John Liebeskind describes research on the periqueductal gray matter (PAG)

Oral History Interview with John C. Liebeskind, 17-19 August 1995 (Ms. Coll. no. 127.21), John C. Liebeskind History of Pain Collection, History & Special Collections Division, Louise M. Darling Biomedical Library, University of California, Los Angeles

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JOHN LIEBESKIND: So there was a concept of "don't overplan; get going on this thing." There was also the concept that this experiment was much too complicated and really wasn't worth doing, and we never did it. We never did that experiment.

MARCIA MELDRUM: Oh!

LIEBESKIND: It was too fancy. And we started doing some other stuff, and one thing led to another, and before very long we hooked into, somewhat serendipitously, an area of the brain about which relatively little was known -- there were a few studies on it but not much -- called the periaqueductal gray matter. And that became the structure of [he laughs] my laboratory. I mean, we worked on that --

MELDRUM: Liebeskind territory. [she laughs]

LIEBESKIND: That became kind of Liebeskind territory, as it were. We had been going along, the first study that we ever did was kind of a rinky-dink little study; didn't come up with very much and was something that was kind of small effect. And then we did the same thing, but we did it in the periaqueductal gray matter instead of this other brain area, and wham, we got this big results, sore-thumb data. No statistics need apply [he laughs]; no statistics--no statisticians need apply. And that was the kind of a thing; I mean, that's what we wanted -- big data, you know.

MELDRUM: Right. Make an impact.

LIEBESKIND: Yeah. Well, make an impact; just the results would be really clear. And so we kind of picked up on this periaqueductal gray matter and stuck with it for a while, and we ended up doing work on [he laughs] a number of other brain areas, et cetera; we didn't necessarily stick with it for very long. But, you know, for a number of years we did, and everything we did with that area of the brain has worked out very well and very clearly. And we decided that we would use it as kind of a model area of the brain after we do the pain in some manner, and kind of address it with a number of different techniques from different areas looking at this part of the brain and its relation to pain.

And so we did lesion studies; we recorded the electrical activity from this area of the brain; we electrically stimulated this area of the brain; and these were sort of the three major techniques that people used in behavioral neuroscience and physiological psychology. You ripped out one of the gears out of the watch and made a lesion and [you'd] see which part of the watch would stop working [he laughs]; what stopped working? You would record the electrical activity; you would listen to the workings of it, or you would electrically stimulate it, for which you would have to be in that area. So --

MELDRUM: But it was fairly clear that some kind of pain reaction occurred in this particular area of the brain?

LIEBESKIND: Well, that was known before we got into it. We didn't -- we were not the first to say that this area of the brain had something to do with pain. But we pursued that story in an integrated way.

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