Normalization of author and institution names. Importance and initiatives

Mariana Boletta
Intellectual Property & Science

Entre Pares
September 23, 2014
Objective Information for both Institution and Individual to Reveal Influence/Success and Support Decision-making

- Communicating the “success” of research can be complicated, multi-faceted, with subjective factors included.
- Therefore reliable, objective information is extremely valuable in research evaluation exercises.

- We know that a “Citation” to published work is an acknowledgement of an intellectual debt to that work, evidence of its influence.
- “Bibliometrics” or “citation metrics” have become a critical piece of research assessment exercises.
RESEARCH ASSESSMENT USED BY GOVERNMENT BODIES

US National Science Foundation
Science & Engineering Indicators

European Commission
European Union
Science & Technology Indicators

US National Research Council
Assessment of Research-Doctorate Programs

NISTEP
Japanese Science and Technology Indicators
RESEARCH ASSESSMENT USED IN CUSTOM PROJECTS - variety of organizations
Research assessment used by universities

- Annual reports, Board of trustees reports
- Strategic plans/performance dashboards
- Accreditation
- PR, research magazines
- Annual faculty reviews/tenure review
- Faculty recruitment
- Collaboration analysis
- Departmental research strategy
- Building an institutional repository
- Build faculty expertise database
Author Identification Spans the Entire Research & Publishing Process

SEEK FUNDING AND CREATE PROPOSAL

REVIEW RELEVANT HISTORIC RESEARCH DATA

PUBLISH AND PRESENT TO PEERS

FUND

DISCOVER

SHARE

THE RESEARCHER’S WORKFLOW

COLLABORATE & FORM NEW HYPOTHESIS

CREATE

TRACK PERSONAL IMPACT & PROMOTE CAREER
WHO IS AFFECTED BY AUTHOR OR INSTITUTION NORMALIZATION ISSUES

- Researchers and Collaborators
- Funding Organizations
- Journal Editors and Publishers
- University Administrators
- Librarians and Bibliometricians
Why is Normalization Important

Well-structured complete and accurate bibliographic records and metadata can add layers of value beyond

- information retrieval to contribute to
- results analysis and
- research performance analysis

Key Elements in a Citation are Author Name(s) and Affiliation – Institution Name
### What Problems are Users and Researchers Faced With

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<tr>
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<th>Frequency</th>
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</tbody>
</table>
Hi,
how can one normalize different variants of author names inside a collection of records? For instance, I have ten variants for Derek J. de Solla Price:

De Solla Price, D. J.
Price de Sola, D. J.
Price de Sole, D. J.
Price, D. J. D.
Price, D. J. D. Solla
Price, D. J. de S.
Price, D. J. de Solla
Price, de Solla D. J.
Price, Derek
Price, Derek de Solla
INACCURATE RECORD CONSEQUENCES

• Frustration
• Confusion
• Inaccuracies
• Missed Opportunities

Funding
Collaboration
Tenure & Promotion
The Implications of Name Variations Among Spanish Cardiologists

Rafael Aleixandre-Benavent, Gregorio Gómez-Alcaide, Adolfo Alonso-Arroyo, Juan C Valderrama-Zuríán

Instituto de Historia de la Ciencia y Documentación López Piñero, Consejo Superior de Investigaciones Científicas-Universidad de Valencia, Facultad de Medicina, Universidad de Valencia, Valencia, España.

To the Editor:

A recent study published in the Revista Española de Cardiología showed important variation and lack of standardization in the names of Spanish cardiologists. This may have negative consequences for the diffusion of research results and the recognition of scientific authorship. Several reasons account for this variation in the way an author signs; these include all those agents involved in the process of publication and diffusion of scientific studies: authors, publishers, and bibliographic databases.

The lack of uniformity in the way an author signs may begin with the authors themselves, as they do not always use a unique name. For instance, they may sometimes use just 1 of their 2 surnames and at other times use both surnames. Additionally, the publishers and the editorial committees of journals may introduce their own policies concerning naming, such as abbreviating names by using just the initial of the first names of the authors. However, most journals use no standardized measure and respect the signatures as sent by the authors.
NORMALIZATION TRENDS OF AUTHORS' NAMES IN SCIENTIFIC PUBLICATIONS

[Tendencias en la normalización de nombres de autores en publicaciones científicas]

by/por

Aliaga, Francisco M. (Francisco.Aliaga@uv.es)
Correa, Ana D. (acorrea@ull.es)
AUTHOR NAME DISAMBIGUATION AND UNIFICATION IN THOMSON REUTERS PRODUCTS
Over 100 million authorships in our WOS core collection.

Disambiguation involves:

- recognizing data elements (surname, initials, etc.)
- pooling together all authorships that may be the same
- comparing the data from one item to another
AUTOMATED CREATION OF AUTHORITY FILES BY:

- **Initial Clustering** – Starting from scratch, take our whole database without an authority list of known authors, identify the different authors.

- **Ongoing** – As new data comes into the database, assign author ids.

- **RID Integration** – Integrates manually created publication lists with DAIS

- **Reevaluation** – Does a fresh, full clustering on a per name basis; discovers new authors not known at the time of the initial clustering
Using a universe of authorships with the same surname and first initial, DAIS links together authorships that are sufficiently similar. Each link requires a 99% certainty.
AUTHOR NAME DISAMBIGUATION – TYPICAL CHALLENGES

Blocking factor = author’s surname (normalized) and first initial

TR internal normalized name: last names + first initial

“DECARVALHOAGUIAR PM” and “AGUIAR PD”

Result:
They don’t match so we cannot identify them as the same person.
AUTHOR NAME UNIFICATION – TYPICAL CHALLENGES

Rhombohedral–scalenohehedral calcite transition produced by adjusting the solution electrical conductivity in the system Ca(OH)$_2$–CO$_2$–H$_2$O

Jesus Garcia Carmona*, Jaime Gomez Morales*, Rafael Rodriguez Clemente*

<table>
<thead>
<tr>
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</table>

WOS core source item “Carmona”

MEDLINE source item “Garcia Carmona”

WOS citations to this item came both ways

Manual correction = the only solution
CABI and SciELO sources identified the surname as “DECASTRO”

SciELO citations to “CASTRO”

Manual correction = the only solution
INSTITUTION NAME UNIFICATION IN THOMSON REUTERS PRODUCTS

• What is institutional name unification?
  – Process of inspecting WoS publication address components in order to attribute the publication to a specific organization(s) in a specific geographic location.

• Why do we conduct unification?
  – By unifying address components to specific organizations, we ensure that all publishing occurring at or on behalf of an organization is properly attributed to that organization.

• When do we conduct unification?
  – Unification is an ongoing process, done year-round
  – Process is sometimes tied to a specific need such as a customer request, country need, or impending product update

• How do we conduct unification?
  – Using WAAN (Web Application for Address Normalization)
WAAN capabilities:

– Look up organizations to see location and web address, explore hierarchical relationships, define and identify alternate names

– Inspect existing rules for organization address components

– Look up the number of publications attributed to an organization

– Associate a unique identifier for an organization
INSTITUTION NAME UNIFICATION IN THOMSON REUTERS PRODUCTS

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<td>BROADMOOR HOSP CROWTHORNE RG11 7EG</td>
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<td>BROADGATE HOSP BEVER</td>
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Wherever Broadgreen Hospital appears with the address components shown, record will be credited to Broadgreen Hospital.
WAAN (Web Application for Address Normalization)
UNAM case
### Universidad Nacional Autonoma de Mexico

**Edit | Details | Alternative names | Rules | Relationships | Verification history | Attributions | Delete**

**Rules for Sub-O rganizations and Departments (0)**

<table>
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<th>Canonical Component</th>
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For many years Thomson Reuters has provided a wide range of tools and services supporting accurate and effective research evaluation.

Our specialist work with Web of Science data and ensure maximum collection and unification before delivery.
Results: 1,905,928
(from Web of Science Core Collection)

You searched for:
AUTHOR IDENTIFIERS: (0000*)

Create Alert
Research ID - Upload / Download

- ResearcherID is a free, online community where authors receive a unique identifier to eliminate author misidentification, increase recognition of one’s work and facilitate global collaboration among researchers.

- Researchers contribute the data themselves, but it is also possible for an institution to upload profiles and publications on behalf of their researchers.

  1. Supply data about your institution’s researchers.
  2. Create ResearcherID accounts / link existing accounts to your institution.
  3. Supply suggested publication lists for your researchers.
  4. Individual researchers edit and approve publication lists. Profiles are made public.
  5. Download ResearcherID portfolios for your institution.
  6. Create ResearcherID publication portfolios. Match records to WoS.

- Optional step:

THOMSON REUTERS

- Institution process
- Thomson Reuters process
- Individual process
FACTS AND FIGURES

- ~2M publications with an author that has an ORCID ID
- ~100k unique ORCIDs in Web of Science metadata
- ~20% of ResearcherIDs have connected ORCIDs
Integration with Researcher ID

Create an ORCID iD or associate existing ORCID iD with ResearcherID

Exchange profile and/or publication data between ORCID and ResearcherID
ORCID PROFILE INTEGRATED IN RESEARCHERID

Dr. Thorsten Hoellrigl

Email: T.Hoellrigl@avedas.com
Mobile: +49 (0)1525 310 47 01
Phone: +49 (0)71 381 90 24
URL: http://www.avedas.com
ORCID ID: 0000-0001-6080-464X
Researcher ID: A-4659-2014
ISNI: 0000 0001 1914 1338
Thanks to authors signing up for ORCIDS we are able to deliver more utility to researchers

- librarians,
- publishers,
- bibliometricicians,
- funding agencies, everyone…
TIPS FOR BEST PRACTICES

- Make scientific authors aware of the importance of his/her signature so they can be cited correctly.
- Write author name standard criteria and include them in the Instructions to the authors section of the journal.
- Include guidelines for citing the work of peers.
- Register with a system that insures uniformity in author identifiers such as ORCID or ResearcherID.
- Collaborate with national and international organizations for unified initiatives and best practices such as:
  - CONACYT in Mexico
  - CAICYT in Argentina
  - Colciencias in Colombia
  - FECYT in Spain (Spanish Foundation of Science and Technology)
THANK YOU

Acknowledgements:
Andrew McFarlane, Bob Griffith, Diana Bitting, David Cutts, Jennifer Minnick, Joelle Masciulli, Marion Muff, Nina Chang, Simon Pratt
Challenges in capturing Spanish names – Policy and examples

There are two author names. The formatted name and the full name. 
**The formatted name is the policy followed by TR for many years.**
The full name policy comes from BIOSIS processing. 
For pre-2005 TR legacy issues, the formatted name was systematically used to create a full name.

Example:
Full text = Lourdes González del Rincón
Formatted name = del Rincon, LG
Full name = Gonzalez del Rincon, Lourdes

-large volume of author names processed here at TR each year (12 million +), -our policies must be simple and consistent.
- impossible for us, and for that matter our end-users, to determine whether a multipart name should be considered an initial, middle name or part of an individuals last name
- In fact, multiple people with the same exact name may prefer different presentations of that name
- journal presentation itself can also vary.
- For the sake of consistency we define the last name as the part of the name following the last space (Rincon). Particles such as del are considered to be part of the name they precede (del Rincon)
- reduce source and cited names to a consistent presentation
- minimizing variations

Thus, we hope, with a reasonably simple set of rules, we can present author names as part of article-identifying information, readily usable by the many types and nationalities of users - at the cost of often sacrificing the courtesy of honoring the individual, national or other desires of the authors involved.
1a. Policy: Formatted Name

SPANISH NAMES

1. In Spanish names, the last name presented is to be processed as the last name.

Presented                      Process As

Lucia Maria de Ipanema Moreira Glycerio  Glycerio, LMDM

2. In Spanish and Portuguese names, if joined by a conjunction ("e" - "y") the last name presented is to be processed as the last name and the conjunction will be keyed as an initial.

Presented                      Process As

Maria Gonzalez y Rodriguez     Rodriguez, MGY

The conjunctions "y" and "e" are processed in Upper Case.

3. Single letters appearing after the last name of Spanish authors will be dropped.

Presented                      Process As

A. Gonzalez Urena M.           Urena, AG
1a. Policy: Formatted Name (continued)

4. De, le, etc., are also common particles in Latin names and the rule(s) for particle(s) will be followed.

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<td>E.B. del Castillo</td>
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</table>

5. Single letters appearing after the last name of Spanish authors will be dropped.

Examples

A. Santos-Ruiz E.          SANTOSRUIZ A
Carlos Mosquera A          MOSQUERA C

6. The superscript "a" is an abbreviation for the end of a common first name. This is not part of the name and should not be processed. For example, instead of Maria, it may be presented M superscript a. (Maria = M^a^)
1a. Policy: Full Author Name

**Spanish Names** (Spain, Argentina, Cuba, Mexico)

If the last part of the name is preceded by **de** or **del**, take the last 3 names (if given) as the surname.

**NOTE: Do not count either the de or del as one of the elements when determining the parts of the surname.**

If last part is not preceded by **de** or **del**, take the last 2 names as the surname.

Carlos Casas Sanchez  
Pascual Ortiz Rubio  
Javier Ausas Lopez de Castro  
Juan Gonzalez Rodriguez  
María Luna Veliz del Limon  
María Luna del Veliz Limon  
Domingo de Cruz Gonzalez Godinez  
Javier Ausas Lopez da Castro

Carlos [Casas Sanchez]  
Pascual [Ortiz Rubio]  
Javier [Ausas Lopez de Castro]  
Juan [Gonzalez Rodriguez]  
María [Luna Veliz del Limon]  
María Luna [del Veliz Limon]  
Domingo de Cruz [Gonzalez Godinez]  
Javier Ausas [Lopez da Castro]

**Compound Spanish Names**

You will sometimes see a connector ("e", "y" or "i") between 2 names. Count the name immediately before the connector, the connector itself and the name immediately after the connector as one name.

Rubio Ortiz y Rubio  
Rubio [Ortiz y Rubio]
1a. Policy: Full Author Name (continued)

A Spanish compound name may also appear with hyphenated initials. The initial is treated like a name and it is one of elements when determining the parts of the surname.

Carlos Bertomen-G. Carlos [Bertomen-G.]

**Examples:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Processed Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlos Casas Sanchez</td>
<td>Carlos [Casas Sanchez]</td>
</tr>
<tr>
<td>Elena de Rodriguez</td>
<td>Elena [de Rodriguez]</td>
</tr>
<tr>
<td>Catalina Garcia de Gonzalez</td>
<td>Catalina [Garcia de Gonzalez]</td>
</tr>
<tr>
<td>Julio Rodriguez</td>
<td>Julio [Rodriguez]</td>
</tr>
<tr>
<td>M. P. Geijo Martinez</td>
<td>M. P. [Geijo Martinez]</td>
</tr>
<tr>
<td>Moreno Mendana</td>
<td>Juan [Moreno Mendana]</td>
</tr>
<tr>
<td>Rafael Garcia i Cotreras</td>
<td>Rafael [Garcia i Cotreras]</td>
</tr>
</tbody>
</table>

Juan Gonzalez Martin y Canedo Rodriguez de Arcos

Processed as: Juan Gonzalez [Martin y Canedo Rodriguez de Arcos]

“de Arcos” begins with “de”, so the last 3 parts (if given) are taken as the surname.

2. “Martin y Canedo’ is a compound name so it is treated as one name.

**NOTE:** Portuguese names are often mistaken for Spanish names. When unsure, check the language of the article’s text, the address locations, name of the journal, etc.
1b. Examples

1. **Full Text:** María del Carmen Basualdo
   WoS: **Basualdo, MD** (del Carmen Basualdo, Maria)

2. **Full Text:** Verónica Martínez-de-la-Vega
   WoS: **Martinez-de-la-Vega, V** (Martinez-de-la-Vega, Veronica)

3. **Full Text:** Fidel de la Cruz Hernandez-Hernandez
   WoS: **Hernandez-Hernandez, FD** (de la Cruz Hernandez-Hernandez, Fidel)

4. **Full Text:** Ma. del Carmen A. González-Chávez
   WoS: **Gonzalez-Chavez, MDA** (Gonzalez-Chavez, Ma. del Carmen A.)

5. **Full Text:** Grácia-Divina de Fátima Silva
   WoS: **Silva, GDD** (de Fatima Silva, Gracia-Divina)
2. UNAM institutional addresses

a. Policy
   • Summary
   • Address File, Dictionary, WAAN

b. Examples
2a. Policy: Summary

**Main Organization**

the first part or most important part of the address. A hierarchy list is used to help determine the main org.

**Sub-Organizations**

remaining sections of the address:

EX: 1st Department of Medicine = Dept Med 1
EX: Department of Med II = Dept Med 2
EX: Second Department of Medicine = Dept Med 2
2a. Policy Summary (continued)

**Street Information (Reprint Add only)**

Street information includes street name, building number, POB, room number, etc.

**City/State/Country**

**Foreign Zone numbers**

Foreign Zone numbers with country codes are processed before the city name (EX: E-12345).

**EXAMPLE:**
Univ Nacl Autonoma Mexico, Dept MMC, Inst Invest Mat, Mexico City 04510, DF, Mexico
2a. Address File, Address Dictionary, WAAN

- Address File

We have entries for “Natl Autonomous Univ Mexico” & “Univ Nacl Autonoma Mexico” in Address DB both in Mexico City, DF, Zip code 04510, Mexico.

Also, there is one more entry for “Univ Nacl Autonoma Mexico, Cuernavaca, Morelos, 62191, Mexico”.

We don’t have any entry for Acronym “UNAM” in Address master because this acronym appears in many locations.

- WAAN

The WAAN preferred entry:
Universidad Nacional Autonoma de Mexico
2b. Examples

1.
Full Text: Instituto de Física, Universidad Nacional Autónoma de México, A.P. 20-364, 01000, México D.F., Mexico

WoS: Univ Nacl Autonoma Mexico, Inst Fis, Mexico City 01000, DF, Mexico

Organization-Enhanced Name(s)
Universidad Nacional Autonoma de Mexico

2.
Full Text: Student of the Master Program in Medical and Dental Science, Public Health National Autonomous University of Mexico

WoS: Publ Hlth Natl Autonomous Univ Mexico, Master Program Med & Dent Sci, Mexico City, DF, Mexico

Organization-Enhanced Name(s)
Universidad Nacional Autonoma de Mexico

3.
Full Text: Centro de Geociencias—UNAM, Campus Juriquilla, Queretaro 76230, Mexico

WoS: UNAM, Ctr Geociencias, Campus Juriquilla, Queretaro 76230, Mexico.

Organization-Enhanced Name(s)
Universidad Nacional Autonoma de Mexico