Medical illustration is a centuries-old field of practice best-known for its contribution to anatomical and scientific atlases. In North America the first school was established at Johns Hopkins in 1911, and the professional association, the Association of Medical Illustrators, had its first annual meeting in 1946. Today medical illustrators work in a variety of areas: textbook, courtroom, educational, museum exhibits, health communication websites, and commercial contexts. This paper focuses on the work of these illustrators in science marketing for the pharmaceutical industry.

My initial question was, How do professional medical illustrators discuss quality, honesty and beauty in their work and with their clients, and how might these perspectives influence their practices as a form of public communication? Findings quickly revealed that as a descriptive term, “accuracy” was more often used than either of the terms “quality” and “honesty.”

Accuracy – the quality or state of being correct or precise – was also intimately linked to beauty. These terms embodied medical illustrators’ descriptions of the richness in their visual culture across academic and commercial contexts.

In practice, medical illustrators ally themselves with science and contemporary science data, distancing themselves from commercial marketing such as lifestyle images. Illustrators emphasise the Mertonian norms of science and the anatomic norms of beauty and accuracy even within what might be interpreted as the compromised practices of advertising.

Methods

Twenty-eight members and past members of the Association of Medical Illustrators who had worked on pharmaceutical contracts between the 1950s and 2000s agreed to participate in semi-structured interviews. The illustrators’ responses were transcribed verbatim. Qualitative research software (NVivo 9) was used to facilitate the process of iterative comparison and inductive coding techniques to identify themes and insights.

Findings

Unprompted, medical illustrators used the terms “accuracy” and “beauty” to describe what they strove for across their academic and commercial work. They spoke of accuracy in a variety of ways: 1) as best vetted by those with science expertise; 2) as dependent on accurate data; 3) as an inspiration to visual work; and 4) as intrinsic to beauty.

1) Accuracy was described as best reviewed by those with science expertise. Medical illustrators requested “experts” and “scientists” to scrutinise or collaborate on visual processes and results:

“... A lot of times I’ll write a script and there will always be with every animation we do there is always an expert on hand.” (Wooster)
“Our artist ... he constructed the structure here, and this is actually based on proteins databank data, and we actually conferred with the scientists, who solved this crystal structure.” (Georgia)

Even in commercial contexts, medical illustrators presumed collaboration with practitioners in science and medicine. Image descriptions of the supporting science in turn supported the products sold—these science stories also required accurate data.

2) The accuracy of the images was dependent on authentic digital data and support from scientific literature. Péro explains a client scenario where copious data was rendered operational:

“... in this case the challenge was to, first of all gather the requisite data, the accurate data, from the literature, to decide, there are way too many pathways and proteins in human cancer to claim to put them all on one poster ... It’s ridiculous the complexity is beyond belief ... Thousands, thousands and thousands of proteins, and hundreds of pathways. So the question was, can we identify what are, let’s say, the key 15 pathways that account for the majority of mutations and cancer types? Well that was task number 1. Task number 2 is that within each one of these pathways there are many, many proteins, which are the key nodes of communication. How do I identify those? And that was also hard.” (Péro)

The care taken to translate an appropriate story to the intended audiences as based on complex data meant data had to be depicted in ways potentially not seen or attempted before. Science communication became a means to “change the visual vocabulary” of how molecular science was represented:

“... one of the things that we looked for was a means to use real data, in this case using data that was being collected by the protein databank, to be able to depict things differently.” (Nell)

By “differently” Nell is contrasting previous image work not based on science data, with the new “more accurate” visualizations that are accessible. Nell continues:

“And so one of the things that was an argument I was always having ... was [why make] ... this stuff so dumbed down when you could do it in a way that’s not only more elegant, but also describes the science more accurately.” (Nell)

For Nell and Péro, achieving a story as based on complex research and accurate data was the inspiration needed to communicate science itself.

3) Accuracy was an inspiration to communicate science. Illustrators felt “strongly” that their work be connected to a professional science context:

“Yeah if it’s not accurate don’t talk to me and I actually feel very strongly about that.” (Storm)

Throughout the interviews, an emotional adherence to ideals of accuracy was apparent. The focus on striving to presented current and ongoing science to a variety of audiences not only made science more “accurate” but acknowledged the intelligence of those audiences. Susan continues:

“I started talking and said ‘you know we probably need to give for more detail, in
order to cover the territory that they are questioning.’ So the project evolved into something a little more detailed, a little bit more complicated, than what they had originally asked for, but in the end the client, the agency and the client, were both satisfied.” (Susan)

These previous descriptions of collaborations with traditionally-defined science experts, using actual science data and thinking of audiences as capable of understanding complex science, were also connected to interpretations of beauty.

4) Without accuracy, images created by illustrators were not considered beautiful:

“To have inaccuracies it doesn’t honour the beauty of the biology, pharmacology and the physiology and the disease state... It’s not just physical beauty but it’s the intelligence beauty of how the body works and it’s you know it’s sometimes I think that’s the magic of what I do. That you reveal the beauty, not only the beauty of the molecular side of biology and the body but the beauty of how clever medical systems are how clever you know the whole organism is as a whole and I mean even in signal transaction the way in which a cell manages its energy. ... I mean it’s magic and it’s not just the beauty of it, it’s intellectual magic of the science and inaccuracies for me are unacceptable.” (Storm)

“My philosophy is that I want to show the science as accurately as possible. But the aesthetics are so critically important to everything I do.” (Aude)

“... the illustrators motivation is often to do something informative, accurate, hopefully beautiful.” (Hank)

As seen in these quotations, illustrators’ perceptions of beauty were compromised by work they deemed scientifically inaccurate. The medical illustration community, in part responsible for creating the visual culture of science for professionals, had strong views about the roles of images. Images embodied the aesthetic of medical illustrators, was based on the “intellectual magic of science” as well as the “beauty of how clever medical systems are.” These interests were those used across illustrative work for commercial contexts.

Summary

Selling the science behind pharmaceutical products is a valuable strategy – it has been used in marketing contexts with physicians for over 60 years. Medical illustrators acknowledge the complexity of scientific advertising, and as a professional community seek out and guard the rigour of science and medicine through close collaborations with those specializing in these areas. While working on commercial topics, by allying themselves with science and contemporary science data, illustrators distance themselves from the commercial marketing environment while at the same time still working for it, putting emphasis on a vision of science as defined by scientific and medical research rather than commercial products. Primarily interested in representing an accurate and beautiful material world, and appreciating the abilities and interests of all audiences, medical illustrators protect and promote their centuries-old collaboration of scientist-artist even within commercial contexts.
References

i Oxford American Dictionaries.

ii Robert K. Merton worked within the sociology of science to create the Mertonian norms, or, the goals and methods of science: Communicalism, Universalism and Organized Skepticism (CUDOS).
