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Into the Biomatrix: Medical Illustration and the Animation of Anatomy in Grant's Atlas of Anatomy.

The onset of World War

Two instigated a temporary crisis in the North American medical community, particularly in Universities and teaching hospitals. Until the Second World War every Faculty of Medicine in North America was dependent on either Werner Spalteholz's or Johannes Sobotta's *Hand Atlas of Human Anatomy*. While printed in North America in English these multivolume textbooks were assembled by European anatomists, drawn by European illustrators and published and financed by two German publishing houses (Williams, 1988; 1999). During the war the supply of these textbooks virtually disappeared. In 1941 Dr. J.C.B. Grant, an anatomist working at the University of Toronto, approached the Philadelphia publisher Williams and Wilkins to initiate an indigenously produced anatomical atlas. Grant's proposal promised that the atlas would contain a set of new images to illustrate his pedagogy of dissection. The drawings would be produced at the University of Toronto under Grant's supervision by a highly skilled female medical illustrator, Dorothy Chubb, who was employed by the Department of Medical Art Service (Wilson-Pauwels; Gilbert, 1995). Chubb was a student of the famed German medical illustrator, Max Brödel, who founded the first school of medical illustration in North America in 1911 at Johns Hopkins University.

I am leading a three-year interdisciplinary project to study the breathtaking set of original anatomical illustrations that were included in J.C.B. Grant's pathbreaking 1943 textbook *An Atlas of Anatomy*, later titled *Grant's Atlas of Anatomy*. *Grant's An Atlas of Anatomy*, now in its 12th edition (Agur, 2008). Our research team has been given access to the original anatomical illustrations created for this textbook. Housed at the University of Toronto's Program in Biomedical Communication, the collection consists of over 920 original drawings produced between for this Atlas, as well as supplementary documentation such as letters, monographs, articles and other materials relevant to its production.

The illustrations produced for Grant's Atlas significantly transformed the teaching of anatomy. He used a different method to depict the anatomical process emphasizing the way a surgeon would enter into the body in the sequencing of the drawings. He portrayed the body as series of regions rather than a system, and tried to show the relations between different anatomical structures to teach anatomy. Grant forced his illustrators to use photographic tracings to create more "objective" renderings of the body. His Atlas contained significantly more visuals, emphasizing illustration over textual descriptions. Grant also adopted English, rather than Latin, as the language of the caption, and finally Grant's was published as a single text, rather than two separate volumes, rendering it 'portable.'

The collection furnishes an exemplary case study to reflect upon the connections between art, medicine and commerce; transformations in the production of the printed textbook; innovations in techniques of medical illustration with the introduction of new technologies (such as photography); debates over copyright

and the 're-purposing of visual material'; the gendering of medical knowledge and the legacy of medical illustration within medicine; the specific role of the hand-drawn illustration in "picturing" or imaging the body over more mechanical or digital means of reproduction; and finally, a whole series of debates on archiving, preservation and digital access to the original works.

An integral part of our work with these archival materials, in addition to our scholarly research, involves digitally indexing this original corpus of illustrations to create a fully searchable web-based research tool and creating a framework of "best practices" that suits the particularity of these images. This research tool will provide ongoing intellectual and physical access to this historical material for contemporary students of medical illustration and is intended to spur further scholarly inquiry.