

Thinker, Soldier, Scribe: les rôles des auteurs d'articles scientifiques



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Justification

- Les scientifiques sont jugés sur leur production scientifique
- Les positions de 1^{er} et dernier auteur sont valorisées (faculté, SNF, NIH...), mais souvent par des raisonnements implicites
- Certaines positions sont ambiguës (2^{ème}, avant-dernier,...)
- Les règles d'authorship (ICMJE) ne disent rien de l'ordre
- Fréquence mal connue de rôle d'auteur « immérité »

Questions

- Que font au juste les auteurs d'articles scientifiques?
- Que signifie l'ordre des auteurs?

Méthode

- Etude transversale
- Articles de recherche des Annals of Internal Medicine de 2015:
 - 119 articles
 - 1139 auteurs (9.6 par article)
- Variables principales:
 - Rang de l'auteur (1^{er}, 2^{ème}, milieu, avant-dernier, dernier)
 - 10 contributions, oui/non
 - Critères authorship ICMJE rempli
 - Diplôme, pays, institution

Network Meta-analysis for Clinical Practice Guidelines: A Case Study on First-Line Medical Therapies for Primary Open-Angle Glaucoma

Benjamin Rouse, MHS; Andrea Cipriani, MD, PhD; Qiyuan Shi, MHS; Anne L. Coleman, MD, PhD; Kay Dickersin, MA, PhD; and Tianjing Li, MD, MHS, PhD

- 1 Author Contributions:** Conception and design: B. Rouse, A. Cipriani, T. Li.
- Analysis and interpretation of the data: B. Rouse, A. Cipriani, Q. Shi, A.L. Coleman, K. Dickersin, T. Li.
- Drafting of the article: B. Rouse, A. Cipriani, T. Li.
- Critical revision of the article for important intellectual content: B. Rouse, A. Cipriani, A.L. Coleman, K. Dickersin, T. Li.
- Final approval of the article: A. Cipriani, A.L. Coleman, K. Dickersin, T. Li.
- Provision of study materials or patients: T. Li.
- Statistical expertise: T. Li.
- Obtaining of funding: K. Dickersin.
- Administrative, technical, or logistic support: T. Li.
- Collection and assembly of data: B. Rouse, Q. Shi, T. Li.

Critères ICMJE

2. *Who Is an Author?*

The ICMJE recommends that authorship be based on the following 4 criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Echantillon

- 119 études:
 - 17 RCT
 - 49 études observationnelles
 - 15 modélisations
 - 31 revues systématiques / métaanalyses
 - 6 revues narratives
 - 1 étude qualitative
- 1139 auteurs (2-29 par étude, moyenne 9.6)
 - 61% diplôme médical, 31% autre doctorat, 31% master
 - 52% affiliés à un hôpital ou école de médecine
 - 73% basés aux USA
 - 15% affiliation avec entité privée

Fréquences de contributions



Author contribution	Overall, % (N)	According to author rank, %					
		First	Second	Middle	Next to last	Last	P value*
1. Conception and design of the study	52.2 (595)	95.3	61.5	36.6	49.6	87.4	<0.001
2. Analysis and interpretation of the data	73.6 (838)	97.7	89.9	63.4	63.0	89.9	<0.001
3. Drafting of the article	45.7 (520)	98.4	57.8	32.2	40.0	58.0	<0.001
4. Critical revision of the article for important intellectual content	74.8 (852)	83.7	79.8	69.3	69.6	96.6	<0.001
5. Final approval of the article (ICMJE criterion 3)	88.8 (1011)	96.9	85.3	86.1	88.7	98.3	<0.001
6. Provision of study materials or patients	24.2 (276)	36.4	16.5	23.8	17.4	26.9	0.002
7. Statistical expertise	22.8 (260)	48.1	29.4	15.9	18.3	32.8	<0.001
8. Obtaining of funding	17.6 (200)	38.0	13.8	8.4	14.8	52.9	<0.001
9. Administrative, technical, or logistic support	28.5 (325)	38.0	26.6	23.1	34.8	44.5	<0.001
10. Collection and assembly of data	49.7 (566)	76.0	55.0	45.4	39.1	50.4	<0.001

Contributions et place d'auteur

Contribution ↓	Authorrank →		First (vs middle)		Second (vs middle)		Next to last (vs middle)		Last (vs middle)	
	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value		
1. Conception and design of the study	6.9 (2.6 – 17.9)	<0.001	1.5 (0.9 – 2.6)	0.15	1.6 (0.9 – 2.7)	0.08	6.4 (2.8 – 14.7)	<0.001		
2. Analysis and interpretation of the data	10.2 (1.1 – 91.5)	0.038	3.5 (1.6 – 7.8)	0.002	1.6 (0.9 – 2.8)	0.15	3.4 (1.1 – 9.9)	0.027		
3. Drafting of the article	73.5 (9.2 – 584.4)	<0.001	2.3 (1.3 – 4.0)	0.004	1.0 (0.6 – 1.7)	0.96	1.3 (0.7 – 2.6)	0.43		
4. Critical revision of the article for important intellectual content	0.4 (0.2 – 1.0)	0.042	1.4 (0.7 – 2.8)	0.30	0.6 (0.3 – 1.0)	0.054	13.8 (2.8 – 68.4)	0.001		
5. Final approval of the article	1.3 (0.3 – 6.2)	0.74	0.6 (0.3 – 1.4)	0.27	1.7 (0.8 – 3.8)	0.17	2.5 (0.5 – 13.5)	0.28		
6. Provision of study materials or patients	6.5 (2.2 – 19.2)	0.001	1.2 (0.6 – 2.6)	0.59	1.2 (0.6 – 2.4)	0.52	1.4 (0.6 – 3.2)	0.38		
7. Statistical expertise	1.5 (0.7 – 3.1)	0.27	1.3 (0.7 – 2.3)	0.37	1.0 (0.5 – 1.8)	0.94	1.1 (0.5 – 2.2)	0.89		
8. Obtaining of funding	2.6 (1.1 – 6.5)	0.035	1.5 (0.7 – 3.4)	0.30	1.7 (0.8 – 3.6)	0.13	18.0 (6.5 – 49.8)	<0.001		
9. Administrative, technical, or logistic support	1.0 (0.5 – 1.9)	0.95	0.7 (0.4 – 1.4)	0.32	1.8 (1.1 – 3.1)	0.023	2.6 (1.4 – 5.1)	0.004		
10. Collection and assembly of data	1.3 (0.6 – 3.0)	0.50	2.0 (1.1 – 3.4)	0.018	0.7 (0.4 – 1.1)	0.12	0.7 (0.3 – 1.4)	0.26		

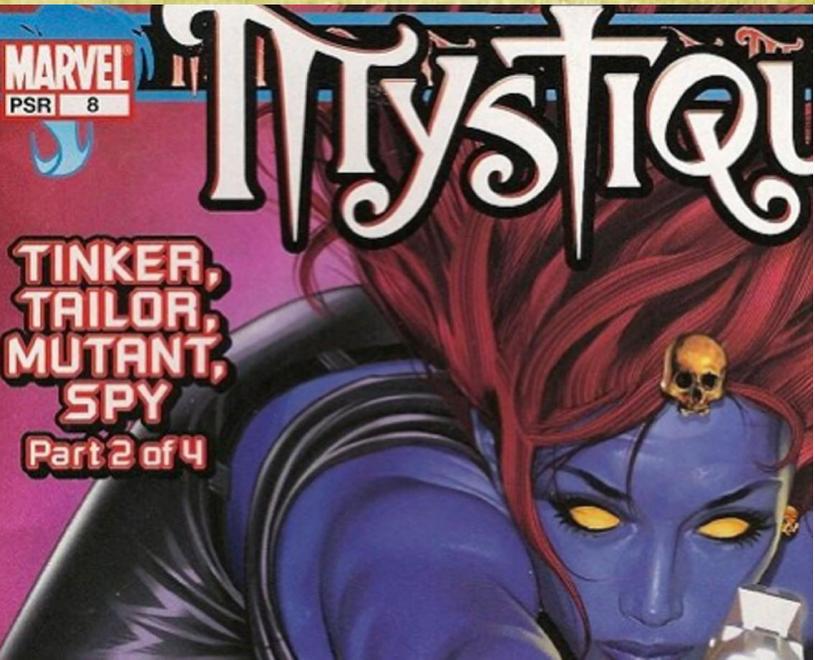
Régression logistique conditionnelle

Thinker, soldier, scribe

Analyse factorielle	Dimension 1 ("Thinker")	Dimension 2 ("Scribe")	Dimensions 3 ("Soldier")
Conception and design of the study	0.70 (0.55)		
Analysis and interpretation of the data		0.66 (0.55)	
Drafting of the article		0.60 (0.41)	
Critical revision of the article for important intellectual content	0.69 (0.56)		
Provision of study materials or patients			0.64 (0.52)
Statistical expertise		0.76 (0.67)	
Obtaining of funding	0.65 (0.55)		
Administrative, technical, or logistic support			0.58 (0.47)
Collection and assembly of data			0.75 (0.65)



76* **Tinker, Tailor**
Tinker, tailor, soldier, sailor,
Rich man, poor man, beggar man, thief.



et aussi...
John LeCarré
Virginia Woolfe
Yarbirds
Radiohead
Queen

Scores en fonction du rang

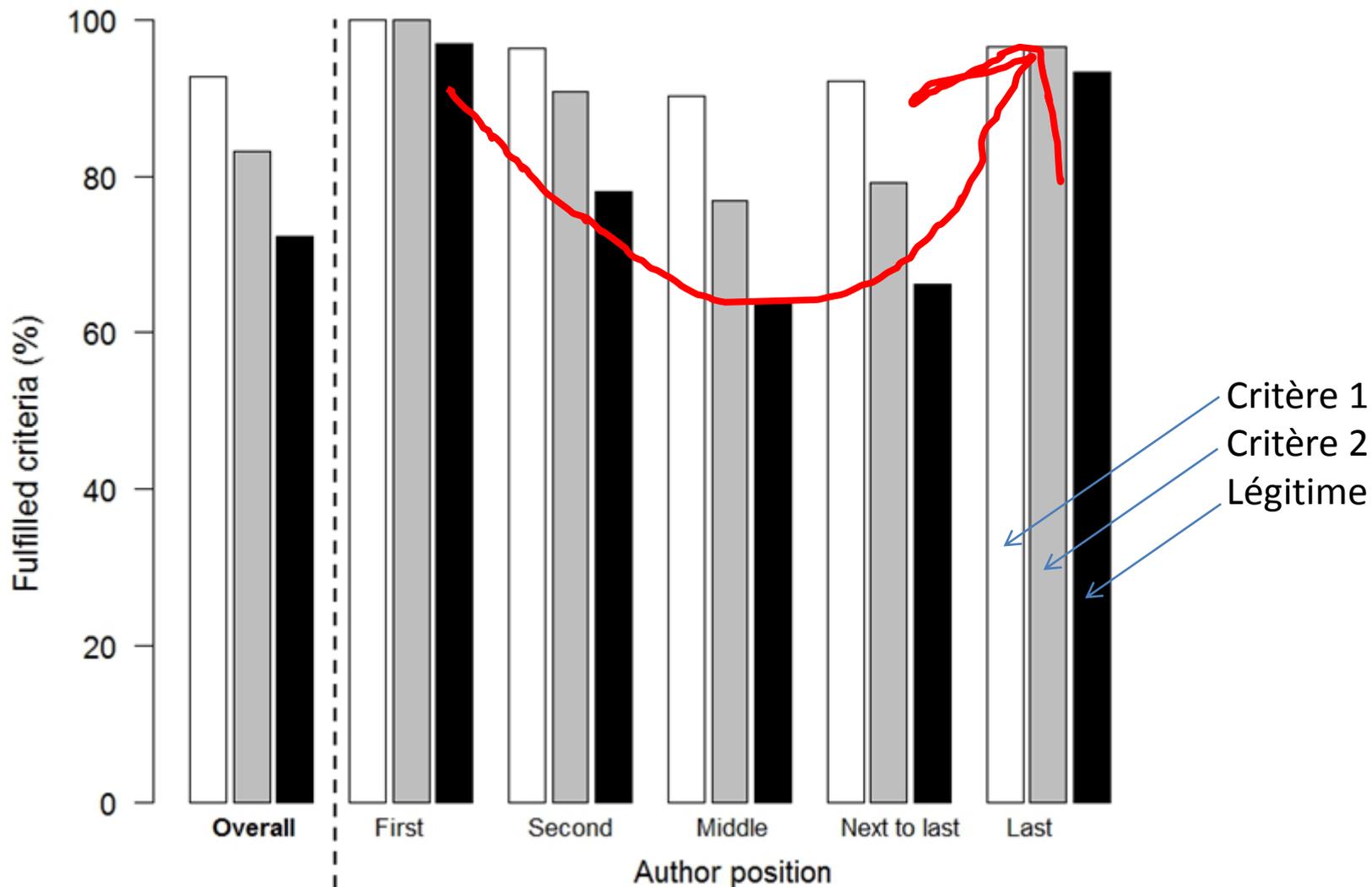
	According to author rank				
	First	Second	Middle	Next to last	Last
"Thinker" profile score*	0.57 (0.80)	0.05 (0.96)	-0.28 (0.92)	-0.06 (1.02)	0.94 (0.79)
P-values	<0.001	0.001	reference	0.022	<0.001
"Soldier" profile score*	0.55 (1.06)	-0.08 (0.96)	-0.10 (0.93)	-0.12 (1.10)	0.18 (1.07)
P-values	<0.001	0.20	reference	0.35	<0.001
"Scribe" profile score*	0.91 (0.81)	0.39 (0.94)	-0.26 (0.95)	-0.09 (0.88)	0.21 (0.92)
P-values	<0.001	<0.001	reference	0.23	<0.001

* All scores have a mean of 0 and standard deviation of 1 in the full sample

>0.35

<0.00

Conformité aux critères ICMJE



Conclusions

- Différences importantes entre les contributions des auteurs selon leur rang dans la liste
- Le premier et dernier sortent du lot mais pas pour les mêmes raisons
- Profils-type:
 - **Thinker**: conçoit, révisé, obtient financement
 - **Soldier**: fournit patients, données, logistique
 - **Scribe**: analyse, interprète, écrit
- Le premier auteur tient les 3 rôles
- Le second est un peu Scribe
- Le dernier est surtout Thinker
- L'avant-dernier est comme les auteurs du milieu, contributions faibles
- Environ un quart des auteurs ne sont pas justifiés au sens de l'ICMJE; ils se cachent au milieu de la liste

Limitations

- Un seul journal, à dominante USA
- Contributions auto-déclarées, pas de vérification
- Déclarations binaires, sans évaluation d'importance
- Types d'article/étude mélangés