

**OUR NOTIONS OF
NUMBER
AND SPACE**

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Our Notions of Number and Space by Herbert Nichols & William E. Parsons

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HERBERT NICHOLS & WILLIAM E. PARSONS

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INTRODUCTION.

My thesis I briefly state as follows: Our brain habits, with the modes of thought and of judgment dependent thereon, are morphological resultants of definite past experiences: our experiences, and those of our ancestors. Each limited experience does its share toward fixing a limited habit. The experiences most common to our various regions of skin, differ widely one from another; those of the tongue, from those of the fingers; those of the fingers, from those of the abdomen, and so on. Our habits of judgment, based on these several avenues of experience, ought therefore, when compared with each other, to betray permanent characteristics running parallel with the local differences of anatomy, of function, and of experience, which give rise to them, and in which they are rooted.

Investigation proves this to be the case. It shows that our judgments of the same outer facts, such as of number and of distance, vary greatly when mediated by different tactual regions. And what is of greater importance to the science of psychology, these variations in judgment bear distinguishing ear-marks of the

kinds of experience out of which, and by reason of which through life, they have slowly risen.

It is our purpose to study these. Through comparison of the different constants and variables in certain judgments, which we shall subject to experimental proof and analysis, we aim to discover somewhat regarding the fundamental laws governing the past genesis and the present formation of our judgments, and of the movements of mental processes in general.

As the last words of this Introduction, I wish to thank Professor Münsterberg for permitting one of his students to assist me with this research during an entire year. And with deep appreciation, and pleasant recollections, I record the patient labor and able service which Mr. Parsons has continually contributed to the work.

OUR NOTIONS OF NUMBER AND SPACE.

EXPERIMENTS A, B, C, D, E, F, G, and H.

THESE several experiments form a set. We shall first present the method, and the bare results of each one separately, then study them collectively.

EXPERIMENT A.

WITH PINS SET IN A STRAIGHT LINE.

Apparatus.— Heavy cardboard was cut in strips 7 or 8 mm. narrower than the pins to be used. The pins were the familiar household article; they were run through the whole width of the strip, which held them firmly, their ends projecting like the teeth of a comb.

Thirty-six cards were thus prepared, or 9 sets of 4 cards each. The "9 sets" corresponded to the 9 distances experimented with; and by "distance" we shall always denote the distance between the end pins of the line of pins. The 9 distances embraced the even and the half cmm. from 1 to 5 inclusive.

The 4 cards of each "distance set" were fitted with 2, 3, 4, and 5 pins respectively. These pins (when