

In examining the nature of database rights for early miners of the Bitcoin protocol, it is essential to distinguish between the rights they acquire through their participation in the database's creation and the concept of ownership held by Satoshi Nakamoto as the original creator. Early miners possess certain rights as a result of their involvement in building the database, but these rights are markedly different from ownership in several critical ways. Specifically, the rights of early miners are non-transferable, limited in scope, and do not confer the full spectrum of control that ownership entails. This analysis will delve into the implications of these distinctions, referencing English case law to clarify the breadth and exclusivity inherent in ownership versus the restricted, non-transferable nature of the rights of early miners.

The Basis of Rights for Early Miners: Creation and Participation in the Database

Under UK law, database rights are granted to those who make a substantial investment in obtaining, verifying, or presenting data, as codified in the Copyright and Rights in Databases Regulations 1997. Early miners, by virtue of their participation in the formation of the Bitcoin database, contribute to its development and thus acquire certain rights associated with their role in creating the data structure.

1. **Creation-Based Rights for Early Miners:** Early miners' rights emerge from their contribution to the blockchain, specifically through the verification and addition of blocks. These actions constitute a form of participation in the database's development, granting them access rights or usage permissions tied to their role in expanding and supporting the network. These rights are grounded in the miners' actions and involvement in the blockchain's structure but are intrinsically limited by the framework set by the original creator.
2. **Non-Transferable Nature of Miner Rights:** Unlike Satoshi Nakamoto, who holds the comprehensive rights of the database's original creator, early miners cannot transfer their participation-based rights. These rights are functionally bound to their individual contributions and do not extend to the broader control associated with ownership. This limitation means that early miners' rights are personal and cannot be alienated, sold, or assigned to third parties, underscoring their restricted scope compared to true ownership.

Ownership as Defined in English Law: Control, Transferability, and Exclusivity

Ownership in English law confers the widest possible set of entitlements over an asset, including exclusive control, the ability to exclude others, and the right to transfer or modify the asset at will. English case law on ownership underscores that it involves not only usage rights but also full autonomy over the asset, which includes the ability to alienate or dispose of it entirely.

1. **Control and Transferability in Ownership:** Ownership entails complete authority over an asset, allowing the owner to use, modify, or transfer it as they see fit. In *Milmo v Carreras* [1994] 4 All ER 133, the court noted that ownership is a "comprehensive right" over an asset, involving both control and the power to exclude others. This broad control includes the right to commercialise, alienate, or share ownership through licensing or sale, enabling the owner to determine the asset's future without restriction.
2. **Exclusivity and Alienability:** Ownership rights are characterised by their exclusivity, meaning the owner alone holds the right to dictate how the asset is used and who may access it. This exclusivity was further explored in *Armory v Delamirie* (1722) 1 Strange 505, where the court held that ownership provides an enforceable claim against all others, including the right to dispose of the property as one chooses. Alienability, or the ability to transfer ownership, is a

fundamental aspect of ownership, distinguishing it from more restricted rights such as those of early miners.

3. **Broad Scope and Transfer in Ownership Compared to Limited Scope for Miners:** The wide scope of ownership includes both the power to determine the asset's use and the flexibility to transfer that power to others. In contrast, early miners have only limited, non-transferable rights derived from their participation in the database. They cannot convey their rights to others, nor can they modify the terms of the protocol established by Nakamoto, emphasising the non-proprietary nature of their position in relation to the database.

The Distinction Between Miner Rights and Ownership: Scope, Transferability, and Control

The rights of early miners differ from ownership in scope, as they lack the broad autonomy and transferability associated with true ownership. Their rights are limited to usage within the original framework set by the database's creator and do not include the power to control or modify the protocol.

1. **Limited Scope of Miner Rights:** The rights of early miners are narrowly defined, allowing them to interact with the database in ways aligned with their contributions but without broader control over the database. These rights do not permit alteration, redistribution, or full commercialisation outside the original terms established by Nakamoto, distinguishing them sharply from ownership. In *Lord Bernstein of Leigh v Skyviews & General Ltd* [1978] QB 479, the court discussed that ownership entails a wide scope of entitlements over an asset, whereas more limited rights are inherently conditional, applicable only within specific contexts or conditions.
2. **Non-Transferability as a Key Distinction:** A primary difference between ownership and miner rights is transferability. Ownership includes the right to sell or transfer control to third parties, a characteristic not applicable to the rights of early miners, which are inherently non-transferable. Their rights are strictly personal, rooted in their individual contributions and restricted to their continued participation. This non-transferability indicates a personal rather than proprietary interest in the database, a distinction that aligns with the principles of *Gray v Barr* [1971] 2 QB 554, where the court outlined that limited or conditional rights lack the comprehensive scope needed for alienability.
3. **Control and the Ability to Modify the Database:** Ownership confers full control over the database, including the power to alter or evolve its structure. In contrast, early miners cannot modify or dictate the terms of the database; they merely hold a right to interact with it as participants. *Football Dataco Ltd v Yahoo! UK Ltd* [2012] 1 All ER 947 demonstrates that the database right-holder has the exclusive power to control access and usage, a control not extended to mere participants. Early miners lack the autonomy to direct the database's future use or change its terms, a limitation that emphasises the difference between their rights and ownership.

Nakamoto's Ownership vs. Miners' Limited Rights: Database Rights in Context

As the original creator of the Bitcoin protocol, Nakamoto holds ownership of the database rights, including full control, exclusivity, and transferability, setting a sharp contrast to the conditional rights of early miners. This ownership allows Nakamoto to determine the protocol's usage, while early miners are restricted to following the original terms without the authority to transfer or alter their rights.

1. **Nakamoto's Ownership as Comprehensive and Transferable:** Nakamoto's ownership of the database rights includes the full suite of ownership powers—control, alienability, and enforceability. Unlike early miners, Nakamoto has the power to permit or deny access, modify the protocol, and transfer rights if desired. This full ownership position, supported by UK database law, permits Nakamoto to operate independently of the participants, maintaining exclusive authority over the database's core principles.
2. **Miners as Holders of Reciprocal, Non-Exclusive Rights:** Early miners' rights, in contrast, are reciprocal rather than proprietary, meaning they exist within the original terms Nakamoto established but lack any capacity for modification or alienation. Miners' rights are confined to usage in line with Nakamoto's framework, reinforcing their dependence on the initial conditions set by the owner. Their rights are usage-based rather than ownership-based, which means they can use the protocol but not alter or transfer their participation rights.
3. **Promissory Estoppel as Enforcement Rather Than Ownership:** For Dr. Wright, his ability to enforce the protocol's original terms arises not from ownership but from Nakamoto's promise that the protocol would be "set in stone." This reliance-based enforcement allows Dr. Wright to ensure adherence to the original design without the transfer, control, or exclusivity that comes with ownership. Promissory estoppel grants him a specific enforcement right against deviations from the original protocol, but it does not grant him the alienability or modification rights inherent to ownership.

Legal Implications of the Distinction: Enforceable, Non-Proprietary Rights for Miners

The distinction between ownership and the rights held by early miners underscores how UK law reserves database ownership for those with full investment-based entitlements, while granting limited, enforceable rights to those who participated without creating the database. This approach maintains the integrity of ownership, restricting it to those with primary investment and creation roles, while enabling others to use the database in compliance with the original terms.

1. **Non-Proprietary Rights for Miners:** The rights of early miners are functionally limited and non-proprietary, allowing them to interact with the database but lacking the full set of ownership powers. They are unable to transfer or assign their rights, which remain tied to their personal contribution, distinguishing them from the alienable and exclusive rights Nakamoto holds as the owner.
2. **Enforceability Through Reliance Rather Than Ownership:** Dr. Wright's ability to enforce Nakamoto's terms reflects a reliance-based entitlement rather than ownership. By relying on Nakamoto's promise, he holds a right to uphold the database's original design but does not possess the alienable or transferable rights associated with ownership. His enforceable interest under promissory estoppel maintains the protocol's consistency without granting the broad authority that ownership provides.

Conclusion: Ownership's Comprehensive Nature vs. Miners' Non-Transferable Rights

In summary, UK law draws a clear line between ownership, with its wide scope, transferability, and exclusivity, and the non-transferable, limited rights held by early miners. Nakamoto's ownership of the database rights includes the ability to exclude, transfer, and control usage, a full proprietary entitlement. In contrast, early miners have conditional, non-transferable rights tied to their participation but lack any authority to modify or alienate the database. Dr. Wright's position, grounded in promissory estoppel, allows enforcement of Nakamoto's original terms **without**

conferring the comprehensive powers of ownership, marking a distinct difference between reliance-based rights and the broad, autonomous nature of ownership.