Digital Analysis of Chant Transmission

What is the Digital Analysis of Chant Transmission?

The Digital Analysis of Chant Transmission (DACT) is a partnership project at Dalhousie University in Halifax, Nova Scotia, Canada, funded by the Canadian Social Sciences and Humanities Research Council (SSHRC 895-2023-1002). Through an international network of 65+ partner institutions, co-investigators, and collaborators, DACT is building digital, intellectual, and governance infrastructure to facilitate the analysis of the transmission of plainchant throughout the world, using computational tools in tandem with existing online chant databases and digital repositories of chant manuscripts. DACT aims to extend the study of plainchant from localized research focused mostly on Europe and the Middle Ages to global research tracing the dissemination of manuscripts, fragments, and the sung liturgy in both oral and written traditions to other continents through to the modern era.

DACT has as its cornerstone the Cantus Database, an online, searchable dataset devoted to plainchant texts and melodies drawn from hundreds of medieval, early modern and later liturgical manuscripts, fragments, and printed books. Its complementary catalogue, Cantus Index, is also under the authority of DACT, and together, these two databases provide a significant wealth of information about plainchant and its sources.

Managing the chant data retrieved from medieval Latin manuscripts, printed books, and fragments as well as from later sources in other parts of the world that stem from the European liturgical tradition—that is, over a thousand years of music worldwide—is a major undertaking. DACT has assembled experts in a variety of fields, including musicologists, historians, librarians, and performers, to collect and manage data from archival materials related to the dissemination of chant around the world, and to facilitate the analysis of chant repertories digitally with new computational resources in order to better understand how medieval chant in both its oral and written forms travelled and adapted over time and place. The DACT partner institutions, co-investigators and collaborators represent 13 countries in North America, Europe,

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Australia, and Asia. DACT researchers and external experts populate 26 Teams that are organized into three axes, each covering an important aspect of digital humanities and the study of chant: Infrastructure, Metadata & Analysis, and Artefacts & Collections. In the Infrastructure axis, programmers work on technical issues, develop and redevelop backend software and web applications, and consult with DACT musicologists, librarians, and other personnel. Researchers in the Metadata & Analysis axis oversee protocol development, ontologies and controlled vocabularies, as well as data-mining and other analytical applications. The Artefacts & Collections axis is focused on the cataloguing and indexing of sources and repertories of chant that were previously not included in existing databases but are part of the story of the global transmission of chant. Some of these lesser-known sources include European manuscripts or fragments containing Latin chant that were adapted under religious reforms or for use after the Reformation, those that travelled around the world as a result of the international trade and missionary activity that accompanied European colonisation, and living traditions of chant in vernacular languages such as Chinese or the Indigenous languages of North America.

In addition to the DACT Scientific Advisory Council which oversees the partnership project, DACT has established a number of governing bodies to advance collaboration among musicological and plainchant projects which have operated independently, sometimes for years, in an under-regulated digital research environment. These advisory and governing boards include: 1) the Cantus Governing Council, which oversees the management of the Cantus Database and Cantus Index; 2) the Cantus Scientific Committee, a select group of experts that tackles challenges of interpretation and/or the details of indexing protocols related to Cantus Database and Cantus Index chant records; and 3) the Cantus Index Directors' Council, where the directors of all databases and research websites networked in the Cantus Index hub meet to discuss relevant shared issues in data collection, maintenance, and future development.

DACT's public and scholarly engagement is manifested in a number of initiatives, including:

- DACT's project website (https://dact-chant.ca/) where personnel, activities, and a description of the project can be found;

- presentations at international conferences, and subsequent publications regarding the DACT project, the Cantus Database, and the Cantus Index;
- project meetings (online and in-person), including networking with other digital projects, such as LinkedMusic at McGill University in Montréal, and the Portuguese Early Music Database at NOVA University, Lisbon;
- an online (and sometimes in-person) workshop series for DACT researchers and guests on such topics as protocol development in indexing chant manuscripts and printed materials, managing records for specific contents in databases and online resources devoted to chant, analysis tools and data-mining, data management plans, the application of FAIR principles in digital chant projects, and more (https://dact-chant.ca/workshops.html);
- maintenance of the Cantus Database (https://cantusdatabase.org/);
- maintenance of the Cantus Index (https://cantusindex.org/);
- a purpose-built phone app with links to DACT-related projects and DACT SoundWalks (https://situate.io/dact/).

One of DACT's end goals is to increase the prospect of sustainability for all digital plainchant projects. The creation, organization, and maintenance of standardized metadata and shared schemata will ensure that these datasets operate within a recognized global research infrastructure, and that data repositories and discovery services will be compatible with the datasets long into the future. The DACT project connects and guides researchers worldwide, and through networking and a collaborative approach, enables interoperability and thus, increased sustainability, among digital plainchant databases and related projects.

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