預約下一個20年的競爭力:
圖書館該如何進擊?

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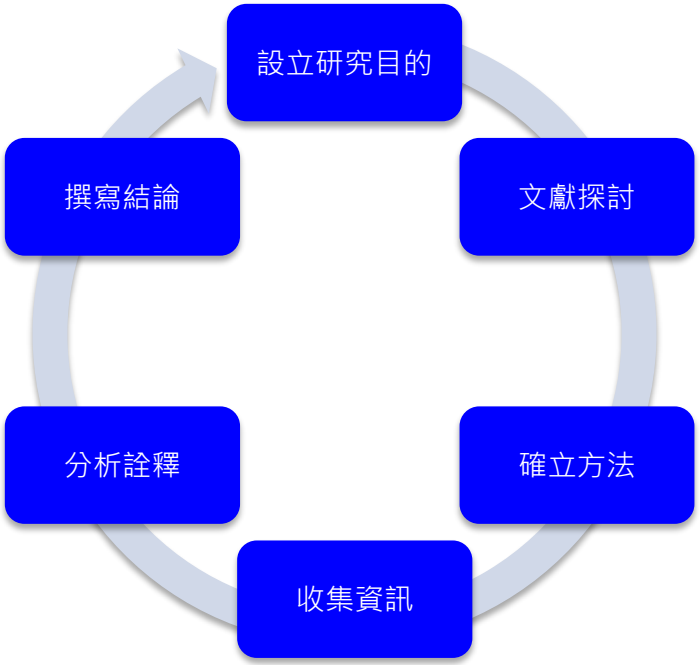
簡報摘要

在圖書館面臨前所未有壓力的現在, 如何運用有限的資源, 提供更深入、更適合讀者的服務, 為機構帶來價值, 強化圖書館地位, 提升總體競爭力, 一直是圖書館界不斷思考的議題.

要思考如何創新, 必須回到根本。本簡報從研究的根本開始思考, 檢視在研究的不同階段, 研究者需要什麼樣的支援; 並著眼於趨勢, 與圖書館一同思考如何走在研究者的前端, 帶領研究者提升研究效率, 強化合作, 行銷成果, 進而提升機構的能見度與影響力。

研究者的煩惱, 身為館員的你是否知道?



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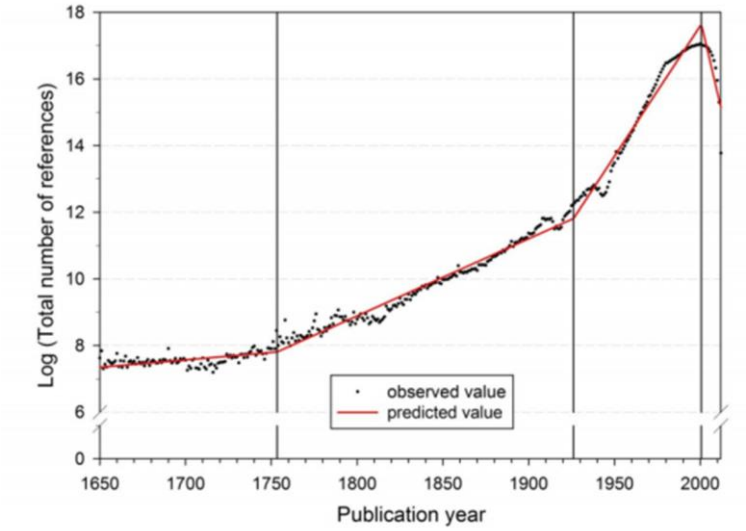
學術出版大爆炸！誰能讀得完?

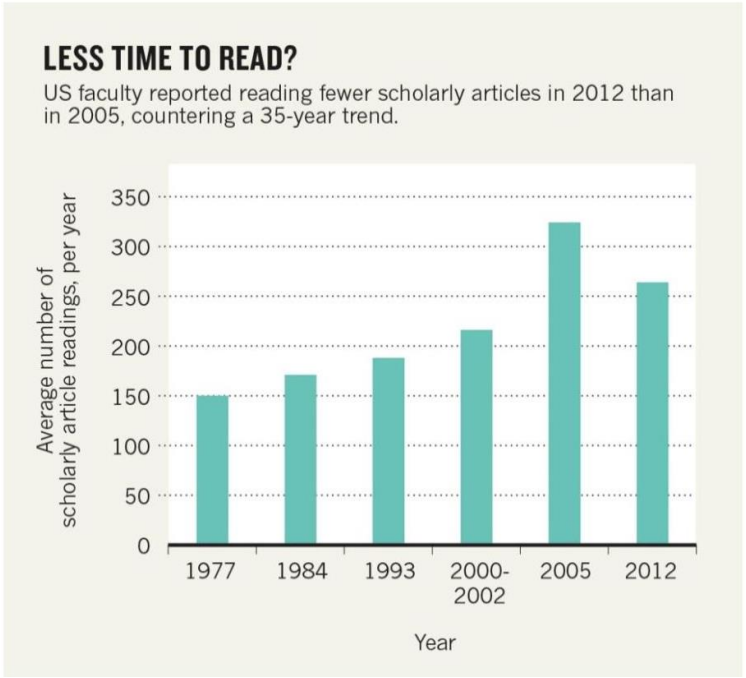
NATURE NEWS BLOG

Global scientific output doubles every nine years

07 May 2014 | 16:46 BST | Posted by Richard Van Noorden | Category: Policy, Publishing



Source: Richard V Noorden, "Global scientific output doubles every nine years", Nature News Blog, May 2014 http://blogs.nature.com/news/2014/05/global-scientific-output-doubles-every-nine-years.html



Source: Carol Tenopir, "Are scientists reading less? Apparently, scientists didn't read this paper", The Scholarly Kitchen, Feb 2014 http://scholarlykitchen.sspnet.org/2014/02/07/are-scientists-reading-less-apparently-scientists-didnt-read-this-paper/

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令人眼花撩亂！誰能全都學？

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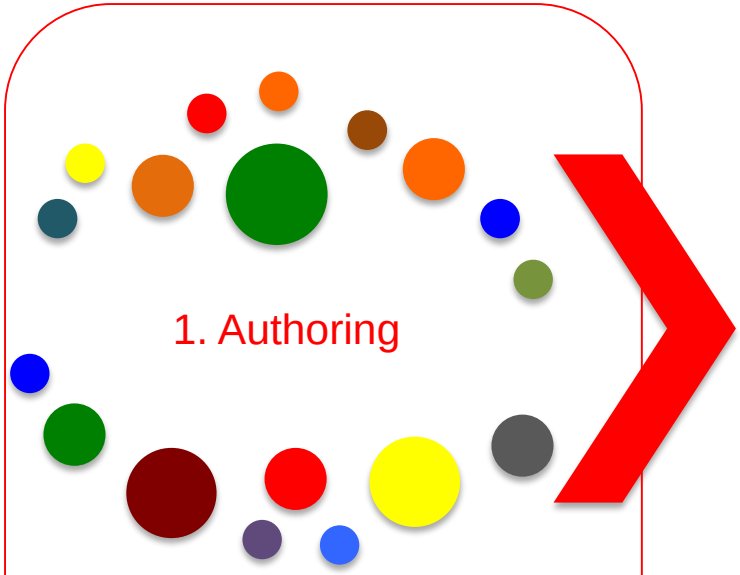
重新思考學術研究 – 圖書館能做些什麼?



1. Authoring

- 智慧探索
- 社群合作
- 寫作典範

2. Publishing

- 擬定發表策略

3. Outreaching

- 工具應用
- 口語化

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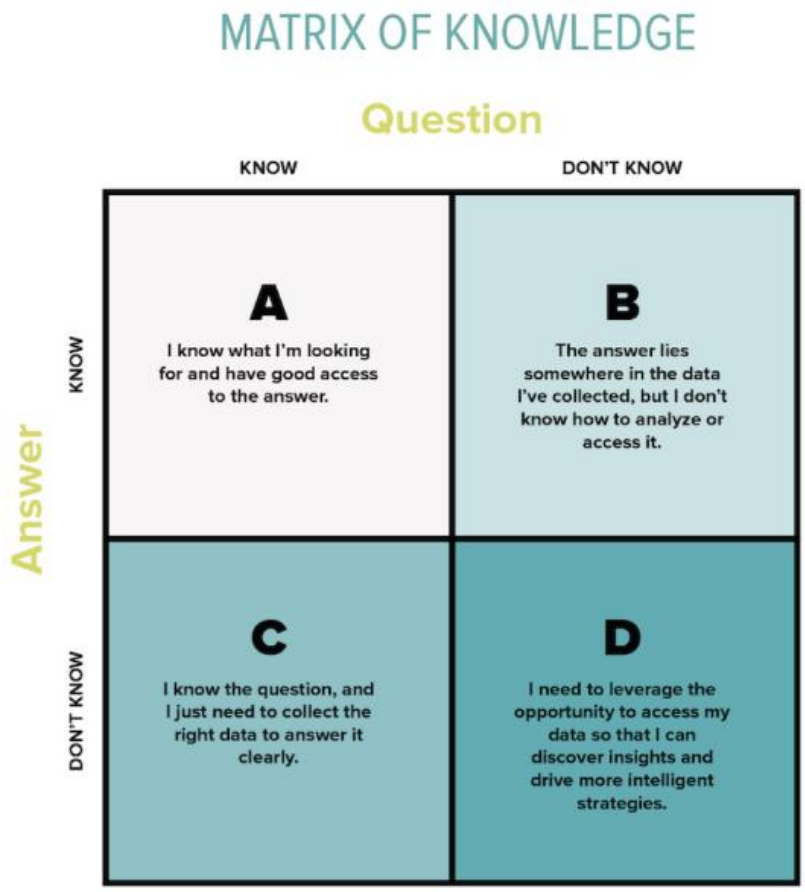
智慧探索的精髓在於...?



"Seeking for answers!"

A. I know what I know > Retrieve

B. I know what I don't know > Search/retrieve/analyze

C. I don't know what I know > Search/retrieve/analyze

D. I don't know what I don't know > **Smart discovery**

"Seeking for questions!"

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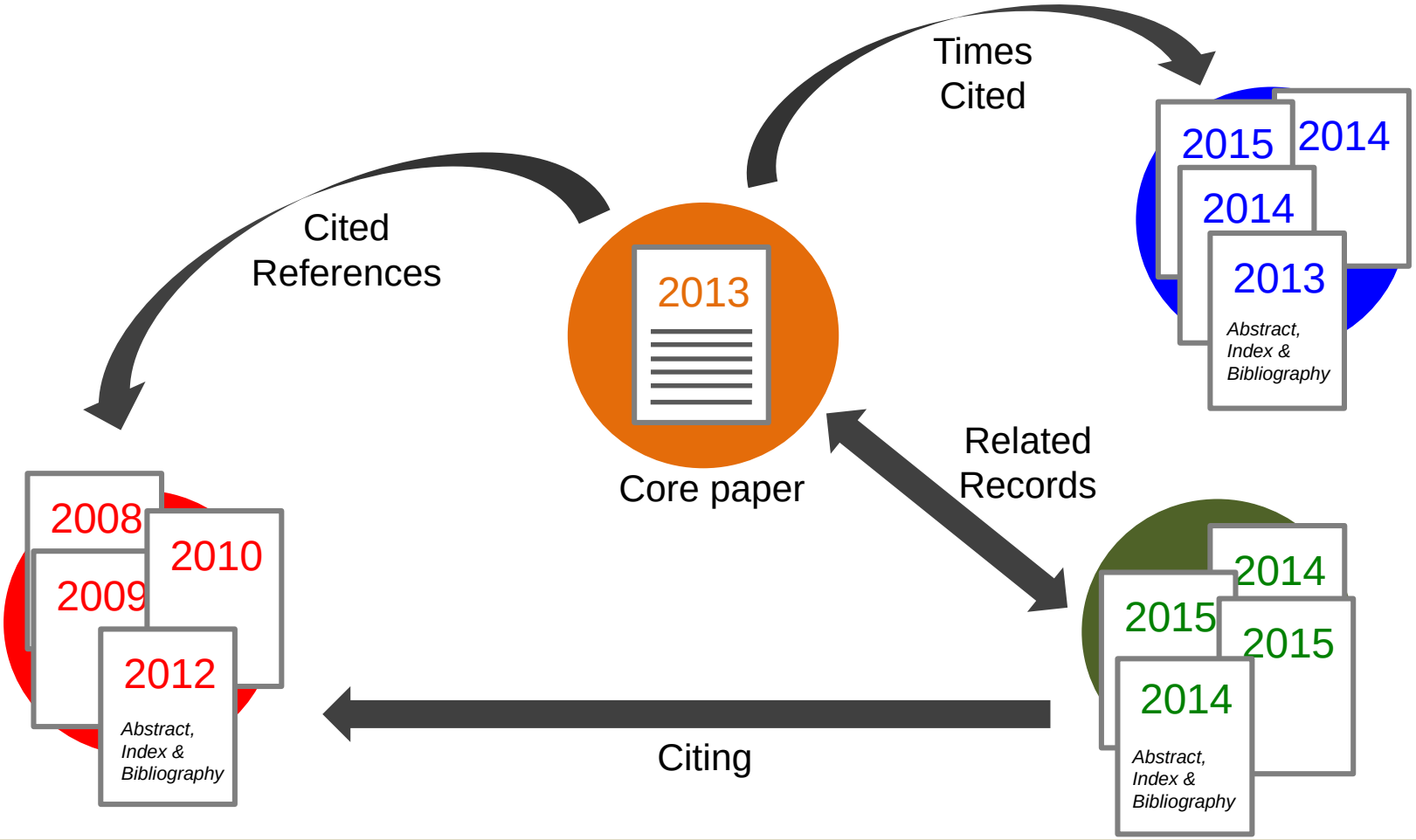
智慧探索之一: 引文索引



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創意寫作，抑或是創意抄襲？

Intentional or unintentional?

- 抄襲
- 自我抄襲或引用
- “Salami slicing”
- Publishing everything versus selective publishing

Source: Marcel A. L. M. van Assen et al, “Why publishing everything is more effective than selective publishing of statistically significant results”, journals.plos.org

Highly intentional

- 寫手 (Ghost authorship)
- 造假

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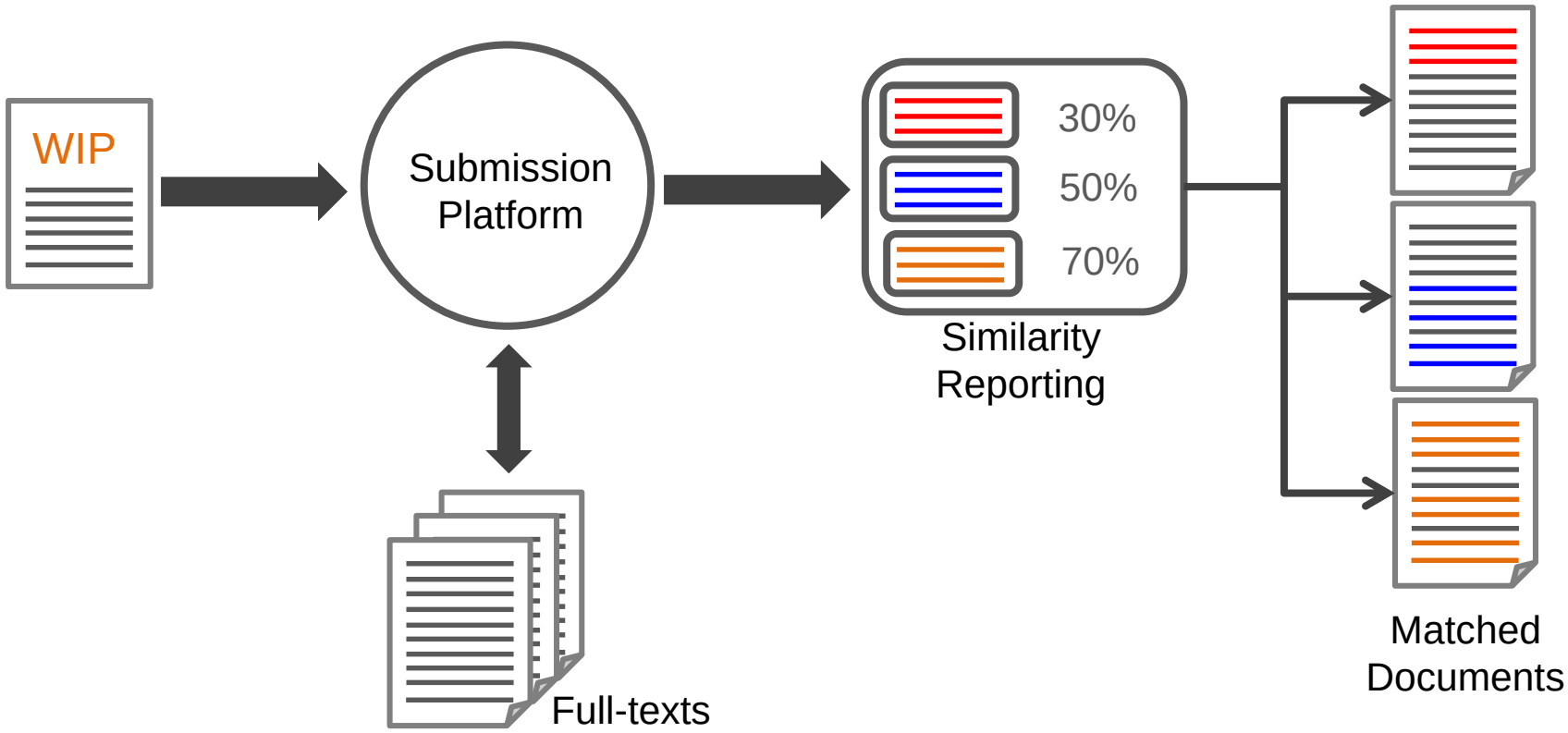
智慧探索之二: 文字相似度分析



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社群合作早已深入研究的各個階段

增加曝光度的 7 個方法：

1. 發表初期結果
2. 鼓勵意見回饋
3. 貼出已發表之作品
4. 貼出補充資料
5. 在社群中分享
6. 分享成功經驗
7. 持續更新個人作品清單

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文獻管理新思考：正確引用之外?

- 書目管理工具提供不同書目格式
- 大部份書目管理工具也包含：
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  2. 協作平台
  3. 檔案管理
- 新思考：原創性檢查在其中扮演的角色？

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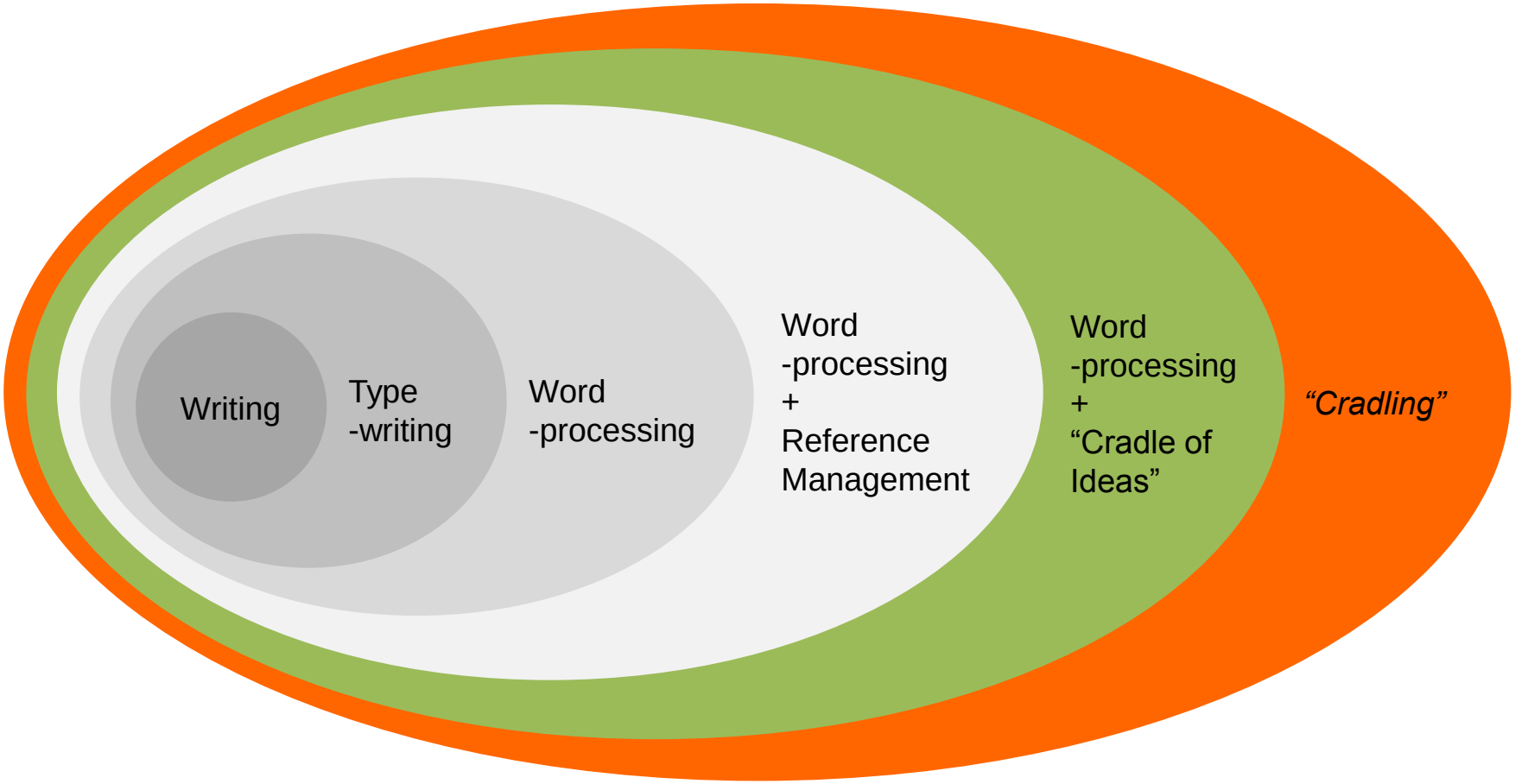
寫作概念與工具也在不斷進化



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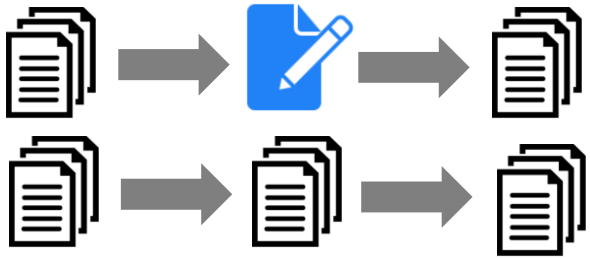
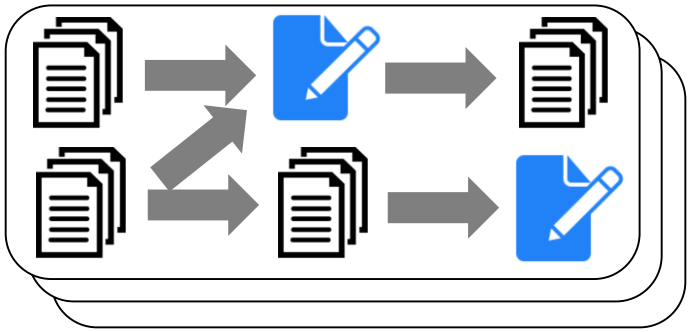
Search & gather digital information

組織知識
Sequence pieces of information into small stories



延伸觸角
Submit to the targeted audiences on the right formats



事實

證據

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用單一工具整合寫作流程：EEWOWW

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出版 / 發表: 圖書館該扮演的角色?

- 智慧發掘
- 社群合作
- 寫作典範

- 擬定發表策略

- 工具應用
- 口語化

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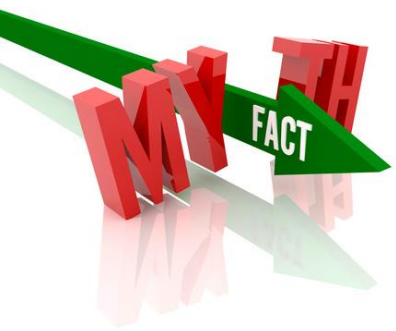
發表策略: 找到對的觀眾

重點在於問 “對” 的問題, 甚至要早在開始寫作之前-

在發表之前
就必須問的問題

1. **觀眾群:** 誰會感興趣?
2. **研究目的及性質:** 全新研究? 文獻探討? 還是技術應用?
3. **作者**: 誰是作者?
4. **選擇對的期刊**: 誰是讀者群?



“發表在高 Impact Factor 的期刊, 是否就表示文章的被引用率會較高?”

5. **接下來**: 如何試水溫?

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提升能見度: 圖書館還能做什麼?

1. Authoring

- 智慧發掘
- 社群合作
- 寫作典範

2. Publishing

- 擬定發表策略

3. Outreaching

- 工具應用
- 口語化

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提升能見度之一：工具應用

- 參與會議
- 與其他研究者尋求合作
- 學習應用工具如社群網站及

KUDOS
Greater Research Impact

ORCID
Connecting Research and Researchers

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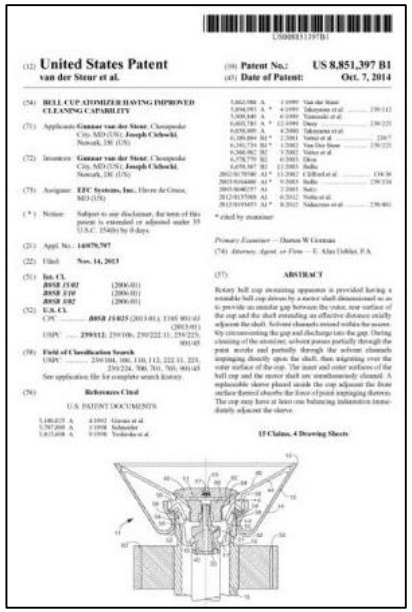
提升能見度之二: 讓研究與大眾產生連結



(12) **United States Patent**
van der Steur et al.

(10) Patent No.: US 8,851,397 B1
(45) Date of Patent: Oct. 7, 2014

(54) **BELL CUP ATOMIZER HAVING IMPROVED CLEANING CAPABILITY**

(71) Applicants: **Gunnar van der Steur**, Chesapeake City, MD (US); **Joseph Cichocki**, Newark, DE (US)

(72) Inventors: **Gunnar van der Steur**, Chesapeake City, MD (US); **Joseph Cichocki**, Newark, DE (US)

(73) Assignee: **EFC Systems, Inc.**, Havre de Grace, MD (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/079,707**

(22) Filed: **Nov. 14, 2013**

(51) **Int. Cl.**
B05B 15/02 (2006.01)
B05B 5/10 (2006.01)
B05B 5/02 (2006.01)

(52) **U.S. Cl.**
CPC ***B05B 15/025*** (2013.01); *Y10S 401/01* (2013.01)
USPC **239/112**; 239/106; 239/222.11; 239/223; 239/224; 366; 701; 703; 401/45

(58) **Field of Classification Search**
USPC 239/104, 106, 118, 112, 222.11, 223, 239/224, 366, 701, 703; 401/45
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS

13 Claims, 4 Drawing Sheets

(57) **ABSTRACT**

Rotary bell cup atomizing apparatus is provided having a rotatable bell cup driven by a motor shaft, dimensioned so as to provide an annular gap between the outer, rear surface of the cup and the shaft extending an effective distance axially adjacent the shaft. Solvent channels extend within the motor. By circumventing the gap and discharge into the gap. During cleaning of the atomizer, solvent passes partially through the joint nozzle and partially through the solvent channels impinging directly upon the shaft, then migrating over the outer surface of the cup. The inner and outer surfaces of the bell cup and the motor shaft are simultaneously cleaned. A replaceable sleeve placed inside the cup adjacent the front surface thereof absorbs the force of paint impinging thereon. The cup may have at least one balancing indentation immediately adjacent the sleeve.

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PLoS BIOLOGY

A Role for Parasites in Stabilising the Fig-Pollinator Mutualism

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1 Division of Biology, Imperial College London, Ascot, United Kingdom, 2 School of Biological Sciences, University of Reading, Reading, United Kingdom, 3 School of Biological Sciences, University of East Anglia, Norwich, United Kingdom, 4 School of Marine and Tropical Biology, James Cook University, Townsville, Queensland, Australia, 5 Natural Environment Research Council (NERC) Centre for Population Biology, Imperial College London, Ascot, United Kingdom

Mutualisms are interspecific interactions in which both players benefit. Explaining their maintenance is problematic, because cheaters should outcompete cooperative conspecifics, leading to mutualism instability. Monoecious figs (*Ficus*) are pollinated by host-specific wasps (Agaonidae), whose larvae gall ovules in their "fruits" (syconia). Female pollinating wasps oviposit directly into *Ficus* ovules from inside the receptive syconium. Across *Ficus* species, there is a widely documented segregation of pollinator galls in inner ovules and seeds in outer ovules. This pattern suggests that wasps avoid, or are prevented from ovipositing into, outer ovules, and this results in mutualism stability. However, the mechanisms preventing wasps from exploiting outer ovules remain unknown. We report that in *Ficus rubiginosa*, offspring in outer ovules are vulnerable to attack by parasitic wasps that oviposit from outside the syconium. Parasitism risk decreases towards the centre of the syconium, where inner ovules provide enemy-free space for pollinator offspring. We suggest that the resulting gradient in offspring viability is likely to contribute to selection on pollinators to avoid outer ovules, and by forcing wasps to focus on a subset of ovules, reduces their galling rates. This previously unidentified mechanism may therefore contribute to mutualism persistence independent of additional factors that invoke plant defences against pollinator oviposition, or physiological constraints on pollinators that prevent oviposition in all available ovules.

Citation: Dunn DW, Segar ST, Ridley J, Chan R, Crozier RH, et al. (2008) A role for parasites in stabilising the fig-pollinator mutualism. PLoS Biol 6(3): e59. doi:10.1371/journal.pbio.0060059

Introduction

In a biosphere driven by selection at the level of the individual gene [1], explaining the existence of cooperation, such as mutualism, is a major scientific challenge. Mutualisms are interspecific ecological interactions characterised by reciprocal benefits to both partners [2] that usually involve costly investments by each. What factors thus prevent one partner from imposing unsustainable costs onto the other to enable mutualism stability [3–7]? In some mutualisms, the larger, more sessile partner, manipulates the other by directing benefits to cooperative individuals and costs to cheaters [8–7]. However, a general consensus on mutualism persistence has only recently been formulated, and this clearly shows that a high benefit-to-cost ratio of cooperating is one important factor [8,9].

Fig trees (*Ficus*) and their host-specific agaonid pollinator wasps are a classic example of an obligate mutualism [10,11]. The wasps pollinate the trees, and the trees provide resources for wasp offspring. In monoecious *Ficus*, female wasps push their way through a specialised entrance into receptive syconia (colloquially, "figs"), which are enclosed inflorescences. The wasps then pollinate the tree while depositing their eggs individually into ovules. Thus, each egg laid costs the tree one seed, but upon emergence, the female wasp offspring disperse that tree's pollen. Trees need to produce both wasps and seeds for the mutualism to persist, but natural selection should favour wasps that exploit the maximum number of fig ovules in the short term, resulting in a conflict of interest between wasp and tree. However, the mutualism has persisted for at least 60 million years and has radiated into more than 750 species pairs [12]. The mechanisms preventing wasps from overexploiting figs remain unknown, despite intensive study over four decades.

Within receptive syconia, the lengths of floral styles are highly variable [13,14], and ovipositing pollinators (foundresses) favour flowers with shorter styles for their offspring [15–18]. Style and pedicel lengths of flowers are negatively correlated. Short-styled ovules develop into seeds or galls (when a wasp is present) near the syconium inner cavity, while most long-styled ovules develop into seeds near the outer wall [19,20] (Figure 1). These patterns have been shown to reflect the oviposition preferences of foundresses, and are unlikely to be the result of greater elongation of pedicels containing eggs during syconial maturation, because in receptive syconia, pollinators' eggs are mainly present in short-styled inner ovules [16]. These widespread observations have been tied to four, not necessarily mutually exclusive, mechanisms that have been proposed to stabilise the fig-pollinator mutualism: (1) Unbeatable seeds—outer ovules may be defended biochemically or physically against oviposition or larval development [21]. However, no mechanism has yet been identified. (2) Short ovipositors—pollinators' ovipositors may be too short to fully penetrate the long styles of

Academic Editor: Anurag A. Agrawal, Cornell University, United States of America

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Abbreviation: s.e., standard error

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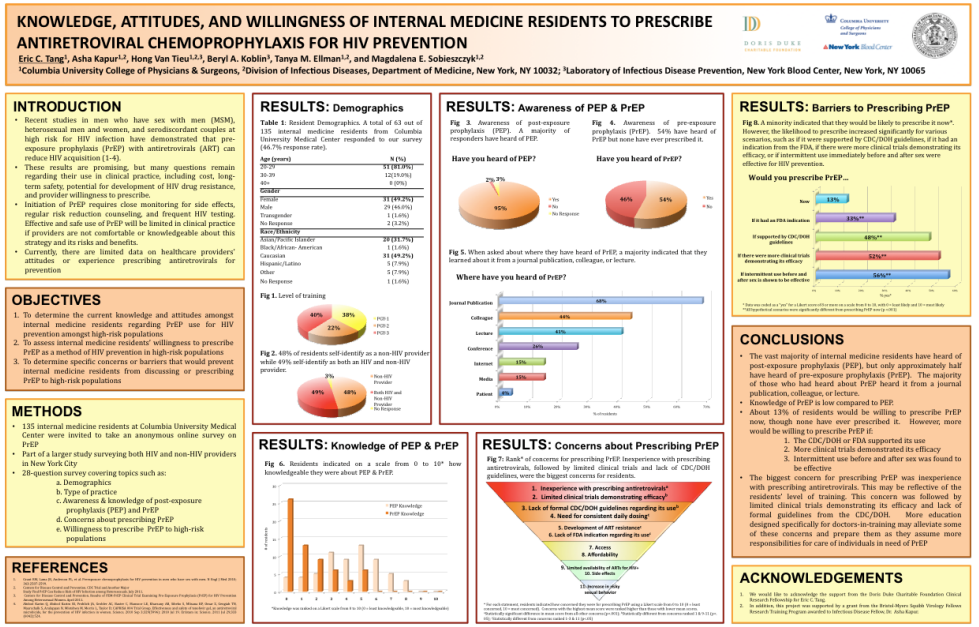

KNOWLEDGE, ATTITUDES, AND WILLINGNESS OF INTERNAL MEDICINE RESIDENTS TO PRESCRIBE ANTIRETROVIRAL CHEMOPROPHYLAXIS FOR HIV PREVENTION

Eric C. Tang[1], Asha Kapur[1,2], Hong Van Tieu[1,2,3], Beryl A. Koblin[3], Tanya M. Ellman[1,2], and Magdalena E. Sobieszczyk[1,2]
[1]Columbia University College of Physicians & Surgeons, [2]Division of Infectious Diseases, Department of Medicine, New York, NY 10032; [3]Laboratory of Infectious Disease Prevention, New York Blood Center, New York, NY 10065

INTRODUCTION

- Recent studies in men who have sex with men (MSM), heterosexual men and women, and serodiscordant couples at high risk for HIV infection have demonstrated that pre-exposure prophylaxis (PrEP) with antiretrovirals (ART) can reduce HIV acquisition [1–4].
- These results are promising, but many questions remain regarding their use in clinical practice, including cost, long-term safety, potential for development of HIV drug resistance, and provider willingness to prescribe.
- Initiation of PrEP requires close monitoring for side effects, regular risk reduction counseling, and frequent HIV testing. Effective and safe use of PrEP will be limited in clinical practice if providers are not comfortable or knowledgeable about this strategy and its risks and benefits.
- Currently, there are limited data on healthcare providers' attitudes or experience prescribing antiretrovirals for prevention

OBJECTIVES

1. To determine the current knowledge and attitudes amongst internal medicine residents regarding PrEP use for HIV prevention amongst high-risk populations
2. To assess internal medicine residents' willingness to prescribe PrEP as a method of HIV prevention in high-risk populations
3. To determine specific concerns or barriers that would prevent internal medicine residents from discussing or prescribing PrEP to high-risk populations

METHODS

- 135 internal medicine residents at Columbia University Medical Center were invited to take an anonymous online survey on PrEP
- Part of a larger study surveying both HIV and non-HIV providers in New York City
- 28-question survey covering topics such as:
  a. Demographics
  b. Type of practice
  c. Awareness & knowledge of post-exposure prophylaxis (PEP) and PrEP
  d. Concerns about prescribing PrEP
  e. Willingness to prescribe PrEP to high-risk populations

REFERENCES

RESULTS: Demographics

Table 1: Resident Demographics. A total of 63 out of 135 internal medicine residents from Columbia University Medical Center responded to our survey (46.7% response rate).

	N (%)
Age (years)	
20-29	51 (81.0%)
30-39	12(19.0%)
40+	0 (0%)
Gender	
Female	31 (49.2%)
Male	29 (46.0%)
Transgender	1 (1.6%)
No Response	2 (3.2%)
Race/Ethnicity	
Asian/Pacific Islander	20 (31.7%)
Black/African- American	1 (1.6%)
Caucasian	31 (49.2%)
Hispanic/Latino	5 (7.9%)
Other	5 (7.9%)
No Response	1 (1.6%)

Fig 1. Level of training

Fig 2. 48% of residents self-identify as a non-HIV provider while 49% self-identify as both an HIV and non-HIV provider.

RESULTS: Knowledge of PEP & PrEP

Fig 6. Residents indicated on a scale from 0 to 10* how knowledgeable they were about PEP & PrEP.

*Knowledge was ranked on a Likert scale from 0 to 10 (1 = least knowledgeable; 10 = most knowledgeable)

RESULTS: Awareness of PEP & PrEP

Fig 3. Awareness of post-exposure prophylaxis (PEP). A majority of responders have heard of PEP.

Fig 4. Awareness of pre-exposure prophylaxis (PrEP). 54% have heard of PrEP but none have ever prescribed it.

Fig 5. When asked about where they have heard of PrEP, a majority indicated that they learned about it from a journal publication, colleague, or lecture.

RESULTS: Concerns about Prescribing PrEP

Fig 7: Rank* of concerns for prescribing PrEP. Inexperience with prescribing antiretrovirals, followed by limited clinical trials and lack of CDC/DOH guidelines, were the biggest concerns for residents.

*Per each statement, residents indicated how concerned they were for prescribing PrEP using a Likert scale from 0 to 10 (1 = least concerned; 10 = most concerned). Concerns with the highest mean scores were ranked higher. Data from each Likert scale were analyzed using a Kruskal-Wallis test. Statistically significant differences in mean scores from all other concerns (p < 0.05). Statistically different from concerns ranked 1-4 (p < 0.05).

RESULTS: Barriers to Prescribing PrEP

Fig 8. A minority indicated that they would be likely to prescribe it now*. However, the likelihood to prescribe increased significantly for various scenarios, such as if it were supported by CDC/DOH guidelines, if it had an indication from the FDA, if there were more clinical trials demonstrating its efficacy, or if intermittent use immediately before and after sex were effective for HIV prevention.

Would you prescribe PrEP...

*Data was ranked as "yes" for a Likert score of 5 or more on a scale from 0 to 10, with 0 = least likely and 10 = most likely
**Of hypothetical scenarios were significantly different from prescribing PrEP now (p < 0.05).

CONCLUSIONS

- The vast majority of internal medicine residents have heard of post-exposure prophylaxis (PEP), but only approximately half have heard of pre-exposure prophylaxis (PrEP). The majority of those who had heard about PrEP heard it from a journal publication, colleague, or lecture.
- Knowledge of PrEP is low compared to PEP.
- About 13% of residents would be willing to prescribe PrEP now, though none have ever prescribed it. However, more would be willing to prescribe PrEP if:
  1. The CDC/DOH or FDA supported its use
  2. More clinical trials demonstrated its efficacy
  3. Intermittent use before and after sex was found to be effective
- The biggest concern for prescribing PrEP was inexperience with prescribing antiretrovirals. This may be reflective of the residents' level of training. This concern was followed by limited clinical trials demonstrating its efficacy and lack of formal guidelines from the CDC/DOH. More education designed specifically for doctors-in-training may alleviate some of these concerns and prepare them as they assume more responsibilities for care of individuals in need of PrEP.

ACKNOWLEDGEMENTS

1. We would like to acknowledge the support from the Doris Duke Charitable Foundation Clinical Research Fellowship for Eric C Tang.
2. In addition, this project was supported by a grant from the Bristol-Myers Squibb Virology Fellows Research Training Program awarded to Infectious Disease Fellow, Dr. Asha Kapur.

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讓研究從高塔上走下來

Plain language means users can

find what they need
understand what they find
use the information

to meet their goals

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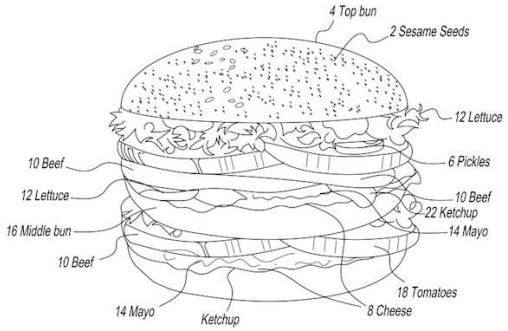
Source: Ginny Redish, Center for Plain Language
www.centerforplainlanguage.org

口語化原則: 簡明扼要



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Fifty years ago, Monty Hyams, the now 95-year-old founder of what is today known as DWPI, took on the labor-intensive job of patent research for his customers after he saw them going to the patent office, reading through the patents and classifying them. He realized, "If I can do this, they don't have to."

"The vision that Monty Hyams had when he started his company, Derwent Information, 50 years ago still holds true today through the provision of patent summaries describing in plain English the key aspects of the patent, thereby allowing customers to find records of interest without having to obtain or translate the full patent," says Robert Adams, senior director of DWPI. "Of course we use more technology today, but the fundamental value proposition for DWPI and the value we provide our customers today goes back to the work of Monty Hyams."

轉化能見度為影響力: 三分鐘簡報

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Opening your mind's eye: collaborating with a computer to reveal visual imagination

By Michelle Greene, Raymundo Gonzalez, Alex Nguyen, and Khang Duong

Backed by Đặng Trí Nguyễn, Vicki L Chandler, Trang Ha Tran, Chisom Egwuatu, Brad Wyble, Eamon Caddigan, Thang Luong, Linh Dao, Ari Bader-Natal, Michael Yang,
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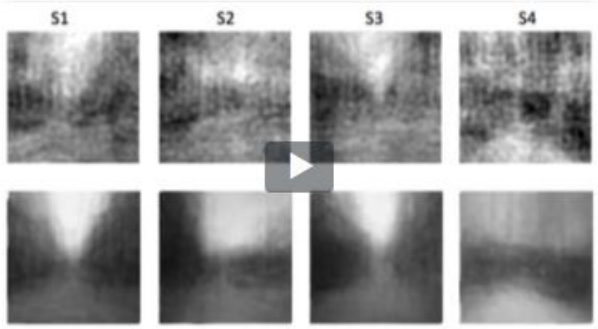

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How does this work?

Minerva Schools at KGI, Stanford University | Stanford, California | Computer Science | Neuroscience

Overview | Methods | Lab Notes (1) | Results | Discussion (2)

About This Project

Close your eyes and visualize the streets of your childhood. What do you remember of what you have seen? Now, if we both are asked to picture a street, will we imagine completely different images based in our individual experiences, or do we have a common prototype for what a street looks like? We will use an evolutionary algorithm to

What is the context of this research?

This study aims to create a literal picture from your visual imagination. Previous studies have successfully recovered mental representations for relatively simple categories such as letters or smiley faces. These reconstruction methods have considered images to be two-dimensional arrays of pixels. If one randomly chooses a darkness value for each pixel, then there are numLevels^nPixels possible images that can be created. For example, for even a 64x64 thumbnail-sized image with 255 possible gray levels, there are more possible images that can be created than atoms in the Universe! By contrast, we consider a scene to be represented by extended surfaces rather than pixels. This both reduces the dimensionality of of problem while creating more realistic looking images.

What is the significance of this project?

A fundamental goal for understanding human vision is to identify the mapping between image features and subsequent categorization. Our study will help us understand how personal experiences influence the mental images that we create when we think about a category such as "street". Do different people extract the same features (common prototype), or do our visual experiences create a unique "templates"? This study will have implications for basic science, as well as potential for applications. In addition to providing critical insight into how we form complex visual categories, the technology that we are developing in this project can be used for enhancing the abilities of police sketch artists, and in architecture and design choices to make for a more legible and memorable world.

What are the goals of the project?

- Use features of Convolutional Neural Networks to increase detail in our images.
- Test the hypothesis that scene category representations are unique to observers by checking the extent to which reconstructions resemble scenes from three kinds of individual experience:
  - Early visual experience: the city where the individual grew up.
  - Current experience: city where the individual lives.
  - Added experience: Average of the scenes from all locations lived

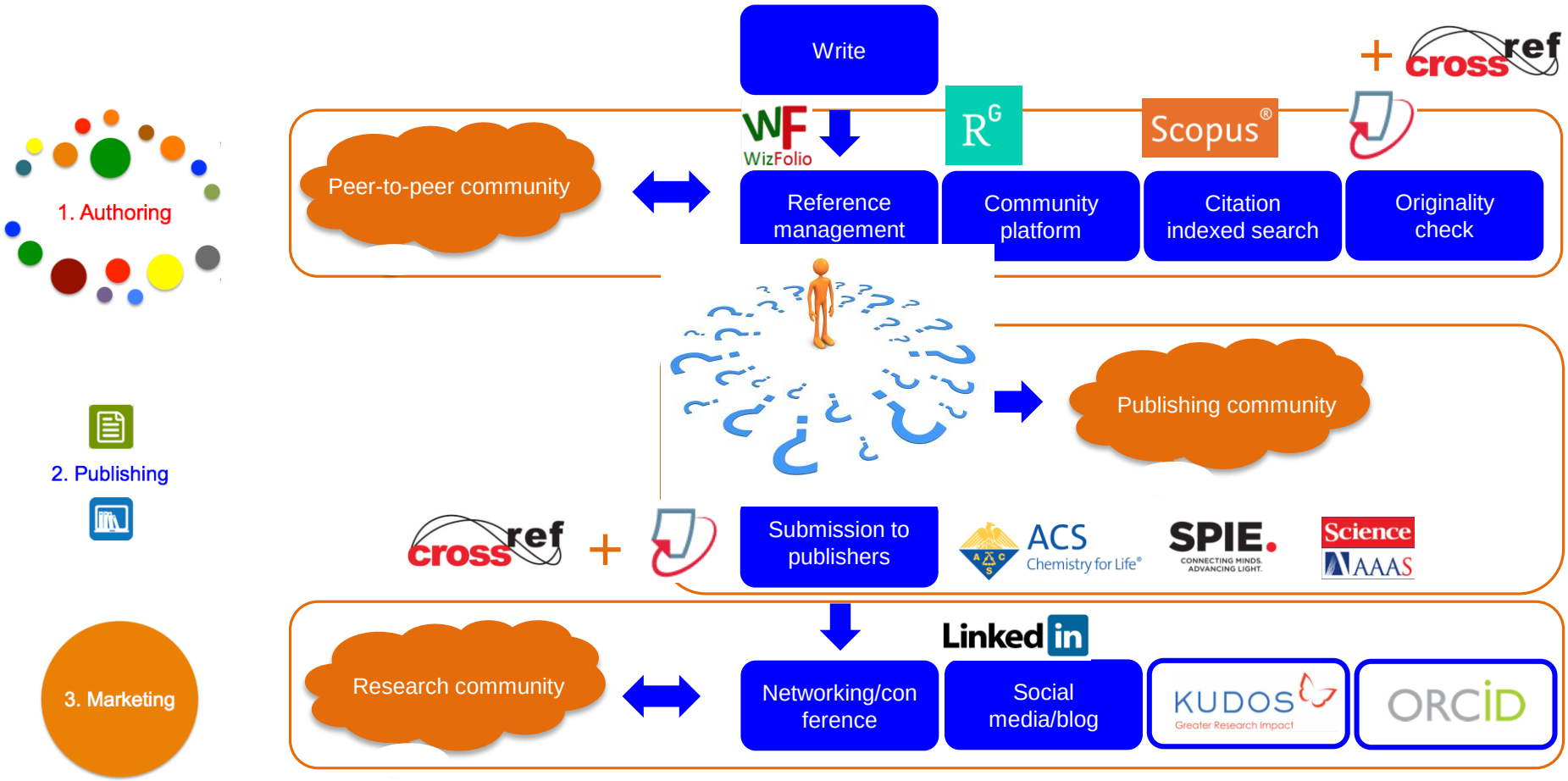
Altogether, these experiments will provide critical insight into how we conceptualize complex scenes, laying the foundations for understanding how visual information is flexibly represented for recognition.

Budget

Our data are generated by human volunteers who are paid an honorarium of $10/hour. The experiment takes approximately 2 hours, and we anticipate recruiting 32 participants. We plan to release our published results in an open access journal so that all backers may be able to read the research. We anticipate that two papers will be generated with open access publication fees of approximately $1500 per article

Payment to participants $700

用對的工具, 在對的管道, 給對的人



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