextuality?
- References' distribution on an « explicitness continuum »
- References' functions

3. The Special Case of Neologisms: the Quantum Cheshire Cat vs. the Agronomic Jabberwocky

- Traditional views of terminology
- How the quantum Cheshire cat became a good candidate
- The quantum Cheshire cat's chances of survival

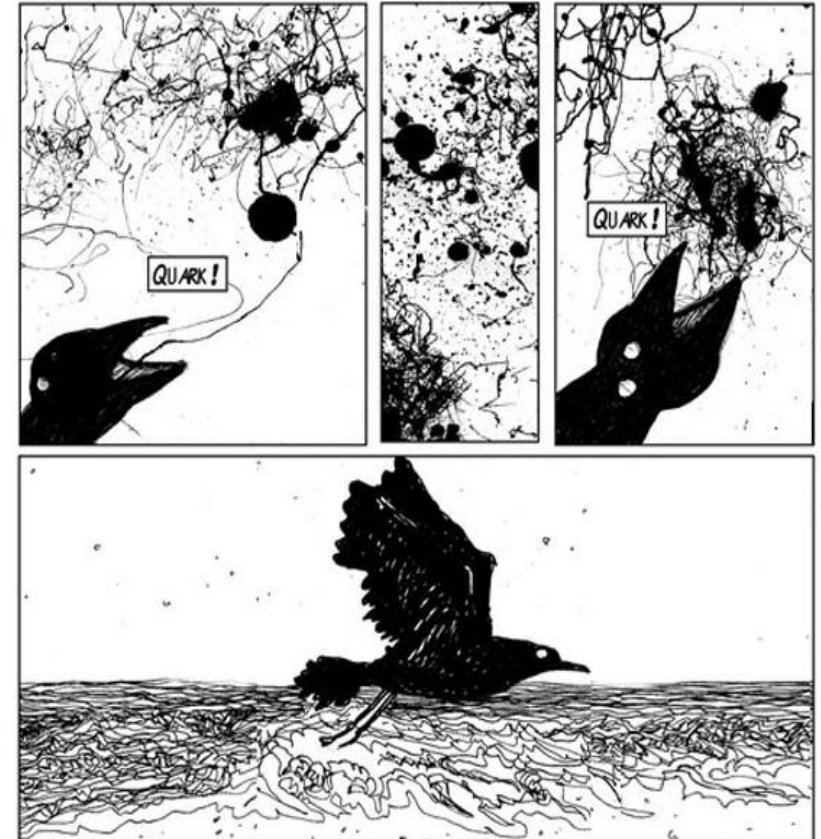
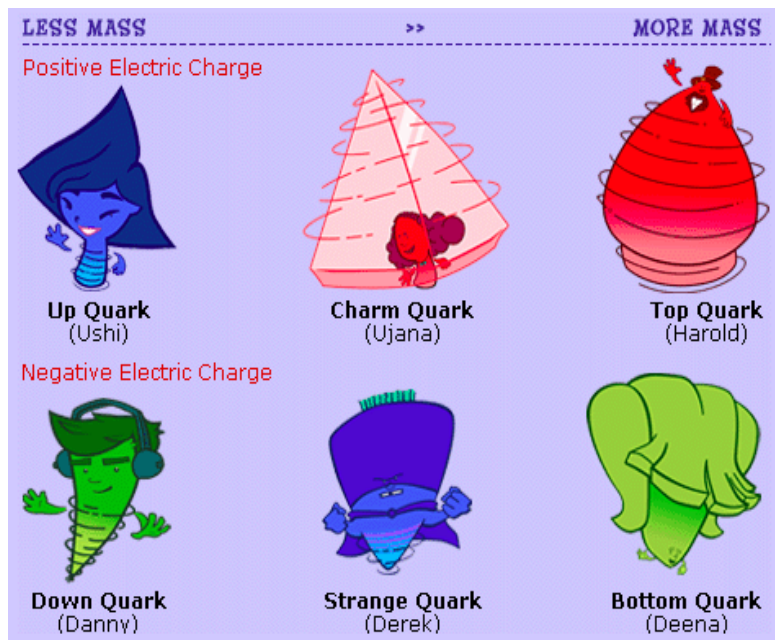
4. Conclusion

1. Alice in Sciences

Three quarks for muster mark

Science and tales

- The naming of quarks



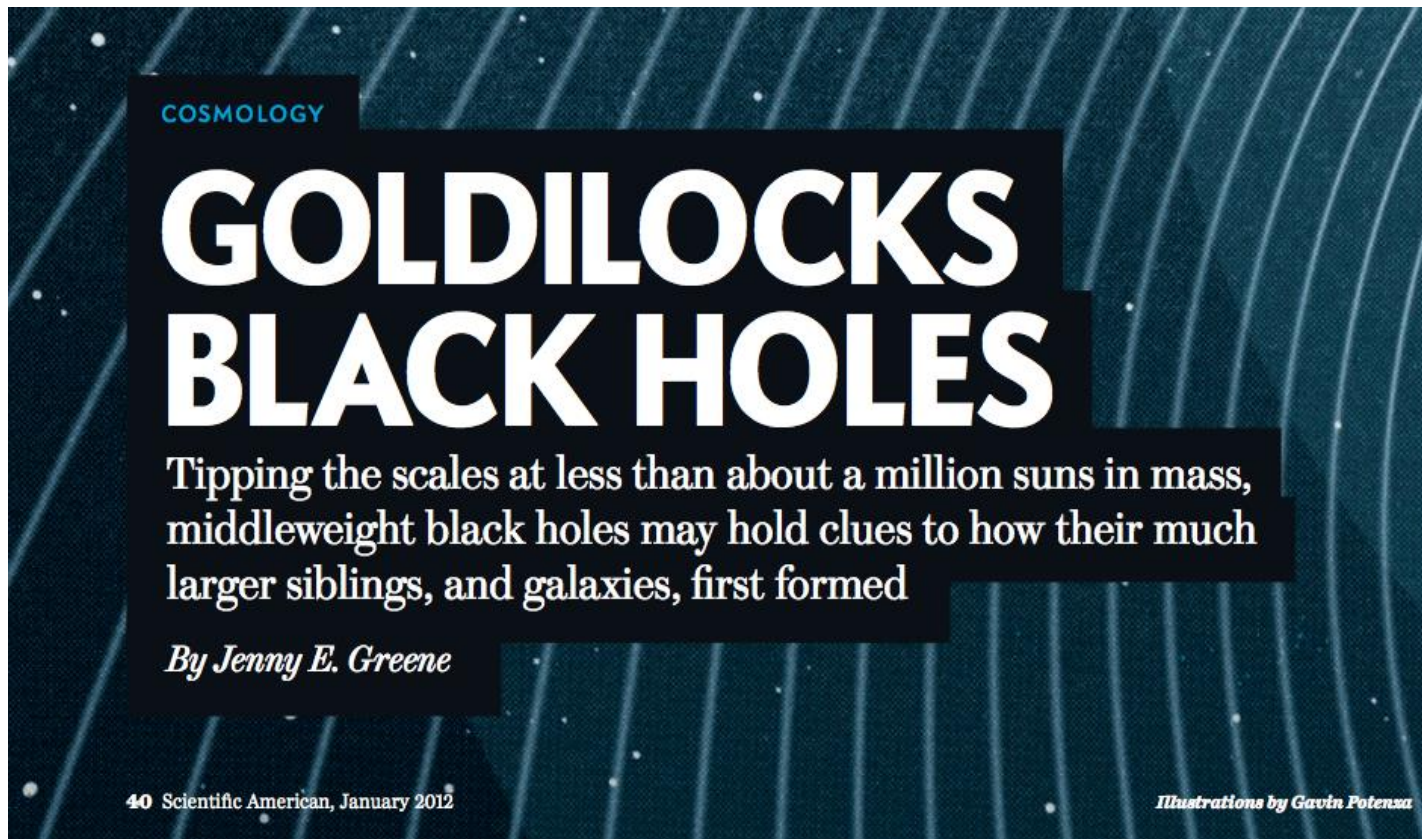
Three quarks for Muster Mark ! [1]

Sure he hasn't got much of a bark [2]

And sure any he has it's all beside the mark [3]

1. Alice in Sciences

- Goldilocks Black Holes



1. Alice in Sciences

Alice in scientific disciplines

- Psychiatry and psychology

Over 100 years after publication of *Alice's Adventures in Wonderland* and *Through the Looking-Glass*, Allan Ropper and Brian Burrell use Carroll's work to draw parallels with various neurological conditions, the odd behavioural traits that they can cause to manifest, and the difficulty in establishing their roots. Consequently, their book *Reaching Down the Rabbit Hole* presents a fascinating and moving account of a life spent helping people who have "in effect, fallen into a hole" and the attempts "to get them out again".

1. Alice in Sciences

NCBI Resources How To

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US National Library of Medicine
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PubMed

Advanced

Format: Abstract

Neurology. 2013 Mar 26;80(13):1262-4. doi: 10.1212/WNL.0b013e31828970ae. Epub 2013 Feb 27.

Alice in Wonderland Syndrome: somesthetic vs visual perceptual disturbance.

Lanska JR¹, Lanska DJ.



Emergency Medicine Clinics of North America

Volume 33, Issue 4, November 2015, Pages 721-737

Psychiatric and Behavioral Emergencies



Down the Rabbit Hole : Emergency Department Medical Clearance of Patients with Psychiatric or Behavioral Emergencies

Veronica Tucci, MD, JD^a, Kaylin Siever, MD^a, Anu Matorin, MD^b, Nidal Moukaddam, MD, PhD^b

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THE LANCET

BOOKS, POETRY, AND ART

Reflections on being one of two

Two, or, the book of twins and doubles.—Penelope Farmer. London: Virago Press. 1996. Pp 482. £20. ISBN 1-8538-01705-8.

Twins, especially identicals, are different from individuals who come one at a time, and their existence seems to contradict the principle that each of us is unique. Herein lies much of the fascination with twins, and this thought-provoking anthology contains enough to satisfy almost anyone's thirst.

Penelope Farmer has brought together over 150 contributors, from Cicero to Eric Cantona. The result is a celebration of twinship and duality, as well as something of a memorial to Farmer's own twin sister who died 5 years ago.

She writes bravely of breast cancer, of separation, and of

What does it feel like to be a twin? Many of the selections here, from John Barth's soundbites to Michael Covino's Joycean outpourings, explore this area. Several quotations



1. Alice in Sciences

- Math

THE **WONDERLAND** OF REFLECTIONS

13

h_1, h_2 . Because the latter mappings are homomorphisms, it follows that all functions in \mathcal{C}' preserve all relations of \mathbb{B} , and so \mathcal{C}' is contained in \mathcal{B} . By (i) we have $\mathcal{A}' \supseteq \mathcal{A}$, and so \mathcal{C}' contains the set \mathcal{C} of all functions on B which are obtained by applying a reflection to \mathcal{A} via the mappings h_1, h_2 . Hence, $\mathcal{B} \in \text{ER } \mathcal{A}$.

For the other direction, let $h_1: B \rightarrow A$ and $h_2: A \rightarrow B$ be so that the reflection \mathcal{C} of \mathcal{A} by those functions is contained in \mathcal{B} . For every relation R of \mathbb{B} set

$$R' := \{f(h_1(r_1), \dots, h_1(r_n)) : f \in \mathcal{A}, r_1, \dots, r_n \in R\};$$

here, we apply h_1 and functions from \mathcal{A} to tuples componentwise. In other words, R' is the closure of $h_1[R]$ under \mathcal{A} . Let \mathbb{A}' be the structure on A whose relations are precisely those of this form. By definition, all relations of \mathbb{A}' are invariant under functions in \mathcal{A} , so

1. Alice in Sciences

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UNCERTAINTY IN ARTIFICIAL INTELLIGENCE PROCEEDINGS 2000

Maximum Entropy and the Glasses You are Looking Through

Peter Grünwald*
EURANDOM
P.O. Box 513
5600 MB Eindhoven
The Netherlands

1. Alice in Sciences

- Economy

Avoiding Chaos in **Wonderland**

G.A. Kohring

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Rathausallee 10, D-53757 St. Augustin, Germany
kohring@cctl-nece.de

Abstract

Wonderland, a compact, integrated economic, demographic and environmental model is investigated using methods developed for studying critical phenomena. Simulation results show the parameter space separates into two

1. Alice in Sciences

- Medicine and biology



Editorial

The study of gastric mechanics and flow: A Mad Hatter's tea party starting to make sense?

Michael Horowitz , John Dent

[+ Show more](#)

1. Alice in Sciences

Air Medical Research Advice from the Mad Hatter

Frederick V. Peterson, MPH, Allegheny General Hospital

1. Alice in Sciences

Sleep Medicine Reviews 25 (2016) 1–3



Contents lists available at [ScienceDirect](#)

Sleep Medicine Reviews

journal homepage: www.elsevier.com/locate/smr



GUEST EDITORIAL

Down the rabbit-hole: New perspectives from stereo-EEG in the investigation of sleep, nocturnal epilepsy and parasomnias



1. Alice in Sciences

P.476 Tweedledum and tweedledee: how well are we controlling hepatitis B and C?

K. Vickery, H. Tawk, J. Zou, Y.E. Cossart*. *Infectious Diseases and Immunology, University of Sydney, Sydney, Australia*

Background and Objectives: HBV and HCV are both blood borne and both cause chronic liver disease and cancer. HBV is readily transmitted sexually and vertically whereas HCV is not. Recovery from HBV and vaccination confer immunity but infection with HCV does not, nor is there a vaccine. Both impose heavy disease burden, and effective but high-cost treatment is now part of the public health response. Interventions and social change, especially immigration, affect both HBV and HCV prevalence in different communities. We aimed to assess the risk factors for infection and persistence of hepatitis B and C in the same population as a guide to policy development.

Methods: 2000 end-stage patients in Sydney were tested for

Tweedledum and Tweedledee? Meta-regression for 30-day all-cause mortality by predicted mortality in contemporary transcatheter aortic valve implantation studies



Hisato Takagi*, Yusuke Mizuno, Masao Niwa, Shin-nosuke Goto, Takuya Umemoto for the ALICE (All-Literature Investigation of Cardiovascular Evidence) Group

Department of Cardiovascular Surgery, Shizuoka Medical Center, 762-1 Nagasawa, Shimizu-cho, Sunto-gun, Shizuoka 411-8611, Japan

1. Alice in Sciences

- Physics and astrophysics

Toward Identification of Order Parameters in Skutterudites – a Wonderland of Strong Correlation Physics –

Yoshio KURAMOTO* and Annamária KISS†

Department of Physics, Tohoku University, Sendai, 980-8578

Alice in the black hole
wonderland

Wen-Yu Wen (CYCU)

A brief history of black holes (and Information)

1916

Black holes emerge from general relativity: nothing, not even light, escapes event horizon

1974

Black holes emit Hawking radiation thanks to quantum mechanics

2004

Hawking accepts that information escapes from black holes

2012

Escaping information ignites firewall, which can't be reconciled with general relativity

2014

Event horizon replaced by apparent horizon that allows some light through - and kills firewall

1. Alice in Sciences

DRAFT VERSION JANUARY 27, 2014

Preprint typeset using L^AT_EX style emulateaj v. 5/2/11

THROUGH THE LOOKING GLASS: *HST* SPECTROSCOPY OF FAINT GALAXIES LENSED BY THE FRONTIER FIELDS CLUSTER MACSJ0717.5+3745

K. B. SCHMIDT¹, T. TREU¹, G. B. BRAMMER², M. BRADAČ³, X. WANG¹, M. DIJKSTRA⁴, A. DRESSLER⁵, A. FONTANA⁶, R. GAVAZZI⁷, A. L. HENRY⁸, A. HOAG³, T. A. JONES¹, P. L. KELLY⁹, M. A. MALKAN¹⁰, C. MASON¹, L. PENTERICCI⁶, B. POGGIANTI¹¹, M. ...¹², A. ...^{13,14}, D. ...¹⁵

¹ Department of Physics

‘Quantum Cheshire Cat’ as Simple Quantum Interference

Raul Corrêa, Marcelo França Santos, C H Monken and Pablo L Saldanha

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arXiv:1301.1233

1. Alice in Sciences

Different kinds of references

- Quotations
- Plain references
- Comparisons
- Analogies
- Similes
- Contrasts
- Terms
- Portmanteau noun phrases

1. Alice in Sciences

Type of reference	example
Quotations	<p><i>“Well! I’ve often seen a cat without a grin’, thought Alice, ‘but a grin without a cat! It’s the most curious thing I ever saw in my life!’</i> No wonder Alice is surprised. In real life, assuming that cats do indeed grin, the grin is a <i>property</i> of the cat –it makes no sense to think of a grin without a cat. And This goes for almost all physical properties” (Aharonov <i>et al</i> 2013: 2)</p>
Plain references	<p>“When Alice fell down the rabbit hole, she encountered a variety of strange characters: an infuriatingly enigmatic caterpillar, a Queen with an unhealthy proclivity for decapitation, and a hatter whose idea of catering left much to be desired.” (Bianchi 2016: 1)</p>

1. Alice in Sciences

Type of reference	Example
Analogies	“The ‘Cat’ is a photon in two possible locations, $[L\rangle$ and $[R\rangle$. The ‘grin’ corresponds to its circular polarization state.” (Aharonov <i>et al</i> 2013: 2)
Similes	“ ‘Quantum Cheshire Cat’ as simple Quantum Interference” (Corrêa <i>et al</i> 2015: 1)
Contrasts	“Unlike the white rabbit in Alice in Wonderland, real animals rarely miss their appointments” (Kingsland 2004)
Terms	“the main tool we use goes back to Simon’s Wonderland Theorem.” (Lenz & Stollmann 2004 : 2)
Portmanteau noun phrases	“Air Medical Research Advice from the Mad Hatter” (Peterson 1995: 53)

2. Intertextuality

Corpus

- 29 texts
- Science Direct, PubMed, *The New Scientist*

Disciplines	Number of articles
Math and economy	5
Medicine and biology	8
Psychiatry and psychology	4
Physics and astrophysics	12

2. Intertextuality

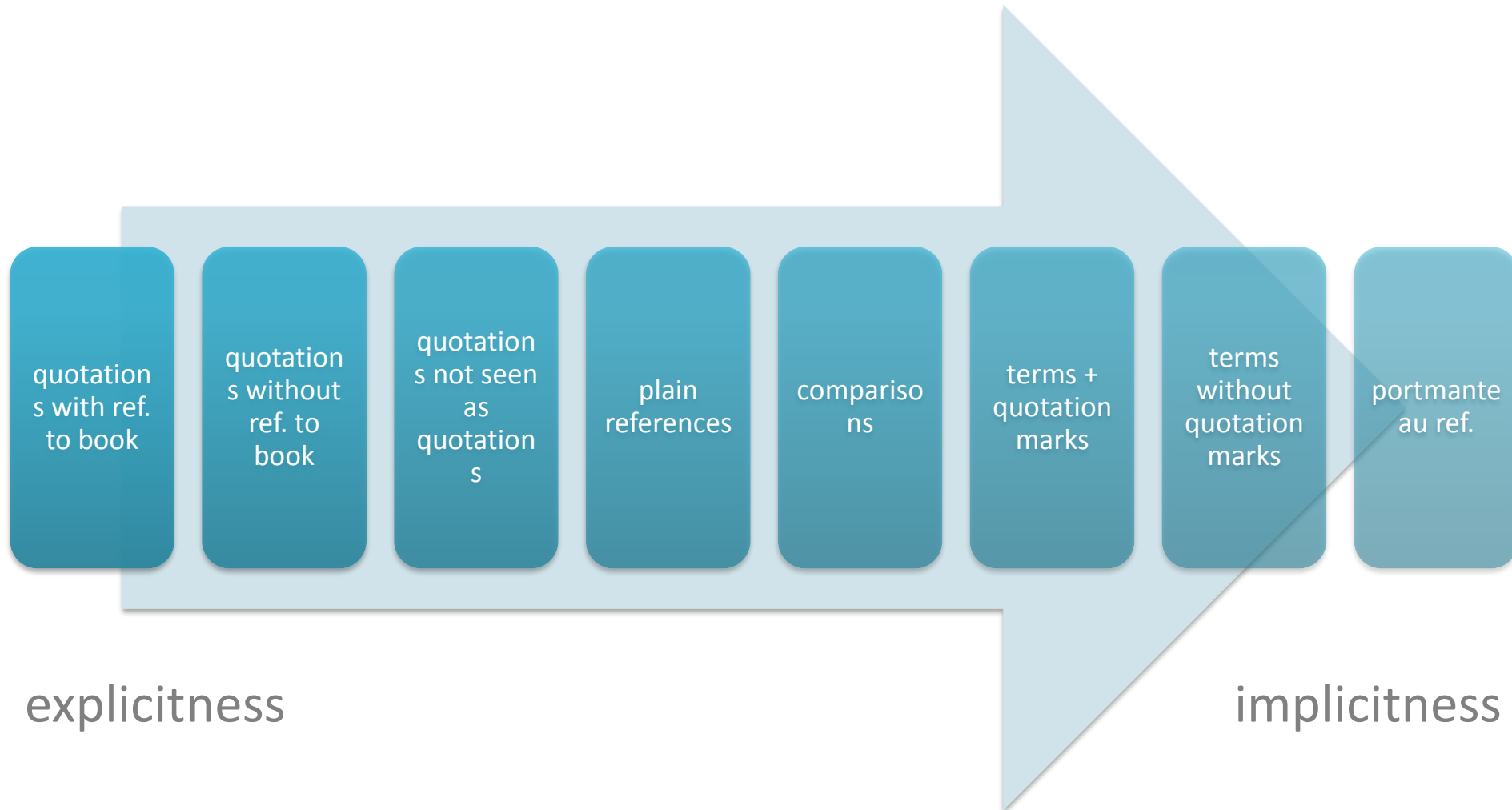
What is intertextuality

Relation de coprésence entre deux ou plusieurs textes, c'est-à-dire éidétiquement et le plus souvent, par la présence effective d'un texte dans un autre. (Genette 1982)

2. Intertextuality

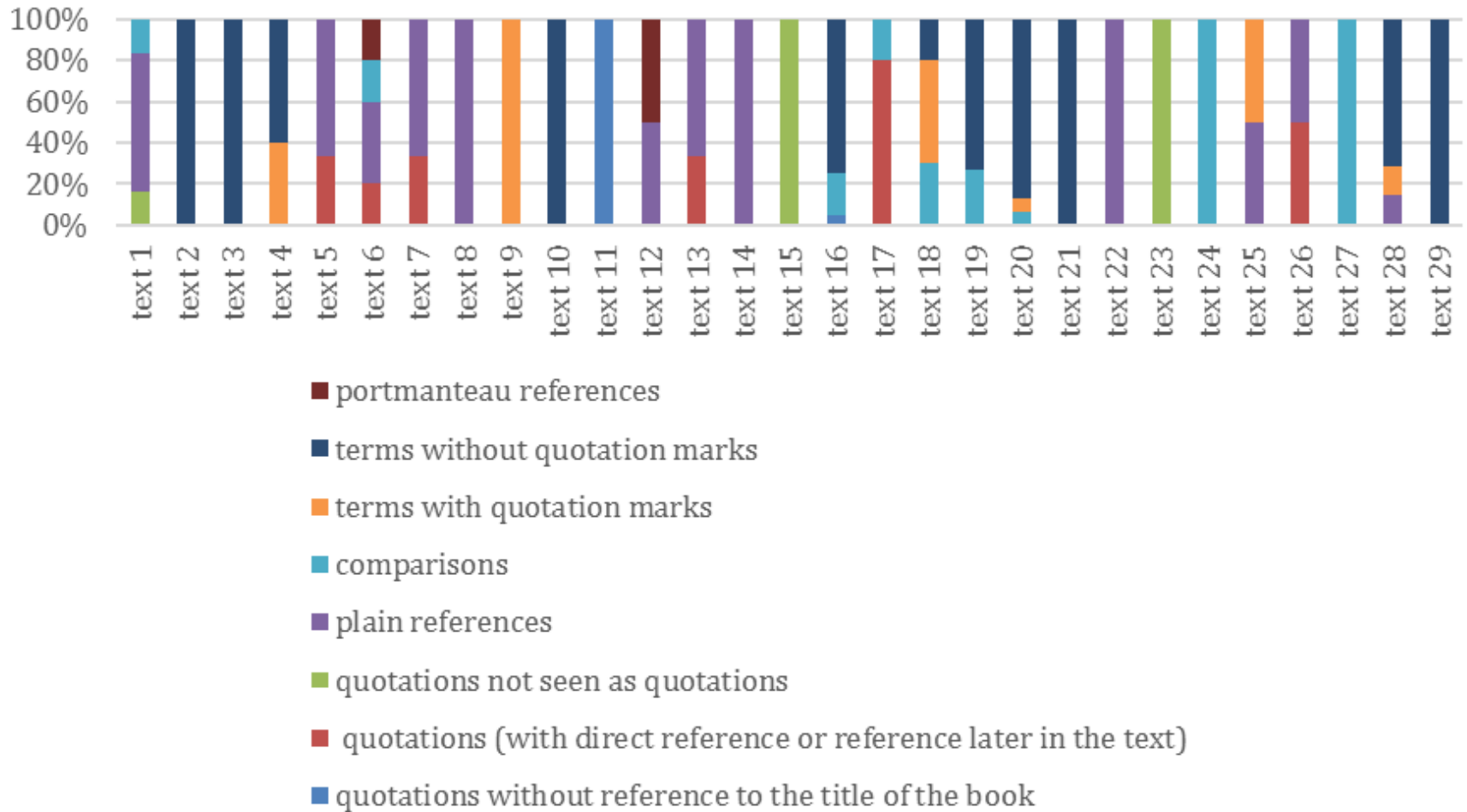
- Distinction between explicitness and implicitness (Jenny 1976)
- Explicitness: references overtly made (Koch 2009)
- Implicitness: references without indication of source (Koch 2009)

2. Intertextuality



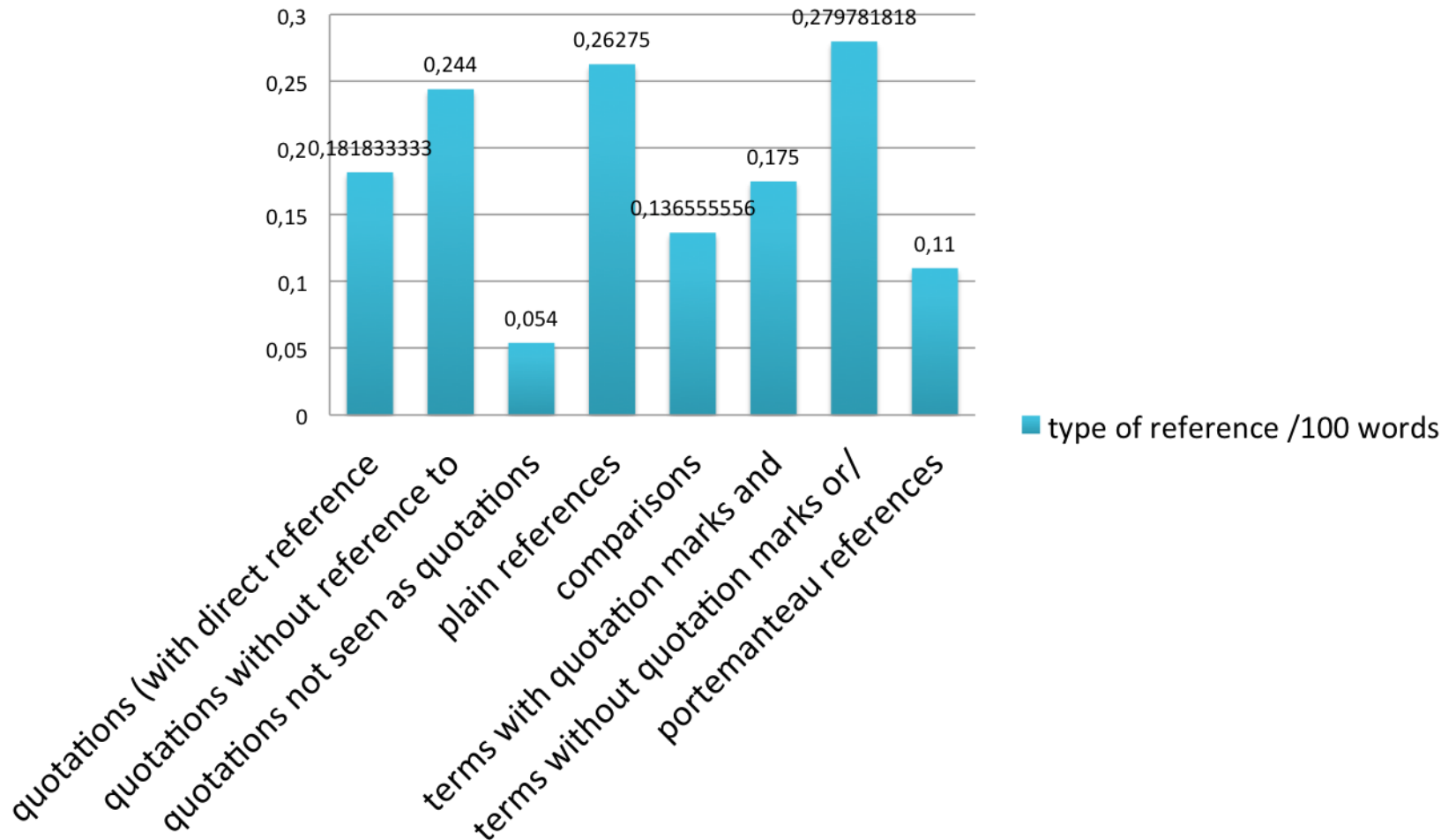
2. Intertextuality

types of references / texts



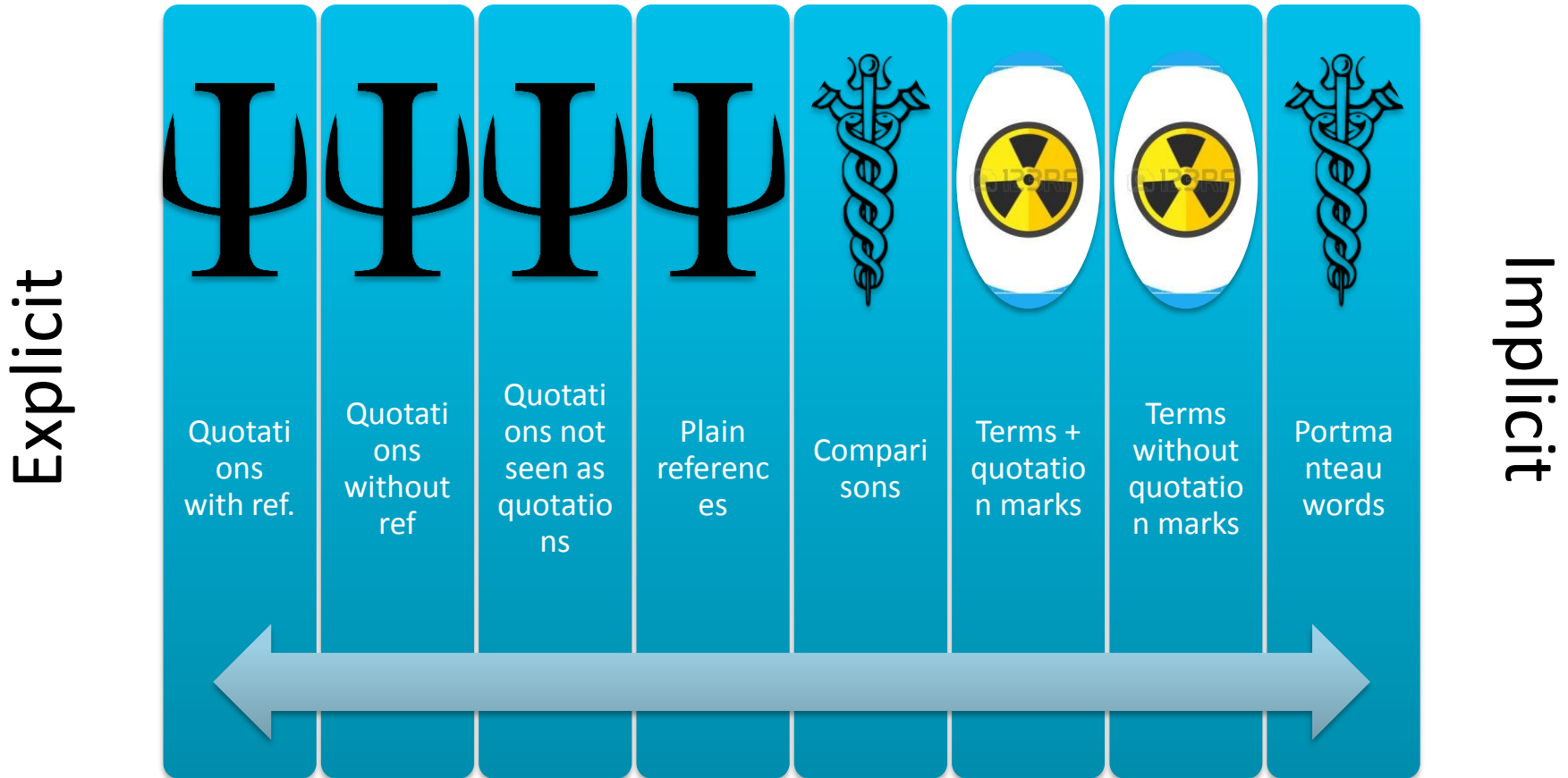
2. Intertextuality

Frequency



2. Intertextuality

References' distribution on an explicitness continuum



2. Intertextuality

References' functions

- Quotations: Catchlines / lead-ins
- Plain references: introduction
- Comparisons: clarifying ideas, concepts
- Terms: designation
- Presence of quotation marks / explanation → neologism

3. Neologisms

Traditionnal views of terminology and The Agronomic Jabberwocky

- The Agronomic Jabberwocky (Kempton 1928)

The new ululations of this fearsome beast [...] are the grotesque inventions of three moderns who, if not so mellifluous as Dr. Dogson, are almost as whimsical. [...] They are offered in all seriousness as aids to American agronomists who, it appears, are struggling perspiringly to be articulate in the refractory English language. (Kempton 1928 : 629)

3. Neologisms

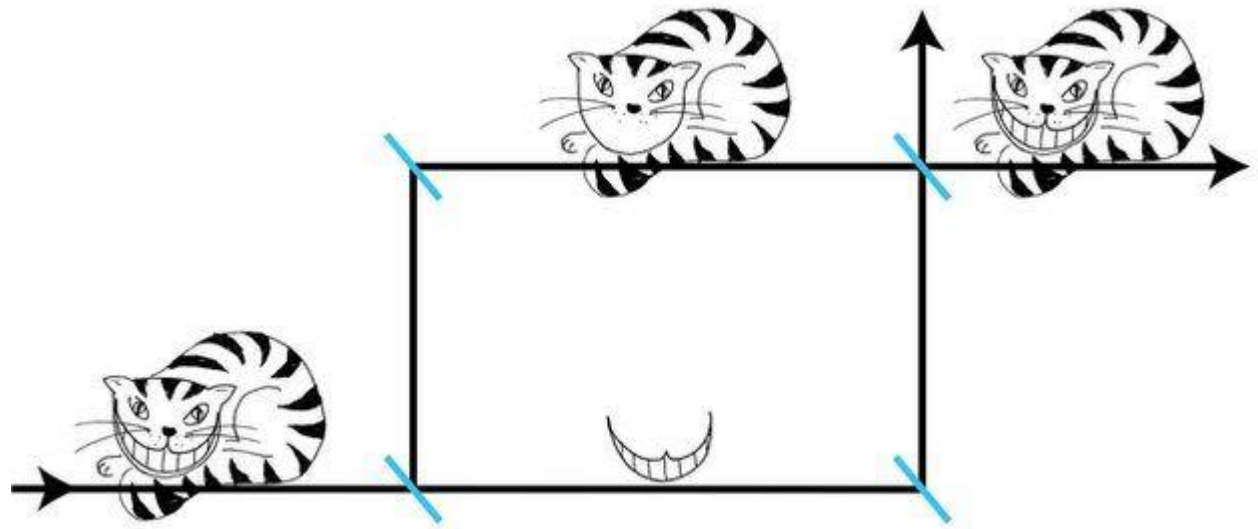
- Wüsterian terminology (1930)
- Socioterminology (1980)

“socioterminology” was born as a sociolinguistic movement to protest against universality and to defend the plurality of language. (Besharat 2017)

3. Neologisms

How the quantum Cheshire cat became a good candidate










- Clues to detect neologisms (Pearson 2002)
- Quantum Cheshire cat



ILFITER

3. Neologisms

Text number	Publishing date	Occurrences	Explanations	Quotation marks
Text 16	2013	13	yes	No
Text 18	2015	9	yes	Yes and no
Text 19	2009	15	yes	No
Text 20	2014	12	yes	No

NOW Corpus (News on the Web)         

SEARCH FREQUENCY CONTEXT HELP

CLICK FOR MORE CONTEXT [?] CHOOSE LIST CREATE NEW LIST [?]

1	15-07-14	BD	DhakaTribune	A	B	C	used to describe the structure of our physical world. # The phrase " Quantum Cheshire Cat " is used in physics to describe a situation in which a subatomic par
2	14-12-17	US	Scientific American	A	B	C	new experimental tool for performing precision measurements. " Paper: Observation of a quantum Cheshire Cat in a matter wave interferometer experiment.
3	14-08-08	GB	Financial Times	A	B	C	has thrown up another strange and paradoxical phenomenon, which scientists call the " quantum Cheshire cat ". It involves separating a particle from one of its
4	14-08-08	GB	Financial Times	A	B	C	separating a particle from its physical properties, a phenomenon they called the ' quantum Cheshire cat ' # The weird world of quantum physics has thrown up
5	14-07-29	GB	Daily Mail	A	B	C	the lower path. # This is the Institut Laue-Langevin neutron source where the Quantum Cheshire Cat was created. Using an apparatus called an interferomet
6	14-07-29	GB	Daily Mail	A	B	C	in Grenoble, France. THE MOST FAMOUS PHYSICS CAT? # The quantum Cheshire Cat follows in the paw steps of Schrodinger's cat, the most famous feline
7	14-07-29	GB	Daily Mail	A	B	C	system prone to perturbation. # ' The two can be separated using a quantum Cheshire Cat , and possibly the perturbation can be minimised.'
8	14-01-22	US	Science Now	A	B	C	last November Aharonov and colleagues described how they could be used to realize a quantum Cheshire Cat . # Here's the idea. A beam of neutrons all magn
9	13-11-25	US	Phys.Org	A	B	C	the physicists take things a step further and show that there really is a quantum Cheshire Cat by proposing another experiment that limits the measurement-i
10	13-11-25	US	Phys.Org	A	B	C	paper, physicists have theoretically shown that this phenomenon, which they call a quantum Cheshire Cat , is an inherent feature of quantum mechanics and c
11	11-09-21	US	World Politics Review	A	B	C	4334298 Quantum Cheshire Cat : Even Weirder Than Schr? dinger's # Just when you thought you

3. Neologisms

The quantum cheshire cat's chances of survival

- Frequency
- Distribution in corpus
- Absence of equivalent term in same language
- Absence of equivalent term in other languages

(Schneider 2017)

3. Neologisms

- 9370 hits on Google
 - Fair distribution in the corpus
 - No synonym in English
 - No equivalent in French (yet to come?)
- Fair chance of survival

4. Conclusion

- Alice = great source of inspiration
- References can be more or less explicit
- Psychology → explicit references
- Medicine + Physics → implicit references
- Terms = 1st type of references
- Some terms are neologisms *i.e.* quantum Cheshire cat

THANK YOU



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