SFEMG as a Measure of NMT

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Disclosure

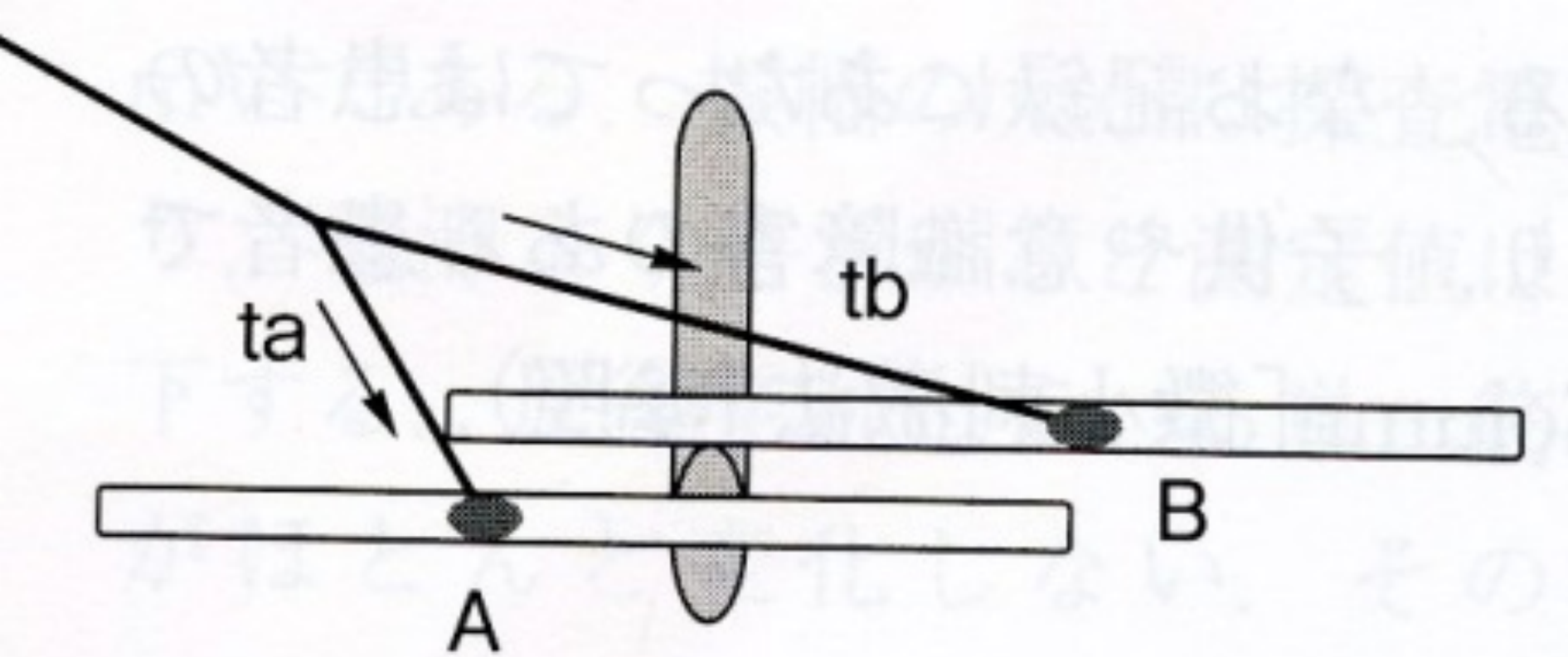
None

LEARNING OBJECTIVES

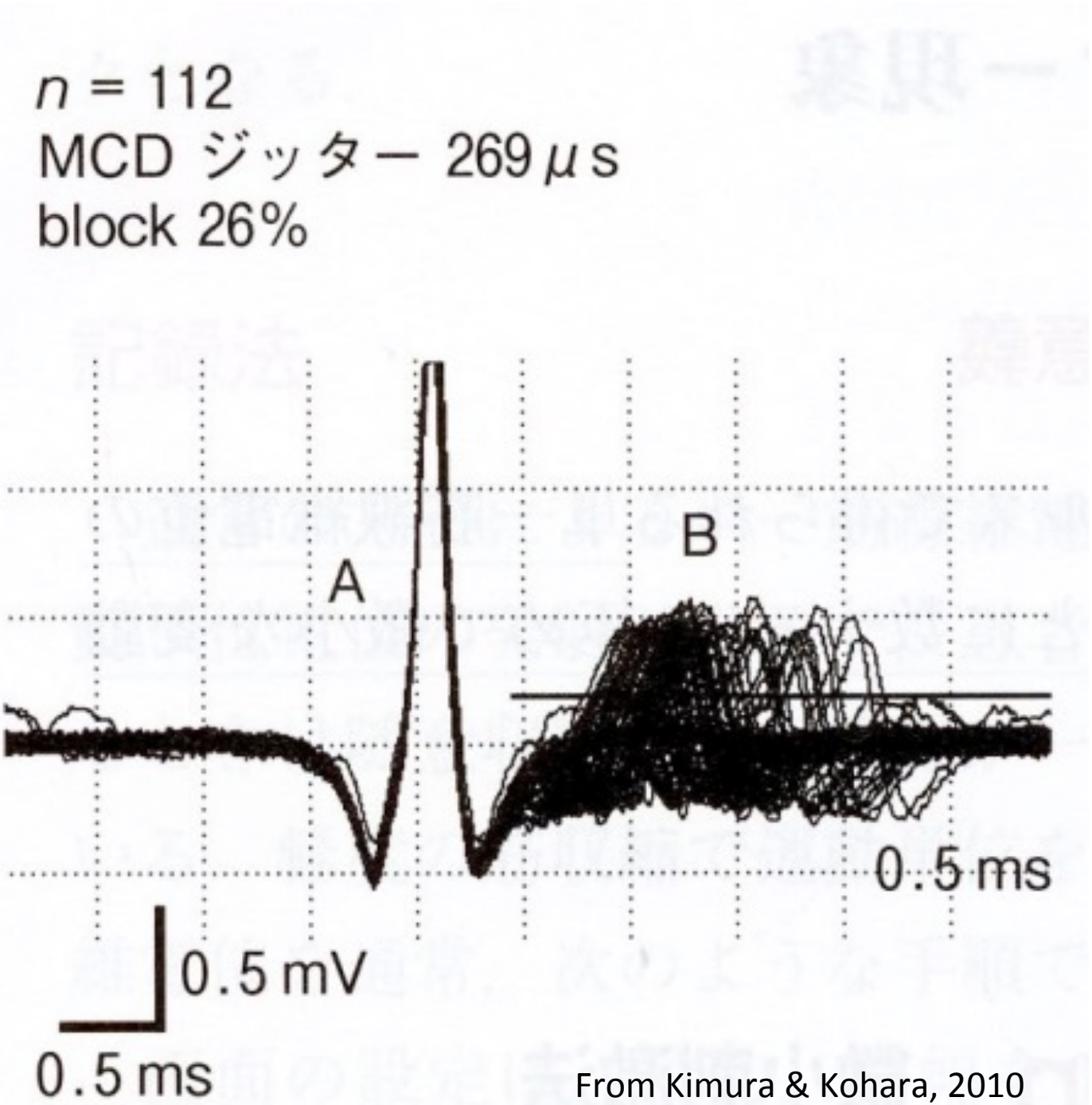
1. Understand physiology and pathophysiology of neuromuscular transmission.
2. Acquire the knowledge to identify normal and abnormal jitter as well as blocking.
3. Appreciate the technical differences between the voluntary and stimulated SFEMG.
4. Learn how to conduct both types of studies in assessing diseases of neuromuscular junction.
5. Recognize the value and limitations of SFEMG as a physiologic study in the clinical context.

KEY MESSAGES

1. Single fiber needles with a small lead off surface record from individual muscle fibers.
2. Concentric needles also work, if used with a high pass filter to attenuate distant activities.
3. Stimulated SFEMG alleviates the need of a paired discharge for jitter measurements.
4. Abnormal jitter and blocking, though non-specific, implicates the neuromuscular junction.
5. SFEMG, like other electrodiagnosis, constitutes an extension of the clinical examination.



From Kimura & Kohara, 2010



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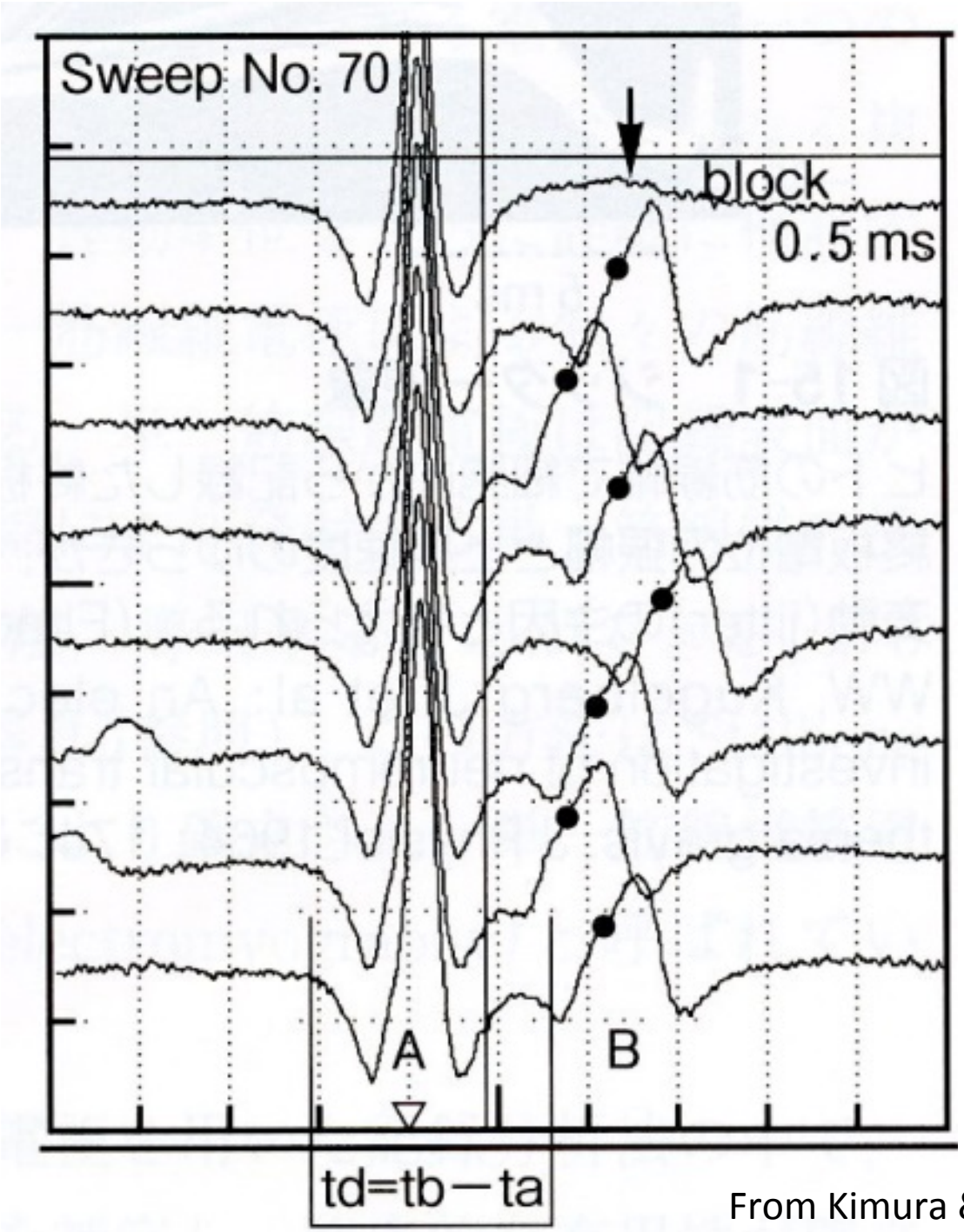

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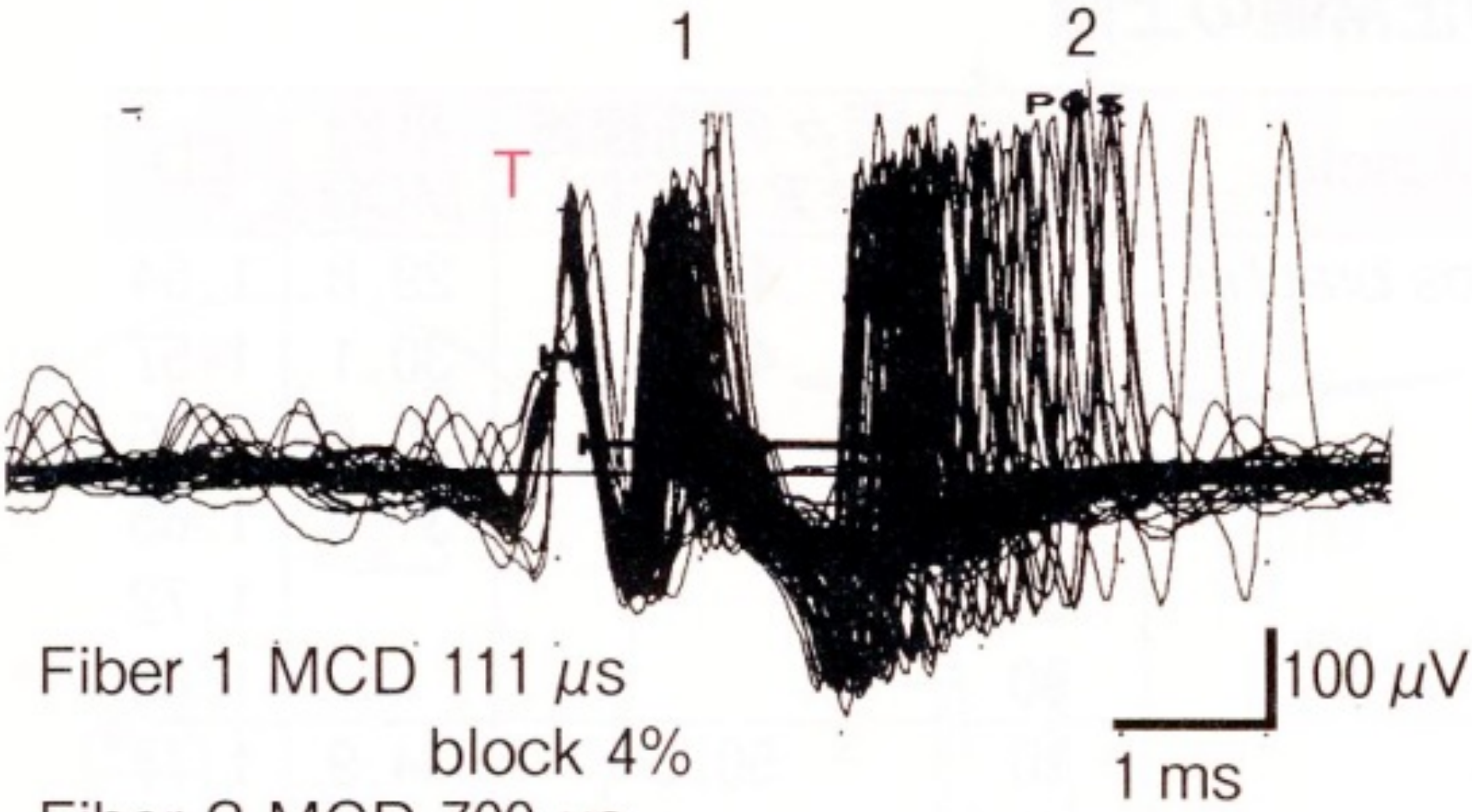

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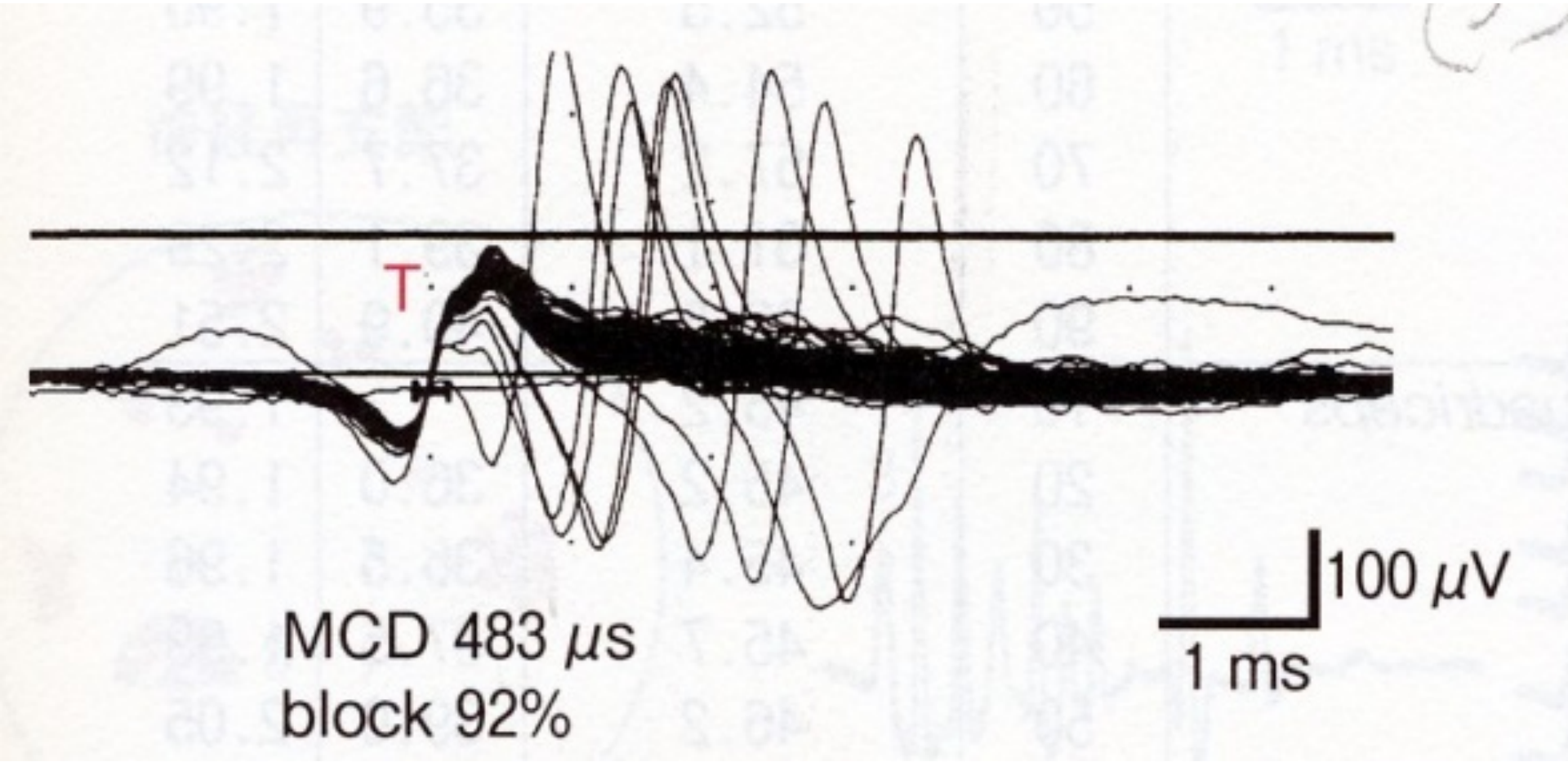

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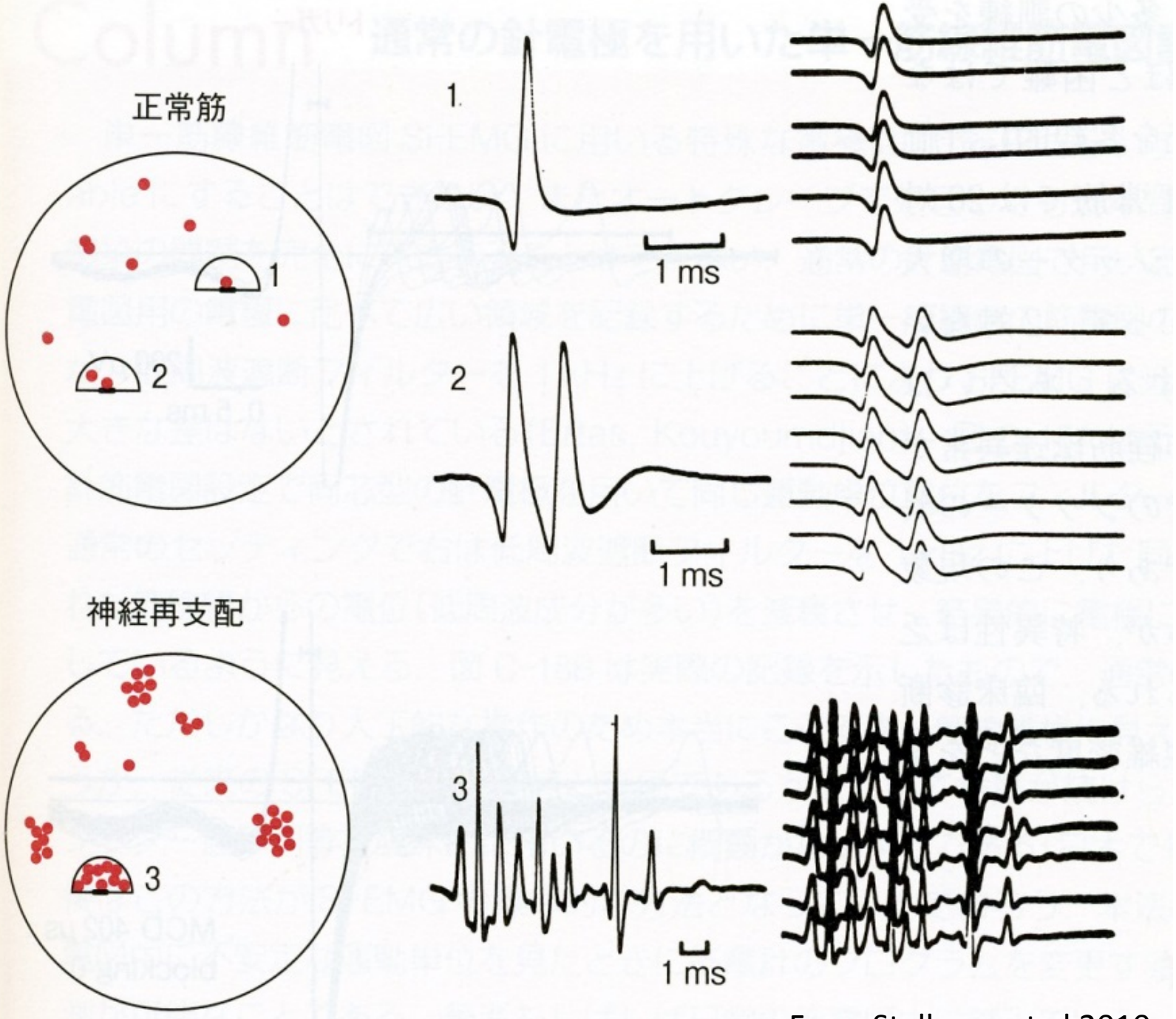
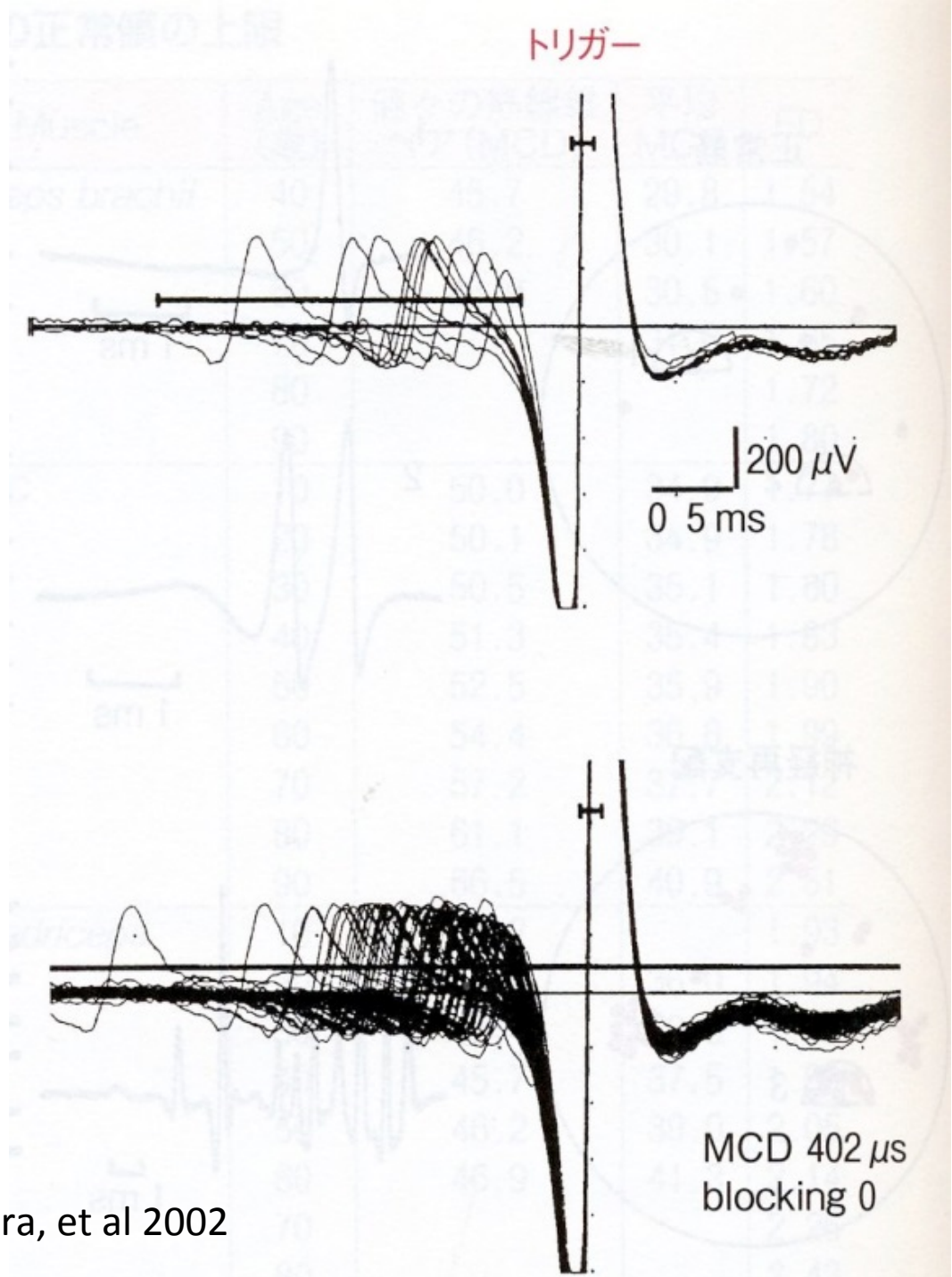
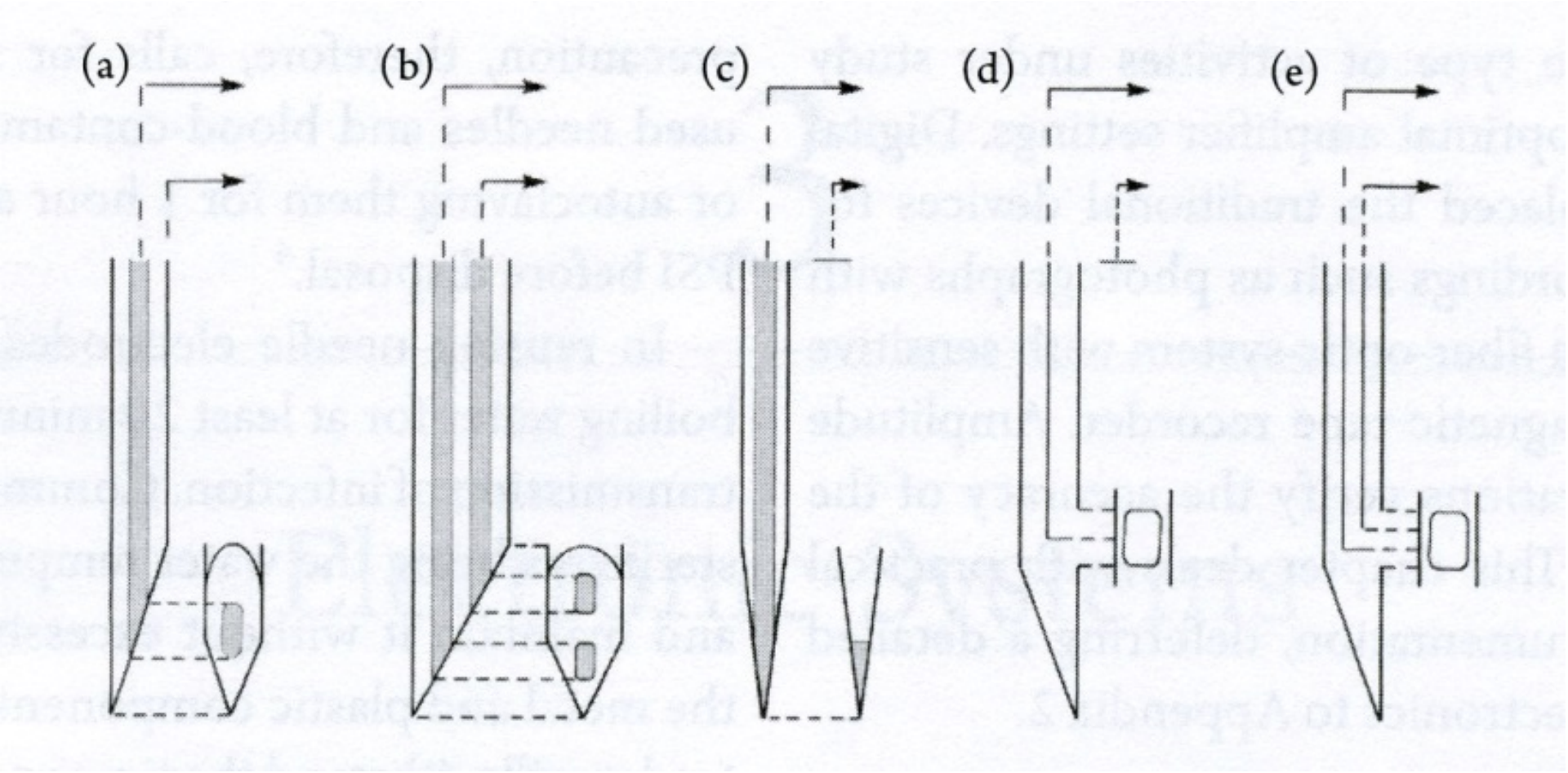


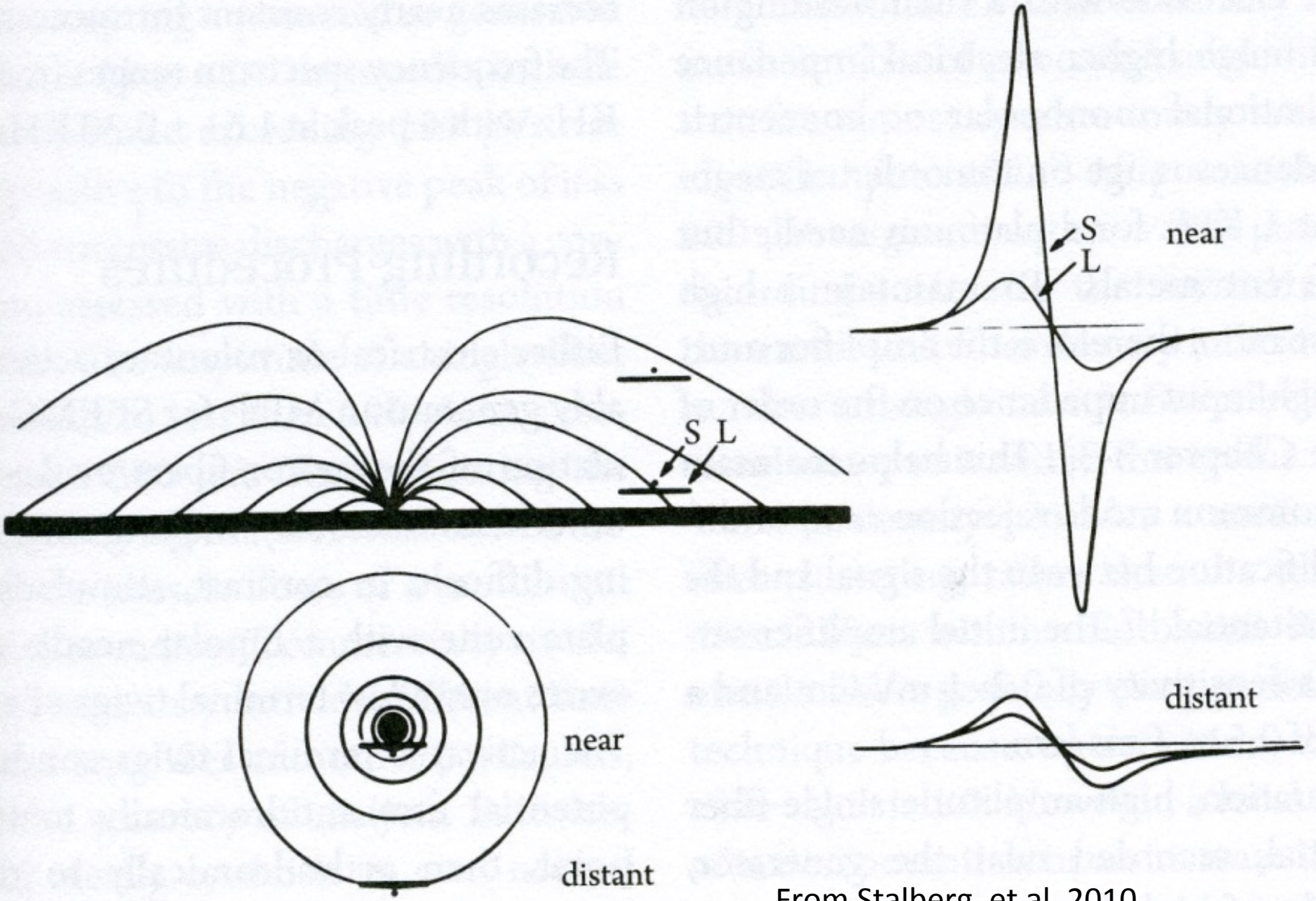
From Stalberg ,et al 2010



From Kohara, et al 2002



Modified from Stalberg, et al, 2010



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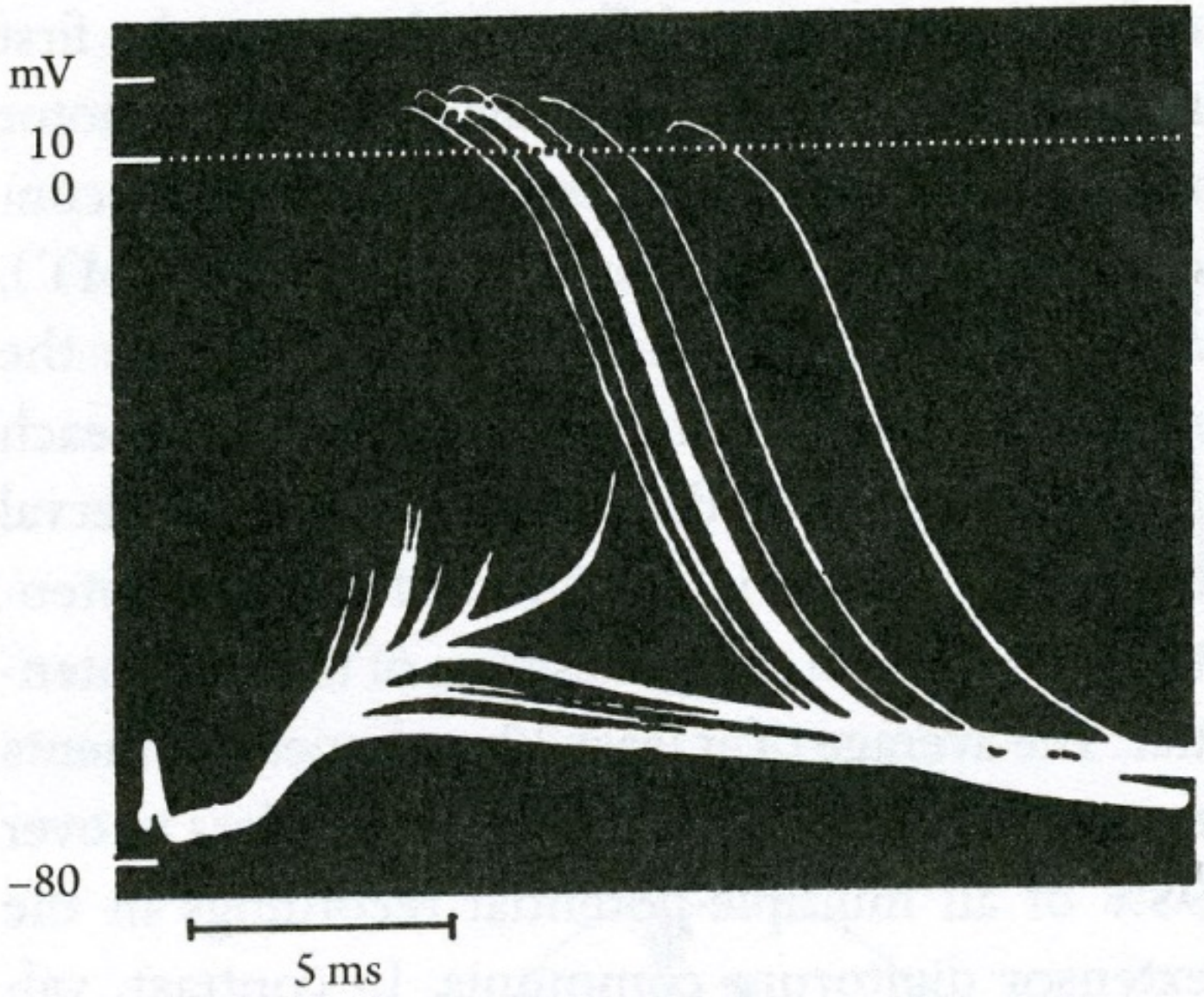
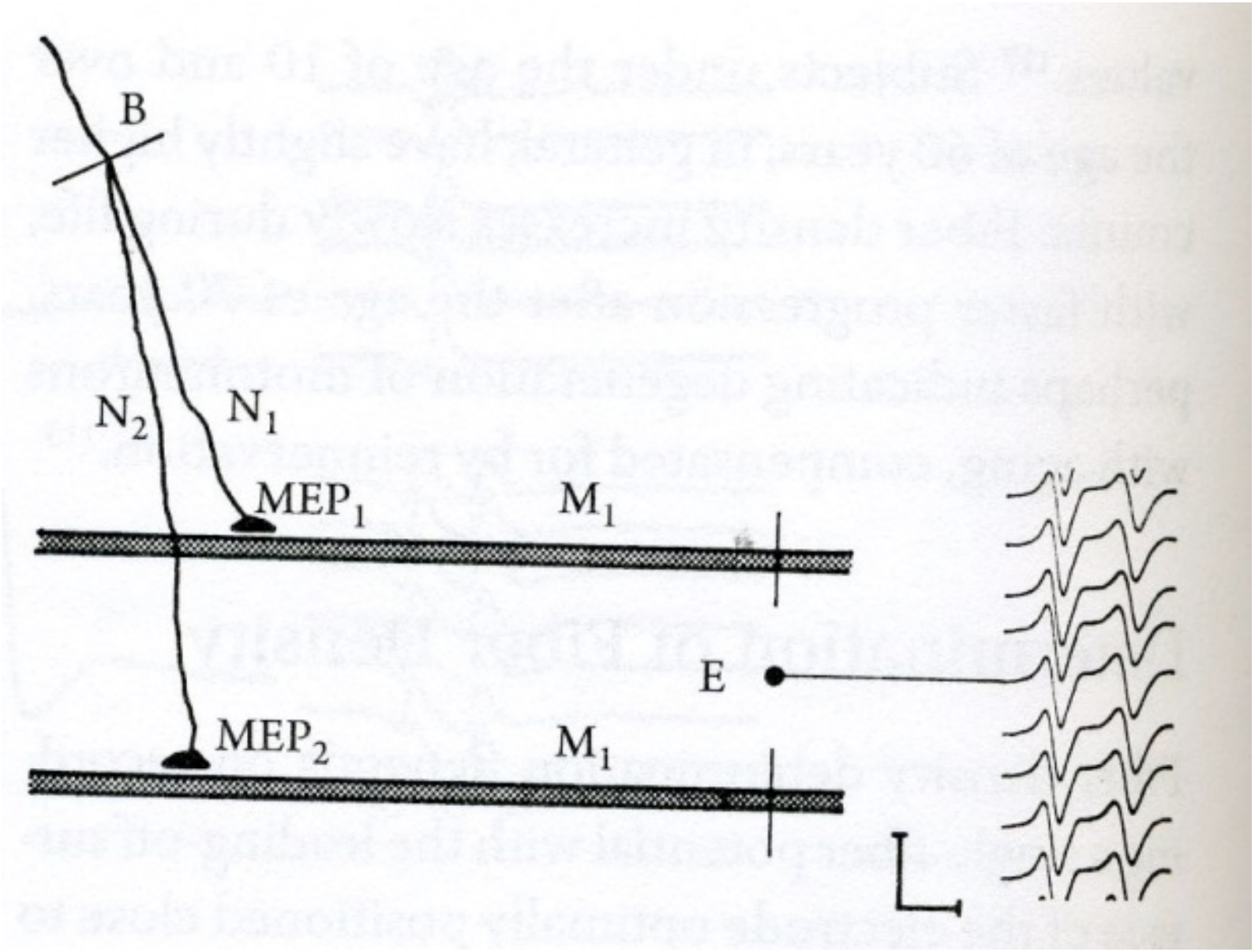
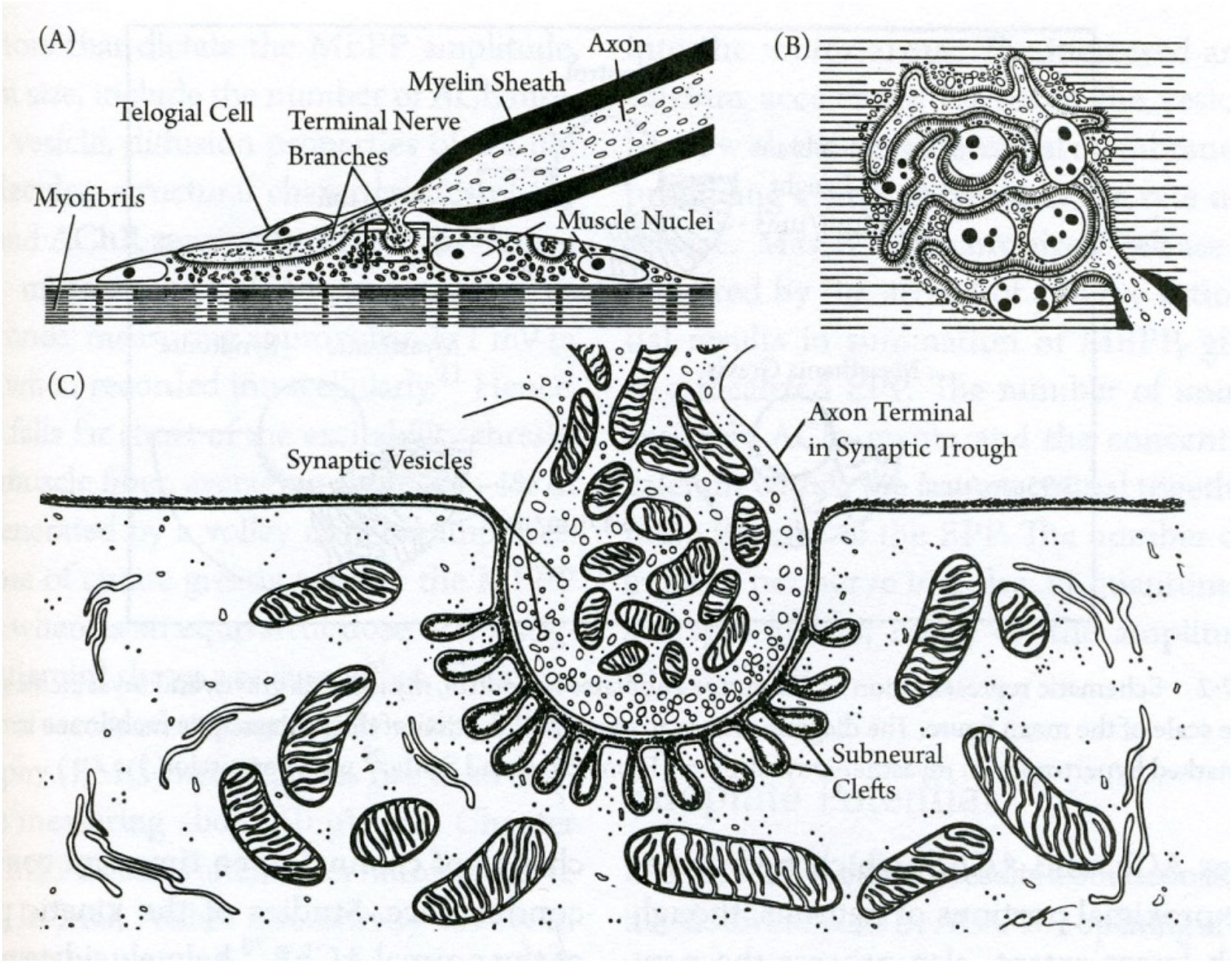


From Elmquist, et al, 1964



From Dahlback, et al, 1970



From Bloom & Fawcett, 1975