Appendix 5

Transitive Participants Conflated with Medium in BRIDGING

BRIDGING:PARASOL 1

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	those colorless combinations of oxygen and sulfur	Carrier		
2.			they (those colorless combinations of oxygen and sulfur)	Actor
3.	it	Goal		
4.	sulfates	Carrier		
5.	a bunch of these droplets	Goal		
6.	a cloud	Goal	you	Actor
7.	excess aerosols	Existent		
8.	clouds	Carrier		
9.	the planet	Goal		
10.	the water droplets [[.....]]	Carrier		
11.	the available water vapor	Actor		
12.	that	Carrier		
13.	equal amounts of table salt and rock salt	Goal		
14.	you	Senser		
15.	Charlson	Sayer		
16.	you	Senser		
17.	fewer particles [[.....]]	Existent		
18.	everything else	Carrier		
19.	the cloud with more droplets	Carrier		
20.	the physics and chemistry of cloud formation	Phenomenon		
21.	few in the field	Senser		
22.	it	Carrier		

BRIDGING: PARASOL 2

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Charlson	Sayer		
2.	a number of subtleties to the parasol effect [[...]]	Existent		
2.eb	global warming veering	Goal	aerosols,	Actor
3.				
4.	he	Sayer		
5.	you	Behaver		
6.	A certain amount of aerosol haze	Actor		
7.	Twenty-two million tons of sulfur	Goal	minuscule, single-celled marine algae,	Actor
8.	its faintly musty smell	Goal		
9.	its share	Goal	The occasionsl volcano	Actor
10.	this natrual background	Identified : Tk		
11.	industry	Goal		
12.	sulfur	Goal	humanity	Actor
13.	the element out of the earth in the form of coal, metal ores, and oil	Goal		
14.				
15.	with oxygen	Goal * Identifier	sulfur	Actor * Identified
16.	as sulfur dioxide gas	Identifier		
17.	Charlson	Sayer		
18.	some 90 million tons of sulfur	Goal	that, worldwide, industry	Actor
19.	"It	Carrier		
20.	he	Sayer		
21.	many of the atoms of this gas	Identified : Tk		
22.	These particles	Carrier		
23.	they	Actor		
24.	Only sulfates from the most powerful of volcanic eruptions	Actor		
25.	Those produced by human beings	Carrier		
26.	aerosols	Goal	The gentler winds of this part of the atmosphere	Actor
27.	they	Actor Identified : Tk		
28.	So Seattle air, [[...]]	Identified : Tk		
28.eb			which	Actor
29.	the aerosol concentration	Carrier		
30.	he	Sayer		
31.	The sky [[they know]]	Carrier		
32.	visibility	Carrier		
33.	you	Carrier		
34.	the sky	Carrier		
35.	Charlson	Sayer		
36.	you	Behaver		
37.	and the sky directly overhead	Carrier		
38.	it	Carrier		
39.	That white sky [[you see]]	Carrier		
40.	That	Actor		

BRIDGING: PARASOL 3

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	The prototype	Actor		
2.	It	Carrier		
3.	aerosol-laden air	Goal	a tiny pump	Actor
4.	a halogen movie-projector lamp	Existent		
5.	an electric light detector-- the technologically more sophisticated great-grandson , << 6 >> of those electric eyes tht open doors and set off alarms	Existent		
6.	Charlson	Sayer		
7.				
8.	how much light	Actor		
9.	[[how much light is being deflected by aerosols in the sample]].	Goal	Charlson	Actor
9.eb	how much light	Goal	aerosols	Actor
10.	the scattering efficiency	Goal	It	Actor
11.	Charlson	Sayer		
12.	you	Senser		
12.eb	per gram of material	Goal	a particle	Actor
13.	a complete measure of optical scattering,	Goal		
14.	Charlson	Sayer		
15.	you	Goal		
16.	the air,	Goal	you	Actor
17.	the particles	Goal		
18.				
19.	an amount of sulfate per cubic meter of air	Goal	That	Actor
20.	the ratio of the scattering to the concentration of material	Goal	you	Actor
21.	That	Identified / Token		
21.eb	you	Sayer		
21.eb	X amount of sufate in the air	Goal		
21.eb	Y amount of scattering	Existent		

BRIDGING: PARASOL 4

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Some of Charlson's findings about the parasol effect	Sayer		
2.	that it	Actor		
3.	some warming effects	Carrier	Sulfate aerosols	Attributor
4.	Charlson	Sayer		
5.	The reasons	Carrier		
6.	Because sulfates	Carrier		
7.	almost all manmade aerosols	Actor		
8.	90 percent of industrial activity	Carrier		
9.	almost no such "protection" from man-made sulfates.	Goal	the Southern Hemisphere	Actor
10.	the amount of light [scattered by haze]	Carrier		
11.	Charlson	Sayer		
12.	while the other	Goal	an umbrella of pollution,	Actor
13.	he	Sayer		
14.	seas	Actor		
15.	as the warmer southern waters	Actor		
16.	the Maldives, the low-lying island nation in the Indian Ocean.	Goal	sulfates	Actor
17.	But a rise in sea levels, <<18.>>	Carrier		
18.	Charlson	Sayer		
19.	Much more important, <<20.>>,	Identified		
20.	he	Sayer		
21.	That	Identified		
22.	"More frequent occurrence of drought	Carrier		
23.	Charlson	Sayer		
24.	"Or of violent storms.	Carrier		
25.	Or the opposite---less frequent storms.	Carrier		
26.	either chance	Beneficiary	I	Actor
27.	The thing [[people need to understand]]	Identified		
28.	we	Carrier		
'28.	more precipitation as rain and less as snow than normal	Range		
29.	And the snowpack	Carrier		
30.	So just because the balance of snow to rain	Actor		
31.	we	Carrier		
'31.	a drought here."	Range		

BRIDGING: ICY 1

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Antarctica's ice	Actor		
2.	Snow [[accumulating inland]]	Identified / Token		
2.eb				
3.				
4.				
4.eb	the continent	Goal		
5.	ice volumes in the Antarctic	Carrier		
6.	these shelves	Actor		
7.	a lot of ice,	Existent		
8.	the shelves	Actor		
9.	more ice	Actor		
10.	the sea floor close to the shore	Goal	The shelves	Actor
11.	they	Actor		
12.	sediments on the sea floor at a position [[known as the grounding line]].	Goal	they	Actor
12.eb				
13.	a complete sediment record for a particular period of Earth history,	Goal		
14.	a drill hole	Goal		
14.eb	that	Carrier		
15.	three submarine troughs more than 500 metres deep,	Goal	Domack's team	Actor
16.				
17.	One site	Carrier		
18.	which	Carrier		
19.	Each site	Sayer		
20.	mud and diatomaceous ooze	Actor		
21.	The ooze	Carrier		
21.eb	whose skeletons	Identified / Value	the bulk of this sediment	Identifier / Token
22.	They	Carrier		
23.	countless numbers of them	Actor		
24.	no covering of ice.	Existent		
25.	silty sands and gravels	Goal		
26.	these sediment types	Actor		
27.	The sediments	Identified / Token		
27.eb			by glaciers and ice sheets	Actor
27.eb	which	Identified / Token		
27.eb in eb	that	Actor		
28.	fewer diatoms	Existent		
29.	their growth	Goal	the combination of fresh water from the melted ice and low levels of sunlight below the shelf	Actor
30.	the oceans	Carrier		

BRIDGING: ICY 2

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	the growth of ice sheets	Goal		
2.	Miller and de Vernal	Senser		
3.	shells of calcium carbonate	Goal	These creatures	Actor
4.	the proportion of two isotopes of oxygen (oxygen-16 and oxygen-18) in the carbonate	Actor		
5.	the ice sheets	Actor		
6.				
7.	The link	Carrier		
8.	water	Actor		
9.	a higher level of the lighter isotope, oxygen-16,	Existent		
9.eb				
10.	Some of this water vapour	Goal		
11.	it	Actor		
12.				
13.	The ice	Carrier		
14.				
14.eb				
15				
16.	shells [[that are also especially rich in the heavier isotope]];	Goal		
16.eb				
17.	this tell-tale sign	Goal		
18.	they	Actor		
19.	a record of the balance of oxygen isotopes through time,	Goal	The shell of the forams	Actor
20.	which	Goal		
20.eb				

BRIDGING: ICY 3

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Similar signals	Carrier		
2.				
3.	short-term increases in the amount of snow at the poles:	Existent		
4.	snow lines in regions such as Arctic Canada, Baffin Island and Alaska	Actor		
5.	The Greenland ice sheet	Actor		
6.	ice	Goal	Some coastal and interior sites in Antarctica	Actor
7.				
8.	But today's climate	Sayer		
9.	that the melting of ice	Actor		
10.	glaciers in most mountain chains	Actor		
11.				
11.eb	that	Actor		
12.	some ice shelves on the Antarctic Peninsula	Actor		
13.	fears [[for the long-term stability of the West Antarctic ice sheet]].	Goal		
14.	This confusing, contradictory behaviour also	Identified / Token		
15.	Domack	Sayer		
16.	glaciers on the Antarctic Peninsula ...	Actor		
16.eb	ice sheets	Actor		
17.				
18.	The most likely explanation	Identified / Token		
19.	more water	Actor		
20.				
21.				
22.	this	Actor		
23.	the feedback processes [[that starve ice sheets, such as the extra melting during hotter summers]],	Carrier		
23.eb	ice sheets,	Goal		
23.eb	the effect of air circulation	Goal		
24.	The key factor in the growth of ice sheets	Identified /Token		
24.eb				
24.eb	snow	Goal		
24.eb				
25.	Miller and de Vernal	Senser		
26.	that a change to warmer, wetter winters alternating with cooler, dryer summers,	Carrier		
27.	Domack and his colleagues	Sayer		
28.	other climatic factors [[that affect the preservation of snow]].	Existent		
28.eb	the preservation of snow	Goal		
29.	They	Senser		
30.	that katabatic winds on ice sheets	Identified /Token		
31.	These winds	Actor		
32.	air [[cooled on high ground]]	Carrier		
32.eb				
32.eb				
33.	they	Actor		
34.	fallen snow	Goal	they	Actor
35.	katabatic winds	Actor		
36.				
37.	the world	Carrier		
38.	the drop in temperature with height	Actor		
39.	the strength of katabatic winds	Actor		
40.	more snow	Actor		

BRIDGING: HEAT 1

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Atmospheric scientists	Senser		
2.	broad historical cycles of global warming and cooling;	Existent		
3.	most experts	Senser		
4.	the earth surface	Actor		
5.	the last ice age	Carrier		
6.	it	Actor		
7.	these climatic cycles	Goal	by man	Actor
8.	Stephen Schneider, of the National Center for Atmospheric Research in Boulder:	Sayer		
9.	the earth's surface	Goal	"Humans	Actor
10.	the atmosphere	Goal		
10.eb	we	Carrier		
10.eb in eb	our climate	Goal		
11.	[[What is new]]	Identifier	the potential irreversibility of the changes [[that are now]] taking place]]."	Identifier
11.eb	What	Carrier		
11.eb				

BRIDGING: HEAT 2

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Potentially more damaging than ozone depletion, and far harder to control,	Identified	the greenhouse effect,	Identifier
2.			by carbon dioxide (CO2)	Actor
3.	The effect of CO2 in the atmosphere	Carrier		
4.	the warming rays of the sun	Actor	it	Initiator
5.	excess heat	Actor		
6.	a global warming trend [[...]].	Goal	man-made contributions to the greenhouse effect, mainly CO2 [[...]],	Actor
6.eb			by the burning of fossil fuel	Actor
6.eb	average temperatures	Goal		
6.eb in eb	the end of the ice age	Identified		
7.	the ecological face of North America".	Goal	that change,	Actor
8.	Schneider,	Sayer		

BRIDGING: HEAT 3

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	the arena [[.....]]	Identified		
1.eb	such projected climatic warming	Goal		
1.eb	the earth	Goal		
2.	it (the atmosphere)	Carrier		
3.	the earth	Carrier		
4.	the atmosphere	Carrier		
5.	the bottom layer of the peel, the troposphere	Identified		
6.	it	Carrier		
7.	air warmed by the earth's surface	Actor		
8.	colder air	Actor		
9.	it (air)	Goal		
10.	the troposphere	Actor		
11.	a permanent air flow	Actor		
12.	prevailing winds [...]	Goal	these swirling air masses	Actor
12.eb	weather	Goal		
13.			by the rotation of the earth	Actor
14.	the spread of pollutants	Goal		
15.	the stratosphere	Carrier		
16.	rising air [[.....]]	Carrier		
16.eb				
17.	Ozone	Identified		
17.eb				
18.	it	Goal		
19.	ordinary oxygen molecules	Goal	solar ultra violet rays	Actor
20.	the oxygen molecule	Goal	this radiation	Actor
21.	some of the free oxygen atoms	Identified		
22.	a property [...]	Goal	the configuration	Actor
22.eb	two-atom oxygen	Carrier		
22.eb	ultraviolet light	Goal	it	Actor
23.	oxygen	Goal	ozone	Actor
24.				
25.	most of these harmful rays	Goal		
26.				
27.	the ozone	Goal	the energy of absorbed radiation	Actor
28.	warm layers	Attribute		
28.eb				
29.	ozone molecules	Goal		
30.	they (ozone molecules)	Goal	any of a number of chemical processes	Actor
31.	regular injections of nitrogen bearing compounds ...	Goal		
32.				
33.	the gas	Actor		
34.			the tramendous upward push of tropical storms	Actor
35.	it	Actor		
36.				
37.	nitrous oxide	Carrier		
38.	a recent National Academy of Sciences report	Senser		

BRIDGING: HEAT 3 (cont.)

39.	it	Actor		
40.	N_2O	Carrier		
40.eb	it	Goal	by the same ultraviolet radiation	Actor
40.eb in eb	ozone	Goal		
41.			the resulting fragments– called radicals–	Actor
42.	more ozone molecules	Goal		
43.	another ozone killer	Carrier		
43.eb			microbes	Actor
44.	the process of ozone production and destruction	Carrier		
45.	a non-toxic inert gas	Goal	a group of chemists at General Motors	Actor
45.eb				
46.	similar compounds	Goal	manufacturers	Actor

BRIDGING: HEAT 4

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	CFCs	Carrier		
2.	they	Actor		
3.			the result	Identified
4.	ozone	Goal		
5.	chlorine monoxide (ClO) and O_2	Idr/Value		
6.	the ClO	Actor		
7.				
8.	the chain	Actor		
9.	100000 molecules of ozone	Goal		
9.eb			you	Actor
10.	Rowland	Sayer		

BRIDGING: HEAT 5

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.			the existence of an ozone hole	Identified
2.				
3.				
4.	the notion	Existent		
5.	Dan Albriton...	Sayer		
6.	an interruption in the movement of air from the tropics	Carrier		
7.	most ozone	Goal		
8.			another theory	Token
9.	more ozone-destroying nitrogen radicals	Goal		
10.			sunlight	Actor

BRIDGING: HEAT6

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Scientists	Carrier		
2.	the hole	Carrier		
3.	the depletion	Carrier		
4.	the peculiar nature of Antarctic weather.	Goal	It	Actor
5.	the stratosphere over the region	Goal	by the strong winds [...]	Actor
5.eb			that	Actor
6.				
7.	Cicerone:	Sayer		
8.	[[Looking down at the South Pole]]	Carrier		
8.eb				
8.eb				
8.eb	fluid	Actor		
9.	It	Carrier		
10.	All kinds of mischief	Actor		
11.				
12.	Rowland	Sayer		
13.	you	Carrier		
14.	most of the water	Actor		
15.	the temperature	Carrier		
16.	the rest	Goal	you	Actor
17.			ice	Identified
18.	surfaces	Goal	it	Actor
18.eb				
19.	molecules	Actor		
20.	one another	Goal	some	
21.	the reactions considerably.	Goal		
21.eb	a surface [...]	Goal		
21.eb in eb	[for the molecules]	Actor		

BRIDGING: HEAT 7

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.				
2.	it (to tell whether unusual global warming has indeed begun)	Carrier		
3.	the greenhouse effect	Carrier		
4.	"the earth	Carrier		
5.	«Climate Modeler Jeff Kiehl,	Sayer		
6.	It	Identified		
6.eb				
7.	the sun's energy	Goal	gases like CO_2	
8.	the earth's mean temperature	Carrier		

BRIDGING: HEAT 8

No.	MEDIUM	PARTICIPANT IN TRANSITIVITY	AGENT	PARTICIPANT IN TRANSITIVITY
1.	Such changes	Carrier		
2.	Climatologists	Senser		
3.				
4.	the greenhouse effect	Carrier		
5.	"climate	Carrier		
6.	«Roger Revelle,	Sayer		
7.	the changes seen so far	Carrier		
7. eb	[we	Senser		
8.	the theory	Goal	The absence of a clear-cut signal,	Actor
9.	Scientists	Senser		
10.	which	Carrier		
11.	ourselves to a climatic warming ...	Goal	"we'	Actor
12.	« V.Ramanathan,	Sayer		
13.	we	Senser		
14.	This extra heat, « », « »	Goal		
15.				
16.	«he	Sayer		
17.	it	Goal	an event like a big volcanic eruption	Actor
18.	Ramanathan:	Sayer		
19.	it (to stop the heating that had already occured)	Carrier		
19.eb	we	Senser		
19.eb.	our theory	Carrier		
20.	Schneider	Senser		
20.eb				
21.	he:	Sayer		
22.	"The greenhouse effect	Carrier		
23.	"It	Carrier		
24.	One of the most fundamental elements of the Rube Goldberg machine	Identified		
25.	The swings, << ... >> its tilt and the shape of its orbit around the sun,	Carrier		
26.	long-term variation in the wobbling of the earth's axis, »	Goal	« which	Actor
27.			they	Actor
28.	how much solar energy the earth	Goal		
29.	the earth's periodic major ice ages every 100,000 years or so, as well as shorter-term cold spells	Goal		
30.	Milankovitch cycles	Carrier		
31.	veils of dust [...] ...]	Goal	Volcanoes, for example,	Actor
31.eb				
31.eb				
31.eb	the planet	Goal		
32.	sunlight,	Goal	Deserts, with their near white sands, also	Actor
33.			the polar ice caps.	Actor
34.	Tropical rain forests, however,	Carrier		
35.	solar radiation;	Goal	their dark green foliage, like the dark blue of the ocean,	Actor
36.	the planet	Goal	both (tropical rain forest, and their dark green foliage)	Actor
37.	Clouds, «...»	Identified		

BRIDGING : HEAT 8 (cont.)

38.	about half the earth's surface at any given time »	Goal	« which	Actor
39.	James Coakley	Sayer		
40.	the atmosphere	Goal	you	Actor
41.	more water	Goal		
42.	clouds	Actor		
43.	But how clouds	Actor		
44.	We	Senser		
45.	" Water vapor, for examper,	Identified		
46.	solar energy	Goal	the white-grey surfaces of clouds	Actor
47.	Which effect	Actor		
48.	Answer	Identified		
49.	it	Carrier		
50.	60% of incoming solar rays.	Goal	The bright, low-level stratocumulus clouds	Actor
51.	solar heat	Goal	long, thin monsoon clouds	Actor
52.	infrared radiation	Goal		
53.	Another contributor to climatic change	Identified		
54.	it	Identified		
54.eb	the balance	Goal	that	Actor
55.	many of its effects	Carrier		
56.	and as such	Carrier		
57.	enormous amounts of gas	Goal	Termites, for example,	Actor
58.	woody vegetation:	Goal	as they	Actor
59.	five liters of methane	Goal	a single termite mound	Actor
60.	The methane	Actor		
61.	ozone	Goal	it (methane)	Actor
62.				
63.	"Termites," «...»	Carrier		
64.	«Environmental Chemist Patlrick Zimmerman,	Sayer		
65.	the biosphere	Carrier		
66.	when humans	Carrier		
67.	the Amazon rain forest, «... »	Goal		
68.	«which	Actor		
69.	as the region	Goal		
70.	an additional 20%	Goal		
71.	When the downed trees	Goal		
72.				
73.	CO2 and other greenhouse gases	Goal		
74.	the world	Carrier	The same kind of deforestation in Africa, Indonesia and the Philippines, « ... »	Actor
75.	experts »,	Sayer		