

A Comparative Study of Concept and Bases of Frustration of Purpose Doctrine in Iranian and English Law

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Received: September 5, 2016

Accepted: October 7, 2016

Online Published: October 14, 2016

doi:10.5539/ass.v12n11p86

URL: <http://dx.doi.org/10.5539/ass.v12n11p86>

Abstract

After the conclusion of contract its parties are obliged to perform their contract. If one of the contract parties does not enforce it by some reasons, the other party has the right to bind him to perform the contract. In some cases the non-performance of obligation is not based to the denial of obligator. In English Law, an idea under the title of discharge by frustration has been devoted to this issue and other reasons have been enumerated for it. In this between, Sometimes without the performance of contract is unenforceable, the conditions come into existence which the parties purpose of conclusion of contract are affected and the performance of contract for one or two parties become useless. In this case, the performance of contract is not encountered physically and legally with problem, but the parties intention of conclusion of contract is not within reach anymore. This issue has been set forth for discussion under the title of frustration of purpose and it is a part of the theory of discharge by frustration. In Iranian law, such a theory has not been recognized, but considering some articles of the Civil Code including articles 480,527,551 which seem the bases of this theory are rooted in them, one could believe in this theory in Iranian Law. In this article we intended with the use of reliable sources to have a deliberation in the concept and bases of frustration of purpose doctrine in Iranian and English law.

Keywords: contract, frustration of contract, frustration of purpose, impossibility of enforcing the contract

1. Introduction

In English law until 1863, "The Theory of Absolute contracts" dominated (1, p. 322). According to this theory, each of the parties, the absolute duty to enforce contracts (2, p. 98) and are run without fault even with the proof of the fact that he even accidents can not be the responsibility of power is impossible CAIRO seeks relief (3, p. 426). Anyway or to contract that costs a fortune that he could not predict his load or that all damages resulting from a breach of the obligation to pay the other party (2, p. 99). But this theory was a violation of 1863 and gave way to the doctrine of frustration. The courts were very strict and implementation of new doctrine was limited to the performance of the contract impossible to be as serious as the loss of the contract (4, p. 97).

Taylor fight against Caldwell beginning of the process of the Court, citing the implied term theory, the theory of absolute violated the contract. It was then that this doctrine (sterilization) gradually and with different arguments have their place in English law, opened. Finally legislator English with the aim of bug fixes included in this theory in 1943, "An Act to amend the disinfection contract law" passed. Read more about the history of jurisprudence to say Last fall the various jurisprudential task in terms of origination, was accepted Among these are the termination of the contract of sale due to sales lost before the bill (5, p 509). And give (5, Ibid). Termination of lease rentals due to the same injury (6, p. 352) Sharecropping termination due to water loss and loss (7, p. 22). Or the tenant (6, p. 279) named. The effect of such vow and covenant, oath conventions between man and God has accepted (8, p. 20). In civil law to comply with the law. Although there are sporadic, they express no effect no special textual content of this rule to directly express in sight in this article, we review the theoretical foundations of the concept and doctrine infertility (impossibility of performance) contracts by disproof we aim at Iran and England.

2. Concepts

The execution of any contract is subject to the possibility of its implementation and rights, something beyond the capabilities of a person does not impose on him so where due to external factors, performance of contractual

obligations becomes impossible such mutual commitment to ethics and law unenforceable and therefore they are downed because there is no obligation to impossible (9, p. 198). In the case of impossibility of performance of the obligation, the effect of the fault committed and attributed to him. He denied being responsible for damages resulting from it. Manifestation legal situation can be under the rule of the “impossibility of performance of the contract” to be discussed quality that could be based on those principles and general rules of contract performance and also won its legal consequences.

2.1 Doctrine of Frustration of Contract

The doctrine of impossibility of performance of the contract in English law as “Frustration” is recognized. Frustration in Spanish means frustration, exclusion and frustration come and in terms of explaining the dissolution of the contract, due to run and disproof of the contract is impossible (10, p. 627). One of the lawyers wrote English in the definition of the rule is:

“Infertility, early termination of contract due to run times, impossible or target would be ruled out Or at least it fundamentally different from what was expected and imagined parties are Requiring the parties to the contract so that it is unreasonable” (11, p. 506). Another British legal authors define this rule as stated:

“Infertility, early termination of a contract that is legally conclusion, but run by an event that dealt with the or by changing the context, so that when disproof of the contract, and expected the parties had been thought lost his ability to run” (4, p. 90). If these definitions are used, based on the performance of the contract impossible or unreasonable if the doctrine of frustration, the contract automatically and without the need for any further action by the parties, the contract ends, in other words for compulsory be dissolved. The effect that is characteristic of this doctrine can be one of the aspects, characteristics “The doctrine of frustration” with the rule of law is the impossibility of performance of the contract.

In Iran, although the termination of contract enforcement is impossible in principle, but in some cases, Impossibility of performance of the contract, crushed committed to providing the blink of contract (termination) will be granted have not seen such a case in English law. On the other hand, in English law, the dissolution of the contract due to impossibility, never in the concept of not analyzing exchange guarantee and never Technical analysis of the mechanism of dissolution of the contract, not dealt with, but the dissolution of the contract and the collapse of the mutual commitment of the run. In Iranian law, the principle of impossibility of performance of the contract has no independent legal status.

But also scattered in different materials in different fields of civil law is to search for it for this reason, usually legal publications on this subject, as a general rule not been considered independent threads. The aim of this principle by disproof of contract sterilization exception and balances Iran's rights obsolescence and inclusive definition of it. In terms of non-performance damages in civil law (Articles 226 to 230 of the Civil Code) has been paid to the problem of impossibility of performance of the obligation. In this often under the same legal effects as force majeure, and lack of necessary compensation will be discussed (9, p. 197; 12, pp. 238-237; 13, p. 147). But it should be noted that the force majeure refers to all causes is the lack of performance of the contract. The impossibility refers to a situation that under certain circumstances and the purpose of the implementation of the obligation destroys parties. The impossibility of performance of the contract basically, the dissolution of the contract and abrogation of obligations or in some cases led to the suspension of the execution of the contract and exemption from payment of damages is ancillary works. Therefore impossibility of performance of the contract is that “after the conclusion of the contract, its implementation as a result of factors that are not attributable to and yet irresistible, financially or in terms of personal or credit or basic intent of the parties, impossible or useless and does not undertake responsibility for it.

2.2 The Concept of the Rule of Objective Disproof

Create any legal relationship following a definite determination takes shape a person in addition to that goal, the ultimate purpose of the equation. Sometimes be impossible without the implementation of the contract and the subject of the contract, a situation that occurs. The purpose of the parties making the agreement eliminates and execution of the contract of one or both sides, useless and basically becomes useless. In other words, the purpose of the contract is ruled out and fails In these cases, although legal enforcement of contracts in terms of material and may no barrier to the implementation of the agreement in this respect there is no change in the circumstances surrounding the contract, it is affected by the intention of the parties or both of them has aborted so that contract if implemented, will yield at least for one of the parties (14, p. 42).

However, in case material or legal impossibility of executing the main purpose of the contract fails, but there is no doubt in the realization of the impossibility of implementing the principle, not material. But the issue of

disproof goal of their different nature and distinct from physical or legal impossibility of performance of the contract (as in the implementation of the contract may be material (1, p. 546). To understand disproof of the target and its differences with other contract proposed example as follows we build a contract will be based on large dams and dredging to act enema. But at the beginning or in the period of operation as a result of a strong earthquake damaged or destroyed dam wall so that there is no possibility of repair and insulation loses its usability. As a result of this incident dam dredging and removal of silt from the dam did not yield practical deemed useless. In this case, the dredging contract execution, it is possible that even after damage to the dam. However, due to changes in the conditions governing the contract before its implementation barren and purpose of the contracting parties, is gone for this reason, logic and wisdom that are required to perform the contract and required to pay the other party know about commitment. In such a case it seems should be allowed to dissolve the contract because the main purpose of the contract and its foundation is gone. In between writing legal opinions that can not be spent disproof of one of the parties to the contract intended for aborting the contract is deemed,

But in their view, disproof goal, when would be the disproof of contract intended to deal with the basic terms of the contract and that the contract can destroy infrastructure (15, p. 543). Perhaps in some ways, it is better to replace the term “common purpose or goal”, it is the “foundation agreement” interpret. Knowing that the aim is for a contract to analyze the consent of the parties in each particular case. The “common purpose” is what constitutes the basis of mutual consent of the parties in the contract and in reaching an agreement, to both sides, is essential; although related to the interests of one of them of course, the superfluous and personal goals of each of the parties to the contract he put that stimulus, is not intended, but these goals must be logged in mutually agreed areas and build on it. One thing we must pay attention to it and to mention it, is that disproof of targeting that can cause deterioration of commitment, may be caused by a variety of causes. Sometimes the cause, the effect is material causes the destruction of the walls of the dam on the circumstances surrounding the contract as a result of the earthquake, is of this type. At other times the objective disproof of origin, the law is the law without being absolutely prohibit the execution of the contract, under disproof of the parties intended the contract to be like that civilian employment for rent, but the ban. It is possible disproof of objective and aborting the contract because of delays in executing them. Where the desired unity between the runtime and the commitment there is any delay, for any reason will be destroyed by the contract.

2.3 Sporadic Cases in Jurisprudence and Law

Products from contemplated in civil law cases can be found in the various contracts that explicitly or implicitly targeted to different causes have raised disproof. For example, Article 481 AH. The rent and Article 527 and Article 551 BC on sharecropping about mudaraba and Article 199 of the Commercial Code reform bill named.

Contracts such as leases and sharecropping contracts require their performance to remain constant as part of the terms and conditions of the ruling. Survival benefit from the same lease as well as the possibility of survival for the implementation of sharecropping, such as water, an essential condition for the implementation of these contracts. Whenever a particular benefit from the mutual consent of the parties to be leased and the lease also profit causes to lose the lease will be void (Article 481 BC. AD). At least the loss of the benefit of the compromise, Mstajrhq terminate the contract based on the implied term finds (16, p. 170). For example, if a building is leased for the construction of a single asylum. And adjacent desert by firing into the army, obviously, a desert firing range adjacent to the benefit of the parties due to the terrible sounds of gunfire or bomb is dropped. The tenant will have the right to terminate the lease (Ibid, p. 171). According to dissolve the contract in the event that the basic purpose of the lease contract is impossible not to be dismissed. Because, when the benefit is not possible for a contract of lease and other interests can not be replaced, then you should rent due to be dissolved aborting its purpose (17, Ss400-399). According to article 527 BC. D. If the contract sharecropping ability to crop particular for land placed and the ability for any reason lost, although the possibility of cultivation other where there is a contract of sharecropping dissolved the (18, p. 81; 19, Page 225). Based on article 551 BC., the contract also if trade in which the parties is impossible, the contract is dissolved. In this case also impossible to trade, the parties in the partnership (the purpose of investment and operating) will fail.

1. Article 199 of the Commercial Code Amendment reads: “corporation be dissolved in the following cases: when an issue for which the company has done or do it is impossible”.

As is obvious from the liquidation of a company is considered impossible that the purpose for which it is composed. For example, for the production of alcoholic beverages in the former regime of the Islamic Revolution and banned such transactions should be dissolved. In Islamic jurisprudence, can be examples for this type of impossibility, ie, the sterilization of the contract. If subterranean water or arable land leased from the

liquor stream that is dry, the tenant will have to terminate the contract (20, p. 446). The sentence also expressed about sharecropping, ie, if due to lack of rain and dehydration, the possibilities for farming purposes, be ruled out, sharecropping be ruled out (6, p. 275). Kalam also disproof of objective interest in the lease, the rent is considered invalid (7, p. 206).

2. Theoretical Foundations of doctrine disproof of targeted

In English law different theories about the principle that everyone is born precedent, judges that this has been tried. That their actions in the neglected doctrine of absolute contracts to verify (21, p. 81). In Iranian law on the principles of the rule is rarely discussed and during various topics that relate to this rule. As of surrender, sales lost to the bill, the same loss of lease and some other topics, lawyers have expressed opinions.

3. The theory implied term

The idea that the presumed intention is famous both in Iran and also in English law as one of the foundations of the theory of impossibility of performance of the contract by disproof of objective been considered. In our law, the implementation of the rule, and it affected mainly by the Exchange Guarantee Agreement will be analyzed. The general rule in all the swap contracts when the commitment by one of the parties is impossible. The other party that there have been unproductive commitment for commitment is shot down, and the Exchange Guarantee owes (16, p. 246; 22, p. 991).

Article 387 of the Civil Code regarding sales lost before the bill provides: "If the object of sale by the vendor to surrender without fault or negligence be wasted, sale dissolved and the price must be refunded to the customer". Some authors believe that "common will that the implementation of the commitment on the one hand, the implementation of the commitment of the other side and if one of the parties fails its commitment to implement the commitment on behalf of other lapses." (12, p. 296).

Instead of consent, which is the real basis of the relationship between the two has created an indivisible whole. In such contracts, the parties were willing to exchange the property and asked that two independent religion there, so it is natural invalidity of one of those two, because another dissolution (23, p. 248). So it can be said that the real basis for the rule of law, the common intention of the parties.

It is thought that her intention in the form of an implied term. Accordingly, where the common intention of the parties to put a specific purpose is and this causes unrelated to the parties to the contract be canceled, the contract will lose its ability to run. In English law this theory, the theory is that as the cornerstone of the theory of absolute sterility contracts have been used to get rid of Clause doctrine. Using the theory of implied term in English law is different from its use in Iranian law. In Iranian law, this theory is analyzed in terms of the Exchange Guarantee. But in English law without the use of such an analysis, it is considered that in accordance with the presumed intention of the parties, where contract enforcement is impossible, the contract will be dissolved. The result of this difference in the effects of the rule appears.

Because Iranian law, based on the commitment and the nature and quality of this intention and implied term of the contract may result in cancellation or voluntary (establishing the right to terminate) the contract. But generally the provisions of the implied term in English law, the dissolution of the contract in the event of accidents is unproductive. One of the lawyers named in England compared the doctrine of impossibility of performance of the contract sterilization and the rule of law and European countries, refers to this difference of opinion and the sterility of criticism of the doctrine (24, Ss559-558). The theory implied term in some personal opinions on the means employed and in some other opinions on the meaning of some sort. It should be noted that this theory has been used in the entire alternative rule and a specific sterilization is not the purpose of the contract due to disproof. In response to this question should be considered which means "Lord Watson" in action "drum" is commented:

"According to what the parties intended the interpretation of the contract should have done because they have not thought about it and have not intentional about it. But its meaning is what the parties as fair and honest man, if events come into consideration, they agreed that" (3, p. 438).

2.4 The Foundation Contract Theory

According to this theory, when the purpose of a contract is impossible that the foundation has been undermined and compromised. According to the parties on the basis and purpose of the contract would have to contract, with the loss of it, stay committed to the contract will be canceled this theory in 1916 by the Lord in dispute "Templin" in this fight as he said: "When people enter into a contract to provide the possibility of its implementation depends on continued access to certain things, and because circumstances beyond the control of the parties disappears, the first contract is dissolved". Then in 1928, the idea for obvious by the judge, "Goddard" was used:

“If the foundations be destroyed and contract basis either because of the destruction of the subject, or through long break or by delaying the implementation of affected and it really different from what was in the contract are and the parties have not provided any way for dealing with this situation is considered canceled contract.” (21, p. 820). In Iranian law, especially in contracts based on the theory can be exchanged for special meaning, but participation in them is well-known element Such as sharecropping, company parties and other contracts that follow a common purpose-that of course, not as an independent basis - be addressed but to describe the presumed intention of the parties. For example, according to the fourth paragraph of Article 550 of the Civil Code of the Limited Partnership, doing business if the contract were to be impossible, the partnership is dissolved.

2.5 Theory Fair Solution

Another theory as the theoretical basis for the doctrine of impossibility of performance of the contract in English law has been raised due to objective disproof of the theory of “fair solution” is. Proponents of this theory declare that requires knowing the parties to the contract in case of failure to execute the contract, unfair and unjust. According to this theory, the doctrine of frustration not appointed as an implied term to the parties but also as a fair and reasonable solution is to apply (24, p. 547). This theory, first in 1926 by “Lord Sumner” was introduced. He described the doctrine of sterilization as a measure by which the rules of absolute contracts, with a special exception to the requirement of justice, adapted (21, p. 819). Later, Lord Wright's doctrine of sterilization based on the idea of making “implied term is based on the doctrine of frustration, but on the special rule of the common law which it has developed. Once the contract is frustrated, the court has disposal to achieve a fair and reasonable solution applies”. [Same] Proponents of the theory argue that if for the doctrine of sterilization, the theory of “implied term” is invoked, or if it is said that the parties in terms of commitment between the foundation and purpose of the contract is ruled out, it is because their logic of justice and Barry knows (3, p. 447).

Opponents argue that the theory cannot be the basis of the doctrine of frustration it is inappropriate to judge solely on the basis of the legal opinion at its discretion and to apply a doctrine as that is fair, it is necessary. The theory of “fair solution” is not legally defensible In Iranian law, never run the rule impossibility of contract performance, using concepts such as justice, logic or fairness is not justifiable and although the concepts are the basis for any rule in any legal system, but directly and independent reasoning is not in our law.

2.6 Theory of the Commitment

Another theory that can be used as the basis of the principle of impossibility of performance of the contract due to disproof of purpose, both in Iran and also in English law, to be discussed, is the theory. In Iranian law the obligation of contracts is not mentioned as one of the basic conditions and in this context, the French civil code has not been followed [25, p. 80]. Instead, the transaction is derived from the jurisprudence. Notwithstanding such lien (Article 377 BC. AD) and Article 387 of the Civil Code regarding sales lost before the bill may create the illusion that results from theory due to commitments given to the French law is recognized in Iranian law. But these are, in fact, caused by the principle of solidarity link and dual obligations arising from contracts not based on the theory of the cause. The basis of this work, the element of intent and consent [23, p. 246]. Therefore impossibility of performance of the contract on the basis of the rule of law and the will of the intention of the parties is implicit. The cause of the common law theory of “change” has been a change in the common law meaning to the concept of cause is close to the French law. In this system, where the incident sterilization, the mere fulfillment of the obligation impossible one side, the other side is based on the theory of “no change” is Barry. For example, if an event impossible to implement the obligation of the seller but had no effect on the obligation of the other party (payment), or not According to this theory the most recent applicable commitment to be Barry.

And the commitment of both sides in the contracts of solidarity that arises in French law as “the commitment” will be discussed.

But whereas the lack of change in British law theory is applicable only where the change is completely flawed, it refers to cases where minor changes are imperfect, it is not.

The House of Lords in 1981 in one of the claims of the theory of change as the lack of doctrine rejected sterility (21, p. 822). However, it is clear that due to commitments theory, not in Iran and not the position in English law as the basis for the rule of impossibility of performance of the contract and no doctor yen sterilization.

3. Results

As we have seen in English law disproof of the theory of targeting is one of the alternative theory of contract sterilization and has several theoretical foundations of this theory has been used to justify the most important of which are.

3.1 The Theory Implied Term

This theory in Iran and also in English law as one of the foundations of the theory of impossibility of performance of the contract by disproof of objective been considered. In English law this theory, the theory is that as the basis for the theory of absolute sterility contracts have been used to get rid of Clause doctrine. Using the theory of implied term in English law is different from its use in Iranian law. In Iranian law, this theory is analyzed in terms of the Exchange Guarantee. But in English law without the use of such an analysis, it is considered that in accordance with the presumed intention of the parties, where contract enforcement is impossible, the contract will be dissolved. The result of this difference in the effects of the rule appears.

Because Iranian law, based on the commitment and the quality and nature of the contract, the intention and implied term may result in cancellation or voluntary (establishing the right to terminate) the contract. But generally the provisions of the implied term in English law, the dissolution of the contract in the event of accidents is unproductive. The theory foundation of contract according to this theory, when the purpose of a contract is impossible that the foundation has been undermined and compromised According to the parties on the basis and purpose of the contract would have to contract, with the loss of it, stay committed to the contract will be canceled Iran can be mentioned in the law theory, especially in contracts that are not based on specific exchange means. But participation in them is well-known element such as a partnership, sharecropping, corporations and other contracts that the parties pursue a common purpose but not as an independent basis - considers this theory in 1916 by the Lord in dispute "Templin" in this fight as he said when people enter into a contract to provide the possibility of its implementation depends on continued access to certain things and circumstances beyond the control of the parties disappears, at first contract is dissolved. Proponents of this theory declare that requires knowing the parties to the contract in case of failure to execute the contract, unfair and unjust. According to this theory the doctrine of frustration not appointed as an implied term to the parties but also as a fair and reasonable solution is to apply in Iranian law, never run the rule impossibility of contract performance, using concepts such as justice, logic or fairness is not justifiable and although the concepts are the basis for any rule in any legal system, but directly and independent reasoning is not our rights the rights of the commitment, not mentioned as one of the basic conditions of contracts with things like lien (Article 377 BC. AD). And Article 387 of the Civil Code regarding sales lost before the bill may create the illusion that results from theory due to commitments given to the French law, is recognized in Iranian law. The cause of the common law theory of "change" has been a change in the common law meaning to the concept of cause is close to the French law. But whereas the lack of change in British law theory is applicable only where the change is completely flawed, it refers to cases where minor changes are imperfect, it is not. According to this theory due to commitments, not British rights in Iran and not in a position to rule as the basis for the doctrine of impossibility of performance of the contract and not become infertile. The theoretical basis in English law has been discussed but in Islamic law and our rights are not addressed directly to the base of objective disproof. This is not a theoretical basis for consideration and review. But some civil law for such materials 377, 378, 481, 527, 550, 551 and Article 199 of the Civil Code reform bill and the principles of jurisprudence and legal business generally, including No surrender, sales lost to the bill, Exchange Guarantee and lien in our legal. It can be justified on the basis of objective disproof of the theory And on the assumption that although Iranian law has not been directly raised this issue and any material or it does not have a specific legal rule.

But with the fundamentals and various articles in Iranian law and general legal principles can be made on the assumption that no disproof of objective impossibility of performance of the contract due to the Iranian law as well.

References

- Abdo Boroujerdi, M. (1380). *Civil Rights* (1st ed.). Majd Publications.
- Anson, S. W. (1959). *Principles of the English Law of Contract* (21st ed.). Oxford University Press.
- Cheshire, F., & Furmston. (1986). *Law of Contract* (11th ed.). London: Butterworth Publication.
- Consistory, N. (1380). *General rules of contracts* (Vol. 4, 3rd ed.). Corporation publication.
- Corbinon, A. L. (1962). *Corbinon Contract* (Vol. 6). West publication Co.

- Halsbury's Law of England. (1981). *Butterworth's* (4th ed., Vol. 9). London.
- Imami, H. (1382). *Civil Rights* (Vol. 2). Publishing Islamic Bookstore.
- Jalaluddin, M. (1383). *Civil Rights* (Vol. 3). Published the first stable release.
- katoozian, N. (1379). *General rules of contracts* (5th ed., Vol. 2). Publishing Company Publishing.
- katoozian, N. (1379). *Legal Acts, VII*. Joint-Stock Company Publishing.
- katoozian, N. (1381). *Of certain contracts* (Vol. 1). Publications Publishing Company.
- Khomeini, M. *Ruhollah, Tahrir ul-Vassileh* (translated by Ali Eslami, Volume 3).
Oxford Advanced Learner's Dictionary. (1386). Daneshyar publication, Tehran.
- Qomi, M. A.-Q. *Comprehensive Alshtat* (Vol. 3). The Islamiyah Daralktb.
- Rafiei, M. T. (2003). *Law of Contract*. Universal Law Publication Co. Ltd.
- Robb, G. G. G. (1965). *An Outline of the Law of Contract* (3rd ed.). London: The Estates Gazette limited.
- Sadeghimoghadam, M. H. (1386). *A change in the terms of the contract* (2nd ed.).
- Safai, S. H. (1351). A theory of contract. *Journal of Law and Political Science*, 8.
- Safai, S. H. (1383). *Civil Rights* (Vol. 2).
- Sanhoury, A. R. (1958). *Mediator in the explanation of the new law and civil*.
- Thani, S. (*Zinedine Ben Noureddine workers*) *School Gorgeous explain shines Damascene*. 4 leather spreads
Daralalm Islamic, Beirut
- Thani, S. *School Albhbh explain Damascene shiny, skin Sum, spreads Daralalm*. Beirut, Bit.
- Treitel, G. H. (1989). *An Outline of the Law of Contract* (4th ed.). London: Butterworth's Publication.
- Walker, D. M. (1980). *The Oxford Companion to Law*. Oxford: Claremont Press.

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