
# Does the accident-reconstruction expert's work measure up?

## Solis v. Southern California RTD *provides a checklist for the quality of accident-reconstruction work*

**By Albert G. Stoll, Jr.**

Do you have a case that you refer to over and over again; a legal opinion that you read and re-read as trial approaches? For me that case is *Luisa Solis v. Southern California Rapid Transit District* (1980) 105 Cal.App.3d 382. *Solis* is notable because it was tried to a defense verdict and overturned on appeal by Ned Good. Mr. Good is one of the original six lawyers that came together in Palm Springs in 1961 to found the Consumer Attorneys of California (CAOC) and was CAOC's seventh president in 1969.

Why is *Solis* so useful? Reading the case will provide you with a good mental checklist of the quality of your accident reconstruction work, and/or point out the flaws in the work of the defense accident reconstruction opinion. If you want an accident reconstruction expert excluded, *Solis* will give your trial judge an example of how it's done. It is also a reminder to trial judges that they can be overturned, for an abuse of discretion, if they do not carefully consider the foundation of the defense expert opinion.

On first glance, *Solis* looked like a clear liability left-turn case. A left-turning bus struck a woman crossing the street with a green light. Two eyewitnesses placed plaintiff in the crosswalk crossing with the green "walk" sign. Over plaintiff's objections, the trial judge allowed a defense accident reconstruction expert to give an opinion that the point of impact fell outside of the crosswalk. The jury returned a defense verdict on negligence and plaintiff appealed. On appeal the basis for the defense expert's opinion was found to be speculative and without adequate foundation. The trial judge's ruling allowing the expert to testify to his opinion was overturned and deemed prejudicial to the outcome. (*Solis* p. 348.)

### The law of expert opinion: Defeating speculation and conjecture

When confronting a "creative" defense accident reconstruction expert who ignores facts, focuses only on favorable defense evidence, and manufactures "facts" unsupported by the evidence, it's tempting to write a long motion in limine to exclude. My experience has been that the best motions to exclude unsupported expert witness opinions are short and to the point.

With disputed liability auto cases, *Solis* and *Sargon Enterprises, Inc. v. University of Southern California* (2012) 55 Cal.4th 747, provide much of the legal authority to set up a well-reasoned motion to exclude speculative expert opinion testimony.

*Sargon* reviewed the exclusion of an expert opinion about the future lost profits of a new business. In *Sargon* the trial judge excluded the opinion of an economist who gave the opinion that but for the contract breach, Sargon Enterprises, Inc. would have become a market leader within 10 years. Reviewing for an abuse of discretion, the California Supreme Court upheld the trial judge's decision to exclude the opinion because it was based on too many assumptions and on data taken from sources that were not "substantially similar" to the business in question.

In *Sargon* the trial judge gave the hypothetical of a Miss America contestant who suffered a breach of contract. As a result of the breach she was not able to compete in the Miss America Contest. The trial judge asked, "Could an expert testify that the contestant would have won the contest she was not able to compete in due to the defendant's breach of contract?" Could that same expert also give an opinion on the amount of future lost endorsements she would have obtained, basing that opinion on the amount of endorsement earnings other contestant winners have earned? This hypothetical was included in the Supreme Court's opinion, which held the trial judge's reasoning was not an abuse of discretion and let the exclusionary ruling stand.

The California Supreme Court reviewed both Evidence Code section 801 and 802 and wrote, "...the trial court acts as a gatekeeper to exclude expert opinion testimony that is (1) based on matter of a type on which an expert may not reasonably rely, (2) based on reasons unsupported by the material on which the expert relies, or (3) speculative. (*Sargon* p. 772.) *Sargon* cites to *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993) 509 U.S. 579 at p. 595 cautioning trial courts not to choose between competing expert opinions, but to solely focus on the principles and methodology used by the expert, not on the conclusions they generate. The trial judge must simply determine whether the matter relied on can provide a reasonable basis for the opinion or whether that opinion is based on a leap of logic or conjecture. (*Sargon* at p. 772.)

In low property damage automobile collisions *Sargon* supports the argument that the human crash studies relied upon by the defense accident reconstruction expert must be shown to be substantially similar to the real-life collision the plaintiff actually endured. *Sargon* agreed with the trial judge's determination that the data relied upon by lost profits expert


Skorheim was in no way analogous to the business it was being compared to. (*Sargon* at p. 776.) "Skorkheim considered Sargon to be comparable to the Big Six dental implant companies rather than the smaller ones that appear to have far more closely resembled it." (*Sargon* p. 777.)

## The facts of *Solis*: Left-turn bus vs. pedestrian collision

With the background of *Sargon* decided in 2012; let's now consider what we can learn from the 1980 decision in S*olis*.

On January 7, 1974 at approximately 4 p.m., during a heavy rain, plaintiff Luisa Solis was struck and injured by a left- turning bus in downtown Los Angeles. Ms. Solis was crossing 11th Street at its intersection with Wall Street; she was crossing the street during a heavy rain. At trial, the evidence was uncontradicted that Ms. Solis was crossing with the green light, which included a pedestrian "walk" sign. Two companions walking with Ms. Solis squarely placed her in the crosswalk at the time of impact. (*Solis* p. 384.)

The bus driver stated his traffic signal turned green, and he pulled a short distance out into the intersection and yielded to three or four cars. He did not see any pedestrians and started his left turn from 11th Street onto the one-way Wall Street, westbound. He testified he reached a top speed of 5 to 10 mph. Out of the corner of his eye he saw something moving fast toward the right front of his bus. He slammed on his brakes, heard a thud and saw plaintiff take a couple of steps backwards and fall to the ground. The bus driver did not know whether he struck plaintiff when she was inside the crosswalk or not. (*Solis* p. 386.)

Over Ned Good's objection, the trial court judge allowed defense accident reconstruction expert David Bruce Lent-Koop to give an opinion on the location of the point of impact. Mr. David Bruce Lent-Koop gave the opinion that the bus came to a stop 21 feet west of the crosswalk and therefore the point of impact with plaintiff was west of the crosswalk. The jury returned a defense verdict and Mr. Good appealed.

## The accident reconstructionist's work in *Solis*

Mr. Lent-Koop calculated a location for the point of impact based on scene photographs, the results of speed tests he conducted post accident, the perception and reaction time of the bus driver, and the coefficient of friction between the bus tires and the roadway. His ultimate opinion based on an assumed maximum speed of the bus, was that the bus came to a stop 21 feet west of the crosswalk, therefore the point of impact must have been outside of the crosswalk when plaintiff was struck.

The qualifications of Mr. Lent-Koop were not raised as an issue during the appeal. He had a bachelor's degree and a master's degree in engineering from UCLA specializing in transportation safety.

## The flaws in the accident reconstructionist's work

The *Solis* opinion sets forth the work done by Mr. Lent-Koop as he worked toward his opinion that the point of impact was outside of the crosswalk. Each step of the way, the court of appeal opinion points out flaws and assumptions in Mr. Lent-Koop's work.

> There is no evidence of measurements being taken at the scene to determine the exact distance from the crosswalk of the bus or of plaintiff 's body,

(*Solis* at 386.)

> Lent-Koop assumed that the photographs in evidence showed the places where the bus and plaintiff 's body came to rest after the accident.

(*Solis* at 387.)

> The assumed points of rest of the bus and of plaintiff 's body were key to the expert's opinion. However, '...after the actual impact the place the bus came to rest was still within the control of the driver to some extent....and the place plaintiff 's body came to rest was also to some extent controlled by her; there being evidence that she took a few steps backward before falling.'

(*Solis* at 390.)

Lent-Koop employed the same bus involved in the accident to conduct speed testing beginning at the start of the left turn movement. He used the bus driver involved in the accident to perform these speed tests. However, the bus driver testified that the bus used in the speed test experiments, "Was not capable of going as fast as on the day of the accident." (*Solis* at 389.)

Lent-Koop's speed testing experiment was done when the roadway was dry. However, it was raining at the time Ms. Solis was hit. (*Solis* at 390.)

Lent-Koop did not know the condition of the bus tires at the time of the accident. This may have an impact on the stopping distance. (*Solis* at 388.)

> Lent-Koop did not know the coefficient of friction of the wet street at the time of the collision, not having measured it. He used an assumed figure.

(*Solis* at 387.)

The conclusion as to the maximum speed attainable by the bus during the speed test experiment was based upon a visual reading of the speedometer, but there was no showing that the speedometer was accurate or that the difference between six miles per hour and seven miles per hour could accurately be read. (*Solis* at 389 and 390.)

Based on these factors, the court of appeal concluded that there was not an adequate foundation for Lent-Koop's opinion and wrote:

> Because of the relatively slow speed of the bus and the short distances involved in determining whether plaintiff was or was not within the crosswalk, small differences in the driver's assumed perception time and reaction time and the bus's braking time crucially affected the conclusion.

(*Solis* at 390.)

## Lessons learned from *Solis*

*Solis* provides lessons for plaintiff lawyers. Check your accident reconstruction


experts' work and ensure the basis of their opinion does not fall into similar traps as the excluded opinion in *Solis*.

Don't assume jurors will find liability in cases that appear to have strong liability facts. It's easy to be overconfident when a pedestrian with a green light is struck by a left-turning bus.

To the extent case economics allow, the earlier you can retain your accident-reconstruction expert the better. The court of appeal noted that Mr. Lent-Koop was first retained two years after the accident date.

Take steps to actually measure variables. If possible, obtain real data from the actual evidence in the case. Experts can obtain generic coefficient of friction data for a wet asphalt surface; however, you may be able to test the actual coefficient of friction of the asphalt in question in your case. The closer in time these measurements are taken, the more reliable the data.

Speed measurements should be taken with calibrated instruments that provide precise measurements. In *Solis* the expert relied on mile-per-hour data visually deciphered by an employee of the defendant from a dashboard speedometer.

Verify the accuracy of any relied upon speedometer before collecting speed data. Mr. Lent-Koop just assumed the dashboard speedometer was working correctly.

Be prepared to lay a foundation showing "substantial similarity" when the results of an experiment are relied upon. In *Solis* the bus from the accident was used in a post-accident speed test; however the bus driver testified at trial that there was a difference in the ability of the bus to accelerate on the day of the accident compared to the bus's lack of acceleration on the day of the speed test. (*Solis* p. 390; see also, *Culpepper v. Volkswagen of America, Inc.* (1973) 33 Cal.App.3d 510, 521.)

It's not enough to argue that leaps in logic just go to the expert opinion's weight and/or that unsupported assumptions can be pointed out on cross examination. Both *Solis* and *Sargon* are a reminder to experts, lawyers and trial judges that the trial judge is the gatekeeper and opinions that are based on speculation and conjecture are simply not relevant evidence and are therefore inadmissible at trial. (*Sargon* p. 770.)

## The trial court excluded plaintiff's rebuttal evidence

In footnote 2, the *Solis* opinion notes that plaintiff conducted "a somewhat similar experiment, videotaping other buses making the turn at the intersection," which was excluded by the trial court based on a finding that it lacked foundation as to the similarity of the bus involved. This ruling by the trial court was not analyzed by the Court of Appeal. The footnote makes the point that the exclusion of the expert rebuttal contributed to the prejudicial effect of the defendant's expert testimony.

## Time, position and visibility analysis applied to *Solis*

Here is another way to look at reconstructing the collision sequence in *Solis*. How did Ms. Solis get from a place of safety at the curb to the alleged area of impact without the bus driver seeing her until it was too late to stop safely? The bus driver's testimony was that "He saw out of the corner of his eye something moving fast toward the right front of the bus. A passenger on the defendant's bus saw one pedestrian cross the street and first saw Ms. Solis on the corner and then saw her move "fast towards the right front of the bus."

The first question for your accident reconstruction expert is, "How long did it take Ms. Solis to get from the sidewalk curb to the area of impact?" Adult pedestrians usually cover three to four feet per second while walking at a leisurely pace. Your expert witness can arrive at a walking speed based on case-specific evidence. In *Solis*, a bus company supervisor took photographs of where the bus came to rest. This photograph would have allowed an accident reconstruction expert to measure the distance from the curb to an area of impact within the crosswalk. The fact that Ms. Solis was crossing in the crosswalk was testified to by two eyewitnesses. Now your expert can solve for the time it took for Ms. Solis to walk from the sidewalk curb to the area of impact.

Second, what was the bus driver able to see during this window of time? The bus driver testified that when his light turned green he pulled up into the intersection a short distance and paused for three or four seconds waiting for three of four southbound cars to pass. He then started turning left and reached a speed of between 5 and 10 miles per hour.

First, the area of impact is the-zero-point for time and distance. Next, move back in timed intervals taking driver eye photographs from the perspective of the bus driver at various points along the path of travel. Photographs depicting the bus driver's view at 8, 6, 4 and 2 seconds prior to impact will help the jury discount the defendant driver post-accident excuses, "I did not see her" or "there was no time to react" or from *Solis*, "Out of the corner of his eye he saw something moving fast toward the right front of his bus."

## Computerized animation

Once you have a solid foundation for your time, position and visibility analysis, along with a series of driver eye photographs at points in time, consider the use of a computerized animation. The California Supreme Court's opinion in *People v. Duenas* (2012) 55 Cal.4th 1 affirmed the use of a computerized animation of a shooting that resulted in a first degree murder conviction. The purpose of your animation is to illustrate your expert's opinion testimony. Animations do not draw conclusions; they attempt to recreate a scene or process, thus they are treated like demonstrative aids. In other words, a computer animation is demonstrative evidence offered to help a jury understand expert testimony.


(See *Duenas*, *supra*, and *People v. Hood* (1997) 53 Cal.App.4th 965, 969.

San Rafael attorney Stephen Brady has excellent insight on the effective use of computerized animations in auto cases. Morgan C. Smith at Cogent Legal is also an excellent resource to help develop an animation for a disputed liability-automobile case.

## Conclusion

Accident reconstruction experts add significantly to the plaintiff's case costs. A simple work up can start at $3,000 dollars and quickly reach $10,000 with a moderate amount of work. That said, most disputed liability-auto cases benefit significantly if a jury is shown a step-by-step analysis of the accident, based on real evidence, sound accident reconstruction principles and provided with a demonstrative animation to pull it all together. When you do make the decision to hire an accident reconstruction expert, take the time to review *Solis* and *Sargon* and make sure your efforts result in an opinion that is both admissible and persuasive.


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*Al Stoll stands up for the rights of individuals in personal injury, employment law, elder rights, and product liability cases. In 2010 he helped found the Attorney Action Club, a network of San Francisco Bay Area lawyers that hosts monthly topical discussions on attorney work-life balance and law practice management. Outside of the law, he enjoys spending time with his wife and family. See* Profile: Al Stoll *in Plaintiff Magazine, May 2012 at plaintiffmagazine.com.*