

Projection from nuclear Scope [Fox (2013), Sudo et. al. (2012)]

1. Projection from the Nuclear Scope – competing claims about the data

- (1) Some student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car
- (2) No student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car
- (3) Every student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car

(4) Competing Empirical Claims:

Universal Projection (Schlenker 2008, Charlow 2009): A quantificational sentence of the form $Q(A)\lambda xB(x)_{p(x)}$ presupposes $\forall x(A(x) \rightarrow p(x))$

Existential Projection (Beaver 1992): A quantificational sentence of the form $Q(A)\lambda xB(x)_{p(x)}$ presupposes $\exists x(A(x) \wedge p(x))$

Nuanced Projection (Chierchia, Peters, George, Chemla): A quantificational sentence of the form $Q(A)\lambda xB(x)_{p(x)}$ presupposes different things depending on the identity of Q .

Question: Why is there so much controversy (why is the data messy)?

Claim: SK Presuppositions can provide the basis for an answer. As we will see:

- (a) Semantic Presuppositions are different for different quantifiers. But
- (b) Semantic Presuppositions are challenging to accommodate minimally (suffer from a generalization of the proviso-problem), something that speakers might respond to in different ways:
 - 1. Presupposition Cancellation (“local accommodation”), at various scope positions, which eliminates the proviso-problem.
 - 2. Non-minimal Accommodation

2. Strong Kleene Predictions (One version of Nuanced Projection)

(5) Stalnaker’s Bridge Principle:

A sentence S is assertable given a context set C only if

$\forall w \in C$ [the denotation of S in w is either 0 or 1].

(6) Trivalent denotation of the nuclear scope in (1)a,b,c:

$$\lambda x. \begin{cases} 1 & \text{if } x \text{ has a (unique) car and } x \text{ drives it to school} \\ 0 & \text{if } x \text{ has a (unique) car and } x \text{ doesn't drive it to school} \\ \# & \text{if } x \text{ has no car (or more than one car)} \end{cases}$$

(7) Strong Kleene [where $\#$ is understood as an *unknown* bivalent truth value]:

The denotation of S in w is

- (a) 1 if its denotation (in a bivalent system) would be 1 for any resolution of the unknown values [under every bivalent correction (total extension) of sub-constituents].
- (b) 0 if its denotation would be 0 under every bivalent correction of sub-constituents.
- (c) $\#$ if neither (a) nor (b) hold

(8) a function $g:X \rightarrow \{0,1\}$ is a *bivalent correction* of a function $f:X \rightarrow \{0,1,\#\}$ if $\forall x[(f(x)=0 \vee f(x)=1) \rightarrow g(x)=f(x)]$ (if g is an extension when $\#$ is understood as *undefined*).

(1)' Some student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car

Presupposes:

Either $[\text{Some student has a car and drives it to school}]$ or
 $[\text{Every student has a car (and no student drives his car to school)}]$.

$(*[p \vee q] \Leftrightarrow [p \vee (q \wedge \neg p)])^*$

(2)' No student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car

Presupposes:

Either $[\text{Every student has a car (and no student drives his car to school)}]$ or
 $[\text{Some student has a car and drives it to school}]$

(3)' Every student $[x \text{ drives } x\text{'s car to school}]_x$ has a (unique) car

Presupposes:

Either $[\text{Every student has a car (and drives it to school)}]$ or
 $[\text{Some student has a car and doesn't drive it to school}]$.

3. Proviso Problem – Reminder

(9) a. If John is a scuba diver, he'll bring his wetsuit.

(Predictions of SK projection appear to be correct.)

b. If John is a scuba diver, his car has a wetsuit in it.

(Predictions of SK projection appear to be incorrect.)

(10) **Other cases like (9)a where predicted presupposition seems correct:**

(a) If John is a scuba diver, he'll bring his wetsuit.

(b) Either John is not a scuba diver or he will bring his wetsuit.

(c) John is a scuba diver and he'll bring his wetsuit.

Predicted presupposition:

Either John is not a scuba diver or John has a wetsuit

$\neg SD$ or WS (equivalently ' $SD \rightarrow WS$ ')

Crucial Property: It is natural for the disjunction to be part of the CG without one of the disjuncts being part of the CG – minimal accommodation leads to a reasonable C.

Four scenarios to consider:

Scenario 1: The first disjunct $\neg SD$ is part of the common ground, C, at the point of utterance.

Not a possibility: In such a context the sentence is not assertable for Stalnakerian reasons (it is a contextual tautology).

Scenario 2: The second disjunct WS is part of C at the point of utterance. **Possible, though perhaps not very probable:** maybe it follows from most common ground that only scuba divers own wetsuits. So if WS is part of C, probably SD is. But then an

utterance of a disjunction would be quite odd, as one of the disjuncts is known to be false.¹

Scenario 3: The disjunction is part of C at the point of utterance, yet neither disjunct is. This is a realistic scenario.

Scenario 4: The disjunction is not part of C at the point of utterance. Here accommodation is required. The “minimal” accommodation $\neg SD$ or WS leads to a plausible information state.

Conclusion: There are scenarios where $\neg SD$ or WS ends up being part of the common ground without WS being part of the common ground. Hence WS is not perceived as an inference.

(11) Like (9)b where predicted presupposition seems incorrect (at least at first site):

Either John is not a scuba diver or his car has a wetsuit in it.

Predicted presupposition:

Either John is not a scuba diver or John has a car

$\neg SD$ or Car (equivalently ' $SD \rightarrow \text{Car}$ ')

Attested Inference: Car

Crucial Property: it is not natural for the disjunction to be part of the CG without one of the disjuncts being part of the CG – this requires non-minimal accommodation (which I will call *pragmatic strengthening*).

More specifically, **four scenarios to consider:**

Scenario 1: The first disjunct $\neg SD$ is part of the common ground, C, at the point of utterance. **Not a possibility:** the sentence is not assertable for Stalnakerian reasons (it is a contextual tautology).

Scenario 2: The second disjunct *Car* is part of C at the point of utterance. This could be a reasonable context, and one in which the sentence is assertable.

Scenario 3: The disjunction is part of C at the point of utterance, yet neither disjunct is. **Very implausible:** suggests a connection between being a scuba diver and having a car.

Scenario 4: The disjunction is not part of C at the point of utterance. Here accommodation is required. The “minimal” accommodation $\neg SD$ or *Car* leads to an implausible information state (one might even wonder whether there is a minimal accommodation)². We have to search for alternative information states (hence Pragmatic Strengthening).

Two strengthenings that suggest themselves corresponds to the two disjuncts $\neg SD$ and *Car*: $\neg SD$ is not an available accommodation (Scenario 1). We are left with *Car*.

¹ As Soames pointed out, this is not a crucial property of cases where weak inferences are observed: *Either she has no disease with detectable symptoms or her illness will be evident to the doctor, If he is a general in the US army, he*

² i.e. whether adding the disjunction to the common ground would require belief revision, revising the assumption that there is no law connecting the two disjuncts

Conclusion: In all scenarios, the second disjunct ends up being part of the common ground and is hence perceived as an inference of the sentence.

(12)**Proviso Problem:** We will say that a Context C and a sentence S with presupposition p (S_p) *suffer from Proviso* if C does not entail p yet $C \cap p$ is too weak to be a reasonable information state (by which I mean that it is not a reasonable information state yet has subsets which are reasonable information states).

(13)**Presupposition Strengthening:** When C and S_p suffer from proviso, sometimes speaker and hearer manage to figure out that a non-minimal accommodation is intended. I will sometimes call situations of this sort situation also cases of *presupposition strengthening*.

Look Ahead: I will claim that:

- a. In quantificational contexts, the presupposition delivered by SK suffers from proviso.
- b. The quantificational case is special in that there are two possible responses to this predicament: (i) presupposition strengthening and (ii) presupposition cancelation.
- c. This is the source of what on the surface are just messy judgments, but end up having more structure than they appear to on first site.

4. Chemla's Experimental Evidence for Nuanced Projection

(14) At least one of these 10 students [x drives x's car to school].
Leads only to an existential inference

(15) None of these 10 students [x drives x's car to school].
Leads to a universal inference
(or at least people report something that can be interpreted as a universal inference more often)

These experimental results conformed to my own judgments when I began thinking about the topic.

However, it soon became clear to me that in addition to the variation among quantifiers that emerges from Chemla's experiment, there is quite a bit of variation among speakers.

It might, therefore, be important to entertain hypotheses about the possible sources of variation, with the hope that these would allow us to examine things systematically.

Look ahead (again): My hypothesis will be that different speakers have different strategies to deal with the proviso problem that comes about from SK presuppositions.

Starting Point (which we will go over in detail): Chemla's observation is predicted by SK if (some) speakers can collapse assertion and presupposition in the relevant experimental setup.

(16) **Accommodation operator (Beaver)**

$$\llbracket A \rrbracket = \lambda p. \begin{cases} 1 & \text{if } p=1 \\ 0 & \text{if } p \neq 1 \end{cases}$$

A silent *A* operator is a possible theory of the phenomenon of cancellation which we discussed (in the context of Gazdar's theory)

Reminder of the need for presupposition cancellation:

(17) *Soams's Difficult Disjunction*

Mary looks very irritable. Here is what I think.

She either just started smoking or just stopped smoking.

To simplify discussion, consider the less natural:

Mary either [_{STARTED} *started smoking at 5 PM*] *or* [_{STOPPED} *stopped smoking at 5 PM*].

(17) is expected by to presuppose *at least* the conjunction of the following:

(a) STARTED AT 5 PM or Smoked before 5 pm and

(b) STOPPED AT 5 PM or didn't smoke before 5 pm

Let *C* be a context-set that satisfies Stalnaker's bridge principle and let $w \in C$. It is easy to see that (17) is true for every $w \in C$ and therefore should not be able to convey any new information, contrary to fact.

If in *w* Mary smoked before 5 pm, then by (b), it follows that Mary stopped smoking, and (17) is true.

If in *w* Mary didn't smoke before 5 pm, then by (a), it follows that Mary started smoking, and (17) is true.

Solution: (17) is parsed with an *A* operator in both disjuncts.

Observation (as we will see): If (some) speakers can apply *A* globally to the relevant quantificational sentences, we would get the contrast between *some* and *no* noted by Chemla.

But still: Judgments are not very clear (or at least not uniform) and we would want to know why.

Also: When we discussed presupposition cancellation, we claimed that it needs to be motivated (to avoid some anomaly). What could be the anomaly in the case of quantificational sentences?

5. More on the SK predictions

Note: The formal presuppositions in (1)-(3)' do not make direct predictions for the inferences we draw from sentences. These predictions depend on a theory of accommodation.

- (18) QP_1 [x drives x's car to school]_{x has a (unique) car}
Presupposes:
Either [QP₂ has a car and does (not) drive it to school] or
[Every student has a car] (where QP₂ can, though need not, be identical to QP₁)
- Equivalently:
 $\neg$ [QP₂ has a car and does (not) drive it to school] $\rightarrow$
[Every student has a car]

Believing this disjunction without believing one of the disjuncts is odd. It suggests that there is a connection between the two (if one is false, the other is true). So for any C that does not already satisfy the presupposition a sentence such as (18) will *suffer from proviso*.

Proposal we will make: Given this accommodation challenge speakers might decide to apply *A*.

5. SK plus Global Application of *A*

5.1. Indicative *some*

- (1)' Some student [x drives x's car to school]_{x has a (unique) car}
Presupposes:
Either [Some student has a car and drives it to school] or
[Every student has a car]

It is odd for a speaker to believe the disjunction without believing one of the disjuncts.

Four scenarios to consider:

- Scenario 1: The first disjunct *some student has a car and drives it to school* is part of the common ground, C, at the point of utterance. This could be a reasonable context, but probably one in which the sentence is not assertable for Stalnakerian reasons (it is a contextual tautology).
- Scenario 2: The second disjunct *every student has a car* is part of C at the point of utterance. This could be a reasonable context, and one in which the sentence is assertable.
- Scenario 3: The disjunction is part of C at the point of utterance, yet neither disjunct is. This is an unrealistic scenario.
- Scenario 4: The disjunction is not part of C at the point of utterance. Here accommodation is required. We might assume that the starting point is minimal accommodation leading to the C from Scenario 3, i.e. an unrealistic C. We've seen a similar situation in our discussion of the Proviso Problem and we might consider non-minimal accommodation (e.g. updating C with the second disjuncts).

But lets assume that there is another option: A can apply at the matrix level. This would lead to a simple update of the context by the proposition that some student has a car and drives it to school.

With Global *A*: there is a scenario (scenario 4) in which the result of assertion is a context which does not entail the universal statement (the second disjunct). Hence, speakers do not (always) report a universal inference.

Question: Why can *A* apply?

We've seen that there has to be a process that cancels presupposition, which we've encoded with silent *A*. This process normally applies very selectively (requires special motivation, Gazdar, Heim, i.a.).

Proposal in Fox (2013). The *A* operator can be inserted if it resolves a Proviso problem.

Can *A* apply whenever minimal accommodation leads to an unrealistic information state?
Proposal to evaluate: only if the result of assertion is a reasonable information state.

(19) **Local Accommodation in Response to Proviso (preliminary version):** Let *S* be a syntactic structure with semantic presupposition *p*. *S* can be modified by an *A* operator yielding a structure *A*(*S*), if *S* is uttered against a context-set *C* such that $\langle C, S \rangle$ suffers from Proviso and *C* updated with *A*(*S*) is a reasonable information state for both speaker and addressee.

$\langle C, S_p \rangle$ suffers from Proviso if $C \cap p$ is not a reasonable information state.

5.2. Indicative *no*

(2)' No student [*x* drives *x*'s car to school]_{*x* has a (unique) car}
Presupposes:
Either [Some student has a car and drives it to school] or
[Every student has a car]

It is very odd for a speaker to believe the disjunction without believing one of these disjuncts.

Four scenarios to consider:

- Scenario 1: The first disjunct *some student has a car and drives it to school* is part of *C* at the point of utterance. This could be a reasonable context, but probably one in which the sentence is not assertable for Stalnakerian reasons (it is a contextual contradiction).
- Scenario 2: The second disjunct *every student has a car* is part of *C* at the point of utterance. This could be a reasonable context, and one in which the sentence is assertable.
- Scenario 3: The disjunction is part of *C* at the point of utterance, yet neither disjunct is. This is an unrealistic Scenario.
- Scenario 4: The disjunction is not part of *C* at the point of utterance. Here accommodation is required. We might assume that the starting point is minimal accommodation leading to the *C* from Scenario 3, i.e. an unrealistic *C*. We've seen a similar

situation in our discussion of the Proviso Problem and we might consider non-minimal accommodation (e.g. updating C with the second disjuncts).

But (19) allows A to apply at the matrix level. This leads to an update of the context by the proposition that every student has a car and no student drives it to school.

Even with Global A: every scenario in which the sentence is asserted results in a context that entails the universal statement (the second conjunct). Hence, speakers should report a universal inference.

5.3. Indicative *every*

- (3)' Every student [x drives x's car to school]_x has a (unique) car
Presupposes:
Either [Some student has a car and doesn't drive it to school] or
[Every student has a car]

Again, it is odd for a speaker to believe the disjunction without believing one of these disjuncts.

Four scenarios to consider:

- Scenario 1: The first disjunct *some student has a car and doesn't drive it to school* is part of C at the point of utterance. This could be a reasonable context, but probably one in which the sentence is not assertable for Stalnakerian reasons (it is a contextual contradiction).
- Scenario 2: The second disjunct *every student has a car* is part of C at the point of utterance. This could be a reasonable context, and one in which the sentence is assertable.
- Scenario 3: The disjunction is part of C at the point of utterance, yet neither disjunct is. This is an unrealistic scenario.
- Scenario 4: The disjunction is not part of C at the point of utterance. Here non-minimal accommodation would be required. By assumption, this can be avoided by global A leading to the bivalent proposition that every student has a car and drives it to school.

Conclusion: Under every scenario in which the sentence is acceptable, the resulting context entails the universal statement (the second conjunct). Hence, speakers should report a universal inference.

5.4. Negated Universals

The following (based on Beaver) suggests that a universal presupposition might be wrong for universal statements:

- (20) A: There are many students around, hence many cars.
B: No, half of the students don't have a car.

Furthermore, some don't drive their car to school.
Furthermore, not every student drives her car to school.
Furthermore, every student leaves her car at home

5.5. Yes-no Questions

(21) Does one of these 10 students [x drive x's car to school].

Presupposes:

Either [Some student has a car and drives it to school] or
[Every student has a car]

Scenario 1: The first disjunct *some student has a car and drives it to school* is part of C at the point of utterance. This could be a reasonable context, but probably one in which the question is not assertable (the answer is already part of the common ground).

Scenario 2: The second disjunct *every student has a car* is part of C at the point of utterance. This could be a reasonable context, and one in which the question is assertable.

Scenario 3: The disjunction is part of C at the point of utterance, yet neither disjunct is. This is an unrealistic Scenario.

Scenario 4: The disjunction is not part of C at the point of utterance. Here accommodation would be required. Minimal Accommodation (leading to the context in Scenario 3) would be odd. But in this particular case (a question not an assertion), applying *A* globally is not an option (type-mismatch).

So either we are already in scenario 2 or some non-minimal accommodation is required. In either event it is reasonable to assume that we end up with the universal inference.³

Conclusion: Under every scenario in which the sentence is acceptable, the resulting context entails the universal statement (the second disjunct). Hence, speakers will report a universal inference.

Are these predictions correct?

They conformed to my judgments when I started thinking about these problems. But there seems to be speaker variation which suggests that this can't be the whole story. Some speakers don't seem to ever get a universal inference. Still some speakers might feel sympathetic to these type of judgments.

Important to note: we've assumed that when *A* applies, it applies globally. But this was just a simplifying assumption made to get us going. If we modify (19) in the following way, we will make more nuanced predictions.

(22) **Local Accommodation in Response to Proviso (final version):** Let S be a syntactic structure with semantic presupposition p. S can be modified by an A operator in some scope position yielding a structure S', if S is uttered against a context-set C such that $\langle C,$

³ There are well known challenges for this line of reasoning that I think are more acute within the SK setup. I will bring them up later and attempt to address them based on a proposal in Schlenker (2010).

S> suffers from Proviso and C updated with S' is a reasonable information state for both speaker and addressee.

Specifically, introducing *A* at the top of the nuclear scope eliminates the universal inference for *some* and *no* and for the yes/no question.

6. Sudo et. al.

- (2) a. Some of these three triangles have the same color as both of the circles in their own cell
b. None of these three circles have the same color as both of the squares in their own cell
c. Do any of these three squares have the same color as both of the triangles in their own cell?

Fig. 1. Overt pictures in the target items.

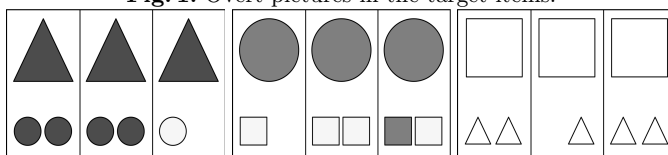


Table 1. Results of the survey.

	'Some'	'None'	'?any'	# of Participants		'Some'	'None'	'?any'	# of Participants
1	∃	∃	∃	60	5	∀	∃	∃	2
2	∃	∃	∀	49	6	∀	∃	∀	1
3	∃	∀	∃	21	7	∀	∀	∃	2
4	∃	∀	∀	47	8	∀	∀	∀	19

∃-Revealed picture selected

∀-Covered picture selected

More Data (expansion on fn 5)

Original (n=201)

	some	none	?any	
1.	Exist	Exist	Exist	60
2.	Exist	Exist	Univ	49
3.	Exist	Univ	Exist	21
4.	Exist	Univ	Univ	47
5.	Univ	Exist	Exist	2
6.	Univ	Exist	Univ	1
7.	Univ	Univ	Exist	2
8.	Univ	Univ	Univ	19

Only subjects who answered all three control items 'correctly' (i.e. chose the overt pictures) (n=142)

	some	none	?any	
1.	Exist	Exist	Exist	51
2.	Exist	Exist	Univ	36
3.	Exist	Univ	Exist	8
4.	Exist	Univ	Univ	28
5.	Univ	Exist	Exist	2
6.	Univ	Exist	Univ	0
7.	Univ	Univ	Exist	2
8.	Univ	Univ	Univ	15

Only those who answered the "none"-control 'correctly' (i.e. chose the overt picture) (n=158)

	some	none	?any	
1.	Exist	Exist	Exist	53
2.	Exist	Exist	Univ	43
3.	Exist	Univ	Exist	11
4.	Exist	Univ	Univ	30
5.	Univ	Exist	Exist	2
6.	Univ	Exist	Univ	0
7.	Univ	Univ	Exist	2
8.	Univ	Univ	Univ	17

7. Contexts where disjunctive presupposition (unstrengthened) is satisfied

Prediction (for relevant speakers): A yes/no question will reveal weaker presuppositions (than universal) if we eliminate the proviso problem by making it plausible to believe the disjunction without believing one of the disjuncts.

- (23) Did anyone of these gangsters acquire their fortune through investments in the tech industry?

Presupposition: if none of these gangsters acquired their fortune through investments in the tech industry, they all have a fortune.

Minimal accommodation not plausible.

- (24) Did anyone of these gangsters acquire their fortune by wiping out one of the others?

Presupposition: if none of these gangsters acquired their fortune by wiping out one of the others, they all have a fortune.

Minimal accommodation is plausible.

Confound (B. R., George p.c.): nominals can receive temporal interpretations independent of tense, Hence it is not clear that a universal presupposition will be wrong here.

Can be addressed by explicating the temporal interpretation of the nominal:

- (25) Did anyone of these gangsters acquire the fortune they brought to you last week by wiping out one of the others?

Presupposition: if no gangster acquired the fortune they brought to you last week by wiping out one of the others, they each brought a fortune to you last week.

8. Blocking Presupposition Cancellation (*A* insertion)

Charlow (2009) suggests that the presupposition triggered by *also* can't be locally accommodated (affected by *A*). If this is the case (and even if it is just a tendency), we predict to get clearer judgments.⁴

- (26) **Universal Presuppositions are Part of the Common Ground:**

Imagine the following rather stupid game. Four players are each handed a card, and what happens next depends on whether one of the players gets an ace.

First possibility: no player gets an ace → every player gets free Pizza at Bertucci and nothing else.

Second possibility: one player gets an ace → every player gets free Pizza at Bertucci and the player or players that get an ace get a million dollars in addition

⁴ The examples that follow are not from Charlow but are based on his hunch that certain triggers do not easily allow presupposition cancellation. For a challenge to Charlow's claim, see Sudo (2014).

The only reason to watch this stupid game is to find out if one of the four players will also get a million dollars.

(27) **Only Existential Presuppositions are Part of the Common Ground:**

Imagine the following rather stupid game. Four players are each handed a card, and what happens next depends on the identity of the strongest card

First possibility: the strongest card is not an ace → the player or players that get the strongest card get free Pizza from Bertucci and nothing beyond. No one else gets anything.

Second possibility: the strongest card is an ace → the player or players that get an ace get free Pizza from Bertucci and a million dollars. No one else gets anything.

#The only reason to watch this stupid game is to find out if one of the four players will also get a million dollars.

(28) **SK Presuppositions are Part of the Common Ground:**

Imagine the following rather stupid game. Four players are each handed a card, and what happens next depends on whether or not one of the players gets an ace.

First possibility: no one gets an ace → every player gets free Pizza from Bertucci (and nothing else).

Second possibility: someone gets an ace → the player or players that get an ace get free Pizza from Bertucci and a million dollars. No one else gets anything.

(?) The only reason to watch this stupid game is to find out if one of the four players will also get a million dollars.

(29) **TV game “diamonds are not enough”:** Every week, there are ten contestants and one million dollars to be spent on prizes for the contestants. As in many TV games there are all sorts of ways of scoring points – irrelevant for our issue.

Two possible outcomes

1. If everyone scores less than 1000 point, the million dollars will be used to purchase 10 diamonds (each for 100K) and each contestant will receive a diamond.
2. Otherwise, the 5 highest scoring contestants will each receive a (100K) diamond and those among them who received more than 1000 points will divide the remaining 500K.

We know that at least 5 of the ten contestants will get a diamond. But we don't know if some of the 10 contestants will also earn some money.

We know that at least 5 of the ten contestants will get a diamond. This weak I bet some of the 10 contestants will also earn some money.

- (30) **TV game “diamonds are not enough”**: Every week, there are ten contestants and one million dollars to be spent on prizes for the contestants. As in many TV games there are all sorts of ways of scoring points – irrelevant for our issue.

Two possible outcomes

1. If everyone scores less than 1000 point, the million dollars will be used to purchase 5 diamonds (each for 200K) to be divided among the 5 top scoring players.
2. Otherwise, the 3 highest scoring contestants will each receive a (200K) diamond and those among them who received more than 1000 points will divide the remaining 400K.

We know that at least 3 of the ten contestants will get a diamond. But we don't know if some of the 10 contestants will also earn some money.

We know that at least 3 of the ten contestants will get a diamond. But we don't know if some of the 10 contestants will also earn some money.