	Example	Satisfiability (expected)	TR pattern	Satisfiability TR	TQC pattern	Satisfiability TQC
STR_cm+	Every tooth is part of an organism at some time tooth for which there is a time it is not part of any organism	Y	tooth subclassOf 'part of continuant at some time' some organism tooth and not ('part of continuant at all times' some organism)	Y	tooth subClassOf 'at some time' some ('part of continuant' some organism) tooth and 'at some time' some ('part of continuant' only (not organism))	Y
STR_cm-	Every human has no teeth at some time in their life A human having teeth at some time	Y	human subclassOf not ('has continuant part at all times' some tooth) human and 'part of continuant at some time' some tooth	Y	human and subClass Of 'at some time' some ('has continuant part' only (not tooth)) human and 'at some time' some ('has continuant part' some tooth)	Y
STR_cp1	Every apple is green at some time apple that is only red at some time	Y	apple subClassOf 'has quality at some time' some 'green color' apple and 'has quality at some time' only ('red color' or not color) and 'has quality at some time' some 'red color'	N	apple subClassOf 'at some time' some ('has quality' some 'green color') apple and 'at some time' some ('has quality' only ('red color' or not color))	Y
STR_cp2	Every vertebrate participates in some birth process at some time Vertebrate that at some time does not participate in a birth process	Y	vertebrate subClassOf 'participates in at some time' some 'birth process' vertebrate and not ('participates in at all times' some 'birth process')	Y	vertebrate subClassOf 'at some time' some ('participates in' some 'birth process') vertebrate and 'at some time' some (not ('participates in' some 'birth process'))	Y
STR_im+	Every fecundation has some spermato-zoon as participant at some time Fecundation event for which there is never any spermatozoon that participates	N	fecundation subClassOf 'has participant at some time' some spermatozoon fecundation and not ('has participant at some time' some spermatozoon)	N	fecundation subClassOf 'has participant' some spermatozoon fecundation and not ('has participant' some spermatozoon)	N
STR_im-	The blood specimen bs430912 is in the lab lab996 during the whole time interval 2013-10-20. The blood specimen bs430912 is in the lab lab100 during the whole time interval 2013-10-20. The labs do not share any facilities	N	bs 430912' 'located in at some times' 'lab 996' bs 430912 'located in at some times' 'lab 100' 'located in at all times' value 'lab 100' subClassOf not('located in at all times' value 'lab 996')	* Y	'bs 430912 at 2013-10-20' 'located in' 'lab 110 at 2013-10-20' 'bs 430912 at 2013-10-20' 'located in' 'lab 996 at 2013-10-20'	N
STR_ip	Joe`s left ankle is swollen during the whole time interval 2013-10-20 There is a time within the interval 2013-10-20 in which his ankle is not swollen	N	Joe`s left ankle' value 'has quality at some time' some swollen Joe`s left ankle' value not ('has quality at all times' some swollen)	* Y	'Joe`s left ankle at 2013-10-20' Type 'has quality' some swollen ('has max' value 'Joe`s left ankle max') and spans some ('temporal part of' value 2013-10-20) and not ('has quality' some swollen)	Y
PGR_cm+	Mary participated in the process of Mary`s birth There is a time in which Mary is not a participant in any birth process	Y	Mary 'participates in at some time' 'Mary`s birth' Mary Type not ('participates in at all times' some 'birth process')	N	'Mary max' Type ('at some time' some ('participates in' value 'Mary`s birth')) ('has max' value 'Mary max') and not ('participates in' some 'birth process')	Y
PGR_cm-	Every red blood cell always includes some oxygen molecule There are red blood cells without oxygen molecules	N	history of' some 'red blood cell' subClassOf 'has occurrent part' some ('part of occurrent' some ('history of' some 'oxygen molecule')) red blood cell' and 'has continuant part at some time' only (not 'oxygen molecule')	Y	'red blood cell' subClassOf 'location of' some 'oxygen molecule' 'red blood cell' and (not ('location of' some 'oxygen molecule'))	N
PGR_cp1	No apple has ever any tooth as part An apple that has a tooth at some time	N	'history of' some apple subClassOf not ('has occurrent part' some ('part of occurrent' some ('history of' some tooth))) apple and 'has continuant part at some time' some tooth	Y	apple subClassOf not ('has continuant part' some tooth) Apple and 'has continuant part' some tooth	N
PGR_cp2	Every electronic health record is always on some computer storage There are electronic health records that are not on a computer storage	N	electronic health record' subClassOf 'generically depends on at some time' some 'computer storage' electronic health record' and not ('generically depends on at some time' some 'computer storage'	* N	'electronic health record' subClassOf 'generically depends on' some 'computer storage' 'electronic health record' and not ('generically depends on' some 'computer storage')	N
PGR_im+	Every organism always participates in some ecologic process There are organisms that do not participate in any ecologic process at some time	N	organism subClassOf 'participates in at some time' some 'ecologic process' organism and not ('participates in at all times' some 'ecologic process')	N	organism subClassOf 'participates in' some 'ecologic process' organism and not ('participates in' some 'ecologic process')	N
PGR_im-	Every breathing process has always some volume of air as participant There are parts of breathing processes in which no air volume participates	N	temporal part of' some 'breathing process' subClassOf 'has occurrent part' some ('part of occurrent' some ('history of' some 'volume of air')) 'temporal part of' some 'breathing process' and not ('has participant at some time'some 'volume of air')	N	'temporal part of' some 'breathing process' SubClassOf 'has participant' some 'volume of air' 'temporal part of' some 'breathing process' and not ('has participant' some 'volume of air')	N
PGR_ip	Mary`s blood always has as part some blood cell There is a time in which Mary`s blood is devoid of blood cells	N	history of' value 'Mary`s blood' subClassOf 'has occurrent part' some ('part of occurrent' some ('history of' some 'blood cell')) history of' value 'Mary`s blood' and 'has continuant part at some time' only (not 'blood cell')	Y	'has max' value 'Mary`s blood max' subClassOf 'has continuant part' some 'blood cell' 'has max' value 'Mary`s blood max' and not ('has continuant part' some 'blood cell')	N
PGR_ep	Joe`s electronic health record always resides on some electronic storage medium There is a time in which Joe`s electronic health record is on hard disk A and another time in which it is only on a different storage	Y	Joe`s health record' Type 'generically depends on at some time' some 'computer storage' 'Joe`s health record' 'generically depends on at some time' 'Hard disk A') not ('Joe`s health record' 'generically depends on at some time' 'hard disk A')	* N	'has max' value 'Joe`s health record'_max subClassOf 'generically depends on' some 'computer storage' 'max of' some ('generically depends on' some ('has max' value 'Hard disk A max')) and 'max of' some (not ('generically depends on' some ('has max' value 'Hard disk A max')))	Y

	Example	Satisfiability (expected)	TR pattern	Satisfiability TR	TQC pattern	Satisfiability TQC
PGR_ip	Joe`s breathing process has always some volume of air as participant		'temporal part of' value 'Joe`s breathing process' subClassOf 'has occurrent part' some ('part of occurrent' some ('history of' some 'volume of air'))		'temporal part of' value 'Joe`s breathing process' subClassOf 'has participant' some 'volume of air'	
	Joe`s breathing process is without air at some time	N	'temporal part of' value 'Joe`s breathing process' and not ('has participant at some time'some 'volume of air')	Y	'temporal part of' value 'Joe`s breathing process' and 'has participant' only (not 'volume of air')	N
PSR_cm+	Every human has a brain and it is always the same brain		human subClassOf 'has continuant part at all times' some brain		human subClassOf 'has max' some ('has continuant part' some brain)	
	There is a time in which Joe does not have his first brain	N	Joe 'has continuant part at some time' 'Joe`s first brain' Joe 'has continuant part at some time' 'Joe`s second brain' not (Joe 'has continuant part at all times' 'Joe`s first brain')	N	'Joe at t2' value not ('has continuant part' some ('has max' value 'Joe`s first brain max')) and ('has continuant part' some ('has max' value 'Joe`s second brain max')	Y
PSR_cm-	No cell includes always the same volume of water during its lifetime		cell subClassOf not ('is location of at all times' some 'volume of water')			*
	A cell that always includes the same volume of water as long as it exists	N	cell and 'is location of at all times' some 'volume of water'	N		
	Every mammal has the same biological sex during its life		mammal subClassOf ('has quality at all times' some 'biological sex') and (('has quality at all times' only 'male biological sex') or ('has quality at all times' only 'female biological sex'))		mammal and ('has quality' some 'male biological sex') SubClassOf not ('at some time' some ('has quality' only 'female biological sex')) mammal and ('has quality' some 'female biological sex') SubClassOf not ('at some time' some ('has quality' only 'male biological sex'))	
	A mammal that is male at some time and female at some other time	N	mammal and 'has quality at some time' some ('female biological sex') and 'has quality at some time' some 'male biological sex'	Y	mammal and 'at some time' some (mammal and 'has quality' some 'male biological sex') and 'at some time' some (mammal and 'has quality' some 'female biological sex')	Y
PSR_cp1	Every organism always participates in its life, and it is always the same		organism subClassOf 'participates in at all times' some 'biological life'		organism subClassOf 'has max' some ('participates in' some 'biological life')	
	Joe participates in two different lives	N	Joe 'participates in at some time' 'Joe`s first life' Joe 'participates in at some time' 'Joe`s second life' not (Joe 'participates in at some time' 'Joe`s first life')	N	('has max' value 'Joe max') and 'participates in' value 'Joe`s first life' and 'participates in' value 'Joe`s second life'+A35	Y
PSR_cp2	Every biological life always has some organism as participant, and it is always the same		biological life' subClassOf 'has participant at all times' some organism		temporal part of biological life' subClassOf 'has participant' some ('max of' some organism)	
	A life that has for some time a human as participant and for some other time another organism as participant	N	('has participant at some time' some human) and ('has participant at some time' some (not human)) and 'biological life'	Y	('has participant' some human) and ('has participant' some (not human)) and 'biological life'	Y
PSR_im+	Mary has 'Mary`s brain' as a proper part during her lifetime		Mary 'has continuant part at all times' 'Mary`s brain'		'Mary max' Type 'has continuant part' some ('has max' value 'Mary`s brain max')	
	There is a time in which Mary has no brain	N	Mary type 'has continuant part at some time' only (not brain)	N	('has max' value 'Mary max') and not ('has continuant part' some brain)	Y
PSR_im-	Tibbles, a male cat, has the same sex during his life		'Tibbles sex' 'quality of at all times' Tibbles 'Tibbles sex' type Male 'biological sex'		'has max' value 'Tibbles max' SubClassOf ('bearer of' some 'male biological sex') and ('bearer of' only ('male biological sex' or (not ('biological sex'))))	
	Tibbles is female at some time during his life	N	Tibbles type 'has quality at some time' only (not 'male biological sex')	Y	'has max' value 'Tibbles max' and ('bearer of' some 'female biological sex')	N
PSR_ip	Joe participates in his life and not in any other life		Joe Type 'participates in at all times' some 'biological life'		'has max' value 'Joe max' subClassOf 'participates in' value 'Joe`s life'	
	Joe participates in a human life and part of his life is a cat life	N	Joe Type 'participates in at some time' only ('cat life' or not 'biological life') and 'participates in at some time' only ('human life' or not 'biological life')	Y	('has max' value 'Joe max') and 'participates in' some 'cat F38	Y
NR_t	Every fetus is an embryo at some time. Nothing can be both an embryo and a fetus at the same time		fetus disjointWith embryo	*	fetus subClassOf 'at some time' some embryo. embryo disjointWith fetus	
	There are fetuses that were never embryos	N	fetus and not embryo	Y	fetus and not ('at some time' some embryo)	N
NR_i	John was a medical student from 2001-10-01 to 2007-06-30. Every person who is a medical student was a high school student at some time		John Type 'medical student'	*	'medical student' subClassOf 'at some time' some 'high school student' 'John at 2001-10-01 to 2007-06-30 'at some time' 'John max' 'John at 2001-10-01 to 2007-06-30' spans '2001-10-01 to 2007-06-30'	
	John was never a high school student	N	John Type not ('high school student')	Y	'has max' value 'John max' and not ('at some time' some 'high school student')	N