What If We Reconsidered How We Ask Scientists to Share Their Data: When FAIR Meets Crowd-Sourcing and Nudge Theory

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November 28, 2022

Abstract

Journals, funding agencies, and researchers are more frequently expecting manuscripts to include links to shared research data. Effective data sharing requires that data be findable, accessible, interoperable, and reusable (FAIR), and is thus predicated on establishing a common understanding on how to communicate: data exchange standards, common data formats, controlled vocabularies, and a communal data repository. When conducting research, we still communicate in shorthand that is effective for everyone on the team who understands our context, but is lost when data is shared in the absence of that context. "Water temperature" means only one thing to my research team, yet can mean dozens of things outside of that context. Data sharing is thus an exercise in sharing not just the data, which is typically readily available, but also the context of that data, which requires additional effort. This effort is one of the barriers to sharing data. We'll describe an alternative model for accepting data to a repository: the immediate ingestion of data regardless of its metadata quality, then behavioural nudges and crowd-sourcing features that ensure this data meets appropriate standards prior to publication. We'll show a work-in-progress prototype software tool that supports this alternative model, capable of accepting and standardizing a research data set to use CF conventions and ISO 8601 dates.

What If We Reconsidered How We Ask Scientists to Share Their Data: FAIR, Crowd-Sourcing, and Nudge Theory

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INTRO

Sharing research data openly is good for everyone, but it can be an annoying process. Too often it combines the low-level detail of metadata standards with our universal love for entering data into multi-page web forms. We propose to invert the current data submission process: get the data first, and then use crowd-sourcing and persuasive technology, plus easy-to-use tools, to help researchers document it properly.
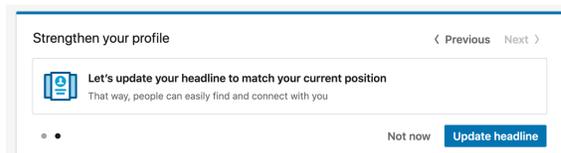
OUR APPROACH

1. Upload your data file (web form, or use right-click "Send to…" feature on desktop).
2. Tool support makes it easy to:
   - Map your own variable names to vocabularies (e.g. CF conventions)
   - Add metadata blocks (e.g. "add all the required Darwin Core fields")
3. The submitter completes micro-tasks, each with a matching motivation:
   - Add a written description to show up in more search results!
   - Add 2 more fields to be issued a DOI!
   - Add your other authors so you can submit to Figshare!
4. All tasks can be crowd-sourced, with owner verification before publication.
5. Learn over time how researcher-supplied variables map to standard vocabularies, and automatically convert.
6. Release tool as FOSS to replace current data repository submission systems.

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Let's update your headline to match your current position
That way, people can easily find and connect with you

Not now   **Update headline**

Social media sites are brilliant at gently extracting your data.

We can **reduce barriers** to **sharing data** by improving the **user experience** of standardizing data, leveraging **crowd-sourcing** and gentle **nudges**.
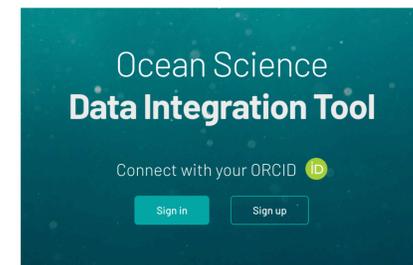
Take a picture to **visit the prototype.**
It is under active development so might break at any time! ☺

Ocean Science
Data Integration Tool
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Community Results

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