



Note

A matter of interpretation: Ambiguous contracts and liquidated damages [☆]



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ABSTRACT

We consider the optimality of liquidated damages contracts in a setting of contractual ambiguity and potential for disputes. We show that when parties are ambiguity averse enough, they will optimally choose liquidated damages contracts and sacrifice risk sharing opportunities.

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1. Introduction

Language is a matter of interpretation, and interpretations will differ. This fact is of fundamental importance in the construction of contracts, which are written or verbal agreements that the parties should act in particular ways under particular conditions. For any contract to be successfully implemented, the parties must agree on whether the relevant conditions apply. If parties may differ in their interpretation of the conditions that apply including the actions that are required, contracts will lead to disputes and, ultimately, litigation.

To avoid disputes, parties to a contract may seek to avoid terms likely to give rise to dispute, even when the resulting contract is incomplete, in the sense that opportunities for risk-sharing or productive cooperation are foregone. They might also include default clauses like liquidated damages in order to avoid further litigation fees incurred during *ex post* arguments over contractual terms.

In ordinary usage, we use the term ‘ambiguous’ to describe language that is open to multiple interpretations. The converse term ‘unambiguous’ is used when language is clear, and its meaning is agreed by all. Linguistic ambiguity may be either ‘syntactic’, when the same sequence of words may be interpreted in different ways, or ‘semantic’, when individual words have more than one meaning.

In formal decision theory, the term ‘ambiguity’ has a distinct technical meaning, applicable in the case when individual decision makers are unable to attach a unique probability distribution over the state space. We will refer to this as

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'probabilistic ambiguity'. In this paper our focus is on linguistic ambiguity. However, the preferences we employ to analyze the effects of linguistic ambiguity closely resemble those appearing in the probabilistic ambiguity literature (in particular, Gul and Pesendorfer, 2014).

We think of the ambiguity that parties to a contract face as arising from the potentially different interpretations of the contingencies specified in the contract. Grant et al. (2012a) examined the implications of contractual ambiguity in bargaining problems, and showed that ambiguity may lead to incomplete risk sharing.

In the present paper, we consider the contractual specification of damages that apply when one party is unable (or finds it undesirable) to fulfill their contractual obligations. In this context, we consider 'liquidated damages' contracts which specify a constant payment for the case of default. We show in Proposition 1 that liquidated damages contracts are *ex ante* efficient when the aversion to ambiguity is sufficiently high. It is natural to ask, however, whether the efficiency of liquidated damages contracts obtains in the standard state-space approach. We show in Proposition 2 that it does not.

Efficiency arguments for liquidated damages clauses appear in the economics literature as far back as Shavell (1980), and are elaborated in Che and Chung (1999). The efficiency is obtained by considering effects on the *ex ante* investment and default incentives of the parties. These papers model risk neutral parties in the absence of ambiguity, so there is no contractual rationale for risk sharing or ambiguity aversion. Chung (1991) pointed out the difficulty of simple contracts being efficient when both parties are risk averse.

In contrast we consider risk averse and ambiguity averse parties. Nevertheless, we find that liquidated damages contracts can be efficient when coupled with ambiguity aversion. The source for the efficiency of liquidated damages is their security against *ex post* disputes.

Our result is based on an intuition similar to that of Mukerji and Tallon (2001) who demonstrated how probabilistic ambiguity about the idiosyncratic risk associated with financial assets may deter agents from trading such assets. In their model, however, disagreement between ambiguity averse parties arises after the signing of a contract, but before the realization of the state of nature, as each party evaluates their position according to the least favorable of a set of priors. There, ambiguity is expressed in terms of multiple priors. In our model, disagreement arises after the realization of the state of nature, when the parties are in dispute over what action is required by the contract. Here, ambiguity is expressed in terms of multiple interpretations. Given the way we formalize the linguistic ambiguity in our model, however, *mathematically* the mechanisms in both papers operate quite similarly with ambiguity inhibiting each party's willingness to contract or to adopt a contract with incomplete risk sharing.

Motivations for liquidated damages that are more in line with our approach appear in the legal literature. As argued by Hillman (2000, p. 732):

Because people do not like ambiguity, contracting parties may prefer the safety of a liquidated damages provision over the uncertainty of expectancy damages.

Similarly, Goetz and Scott (1977, p. 557) explain:

The expected cost of establishing true losses under conventional damage measures will thus induce parties who face uncertain or unprovable anticipated losses to negotiate stipulated damage agreements.

The efficiency of liquidated damages contracts in our model rests on the aversion to ambiguity being sufficiently pronounced to induce the parties to forgo risk sharing opportunities in default states. In general, however, efficient contracts exploit risk sharing opportunities in non-default states.

The paper is organized as follows. In Section 2 we present a formal model of contracting in the presence of linguistic ambiguity. Following Grant et al. (2012a), we adopt a convenient subclass of Gul and Pesendorfer's (2014) *expected uncertain utility theory* to model the way the parties evaluate such contracts. We then illustrate, with reference to the idea of liquidated damages, how sufficient aversion to linguistic ambiguity can lead the parties to prefer incomplete risk sharing to ambiguous contracts. We conclude with a brief discussion about how the representation of ambiguity developed in this paper suggests new approaches to further applications in contract theory and agency theory.

2. Contracts, linguistic ambiguity and preferences

Recall from the introduction, a contract is a written or verbal agreement entered into by the parties to the contract which specifies the actions to be taken under various conditions. Formally, we follow the approach developed in Grant et al. (2012a) by modeling this as a finite state space S describing all possible conditions that can be articulated in the common language used by the two parties, and an action space A that describes all actions that the parties can agree to take. Thus we identify a contract c by a mapping from S to A .¹ Let C denote the set of contracts.

While the language and hence corresponding state space S are common, the parties to a contract may disagree *ex post* over which contractual terms have been satisfied and thus which actions are required by the contract.

¹ Linguistic ambiguity is developed more fully in Grant et al. (2012b) where a contract is explicitly specified in a (formal) language. From the formal language we derive the state space S and, for each contract, the associated mapping from S to A .

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