Non-linear behavior in paper folding
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Try this simple experiment to explore non-linear systems behavior:

i) Take a normal piece of typing or notebook paper and fold it in half; call this "fold 1". Write down a word to describe how difficult it was to make the fold (e.g. "easy" or "hard" or "impossible").

ii) Fold the sheet from (i) in half again (call this "fold 2"); write a word to describe how difficult it was to make the fold, using a formulation that makes simple a comparison with your "how difficult" answer to (i)... e.g. "not much more difficult than Fold 1." Repeat for folds 3, 4, 5 ... and as many folds as you can make.

iv) With each step in this process, you added just one fold; did the degree of difficulty increase linearly with each fold (i.e. the difference in difficulty between fold 1 and fold 2 was the same as the difference in difficulty between fold 6 and 7) or was it non-linear (i.e. did the degree of difficulty of adding one fold increase more between folds 6 and 7 than it had increased between 1 and 2?).

v) Explain your result. In crafting your explanation, consider whether your conclusion would be different if you had used a bigger sheet of paper. It may help to compare your result with the single sheet of typing paper to the experience of a Myth-Buster group trying the same experiment with a foot-ball-field sized tarp: https://youtu.be/65Qzc3_NtGs?si=bIaHy4FsfrAnSyzo (4 min)