## **Tension in Puzzles**

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While tension is generally understood to be an important design feature for games, its exact meaning in this context remains poorly defined. This paper explores the meaning of tension in games and, by extension, in solitaire puzzles. A simple classification scheme for puzzles is presented to clarify the discussion.

## 1 Introduction

T ension is one of those key qualities that most designers know is important in a game, but which has no precise definition and can mean different things to different people. Tension is a familiar concept that plays a regular part in many aspects of our daily lives, but has a specific meaning in the context of games. This article aims to narrow down exactly what tension means in this context, to define it in a more concrete and measurable – if not formal – way, and to extend this concept to the notion of tension in puzzles.

## 2 Tension in Games

A lot of designers talk about tension and its importance for games, but I have not yet seen a precise definition of this term in this context. Authors seem to assume that it is a universal concept that the reader will understand, and which does not require further elaboration.

In his classic article 'What Makes a Game Good?' [1], veteran board game designer Wolfgang Kramer lists tension as one of the key factors in designing good games. While he does not specifically define his understanding of tension, he introduces the notion of *tension curves* that chart tension of a game throughout its course, as shown in Figures 1 and 2.

Figure 1 shows two games in which tension increases linearly, but game 'A' is preferable as it begins with an initial level of tension. Figure 2 shows two games with multiple tension peaks, in which in which game 'A' is again preferable as it has fewer tension peaks and less pronounced tension, both of which make the game less chaotic.

Board game designer and publisher Néstor Romeral Andrés agrees that the tension curve for a game should start above zero, but points out that it should generally increase over its course on average, so that the game may start in a more relaxed mode but gets increasingly tense as it builds to a climax.<sup>1</sup>

Figure 1. Higher initial tension is better [1].



Figure 2. Fewer, shallower peaks are better [1].

There seems to be a consensus that a welldesigned game will follow cycles of crisis and relaxation, as local battles come to a head, are resolved, then build up to the next battle. Too much tension can be exhausting, while too little can be boring.

Lension Costues Time

<sup>&</sup>lt;sup>1</sup>Personal communication.