

Interpersonal Intervention for Injury Prevention: Practical Evidence-Based Strategies for World-Class Safety

**E. Scott Geller, Ph.D.
Alumni Distinguished Professor, Virginia Tech
Senior Partner, Safety Performance Solutions**

Introduction

For almost 40 years the author and his students have conducted field studies to develop and evaluate intervention strategies to improve safety-related behaviors in industrial, community, and institutional settings. As a result, a number of evidence-based techniques have been identified to increase the occurrence of safe behavior and/or decrease the frequency of at-risk behavior. Most of these are interpersonal, requiring a safety leader or change agent to target a specific behavior of another person in order to decrease, increase, maintain, or support that behavior. All of these cost-effective intervention strategies can be applied on a large scale for substantial injury prevention, and all have been described in the research literature, along with objective data demonstrating their beneficial impact.

Over the years, the author has described these practical intervention methods in ASSE presentations; and in some cases, attendees have later applied a technique with remarkable success, as revealed in follow-up communication with the author. Never have all of these injury-prevention approaches been defined and illustrated in one presentation, which is the purpose of this document. However, before reviewing these interpersonal interventions for injury prevention, it's instructive to consider barriers that prevent the large-scale application and institutionalization of these safety-management procedures. In other words, given their demonstrated effectiveness and practicality, why haven't they been adopted and implemented throughout organizations and communities nationwide in order to help keep people safe?

The Lack of Courage

As with any program designed to change behavior, people could claim they lack the resources and/or time to implement the intervention. Moreover, they could doubt the effectiveness of the behavior-change technique and wonder whether the time to implement the interpersonal intervention is worth the effort. However, these excuses are irrelevant for the techniques described below, because they are straightforward and easy to accomplish with minimal effort. More importantly, empirical research (as cited below) has demonstrated the beneficial impact of these simple interpersonal approaches to promote safety and prevent harm to people.

Thus, the standard excuses for inaction cannot work here. So what is the barrier to large-scale implementation of simple-to-use interpersonal methods that clearly benefit everyone involved? The key word is “interpersonal”. Each intervention requires personal interaction with other people and it’s likely many lack the courage to be such a change agent. This paper defines the level of courage needed, and entertains ways to develop such courage in ourselves and others. In other words, this author addresses this critical question: What does it take for more people to become interpersonal change agents for occupational safety and health? We have effortless evidenced-based techniques to help people prevent harm to themselves and others, but too few people seem to have the courage to use them.

What is Courage?

The American Heritage Dictionary (1991) defines courage as “the state or quality of mind or spirit that enables one to face danger with self-possession, confidence, and resolution” (p. 333). This denotation is consistent with the two-page description of courage in Wikipedia (<http://en.wikipedia.org/wiki/courage>), except Wikipedia distinguishes between “physical courage” – when confronting physical pain, hardship, or threat of death, and “moral courage” – in the face of possible shame, embarrassment, or discouragement.

Leaders certainly need competence and commitment (Blanchard, Zigarmi, & Zigarmi, 1985) to be effective change agents. But, interpersonal intervention on behalf of safety also takes “moral courage”. A person could have both competence and commitment in a particular situation, but not be courageous. Consider these two authentic safety-related incidents – one dramatic and rare and the other temperate and common.

Responding to an Emergency

In the midst of a safety meeting, Joanne Dean – the Safety Director of a large construction firm in New Jersey – was notified of a horrendous incident. The operator of an industrial equipment truck with an attached auger was pulled into the auger by the weed mesh under the mulch on which he was standing. The worker had not been standing on the safety platform provided for this task. Without hesitation, Joanne ran to help the bloody victim whose body was severed in half. She assisted the on-site nurse with the AED (Automated External Defibrillator), covered the body parts with a blanket, and stayed at the scene until the local EMS (Emergency Medical Service) and coroner arrived.

It certainly took courage to step up and intervene in this horrible situation. It is likely Joanne’s competence as an emergency-response instructor and her commitment to safety contributed to her propensity to be courageous, but her bravery took more than these two leadership qualities. Indeed, the three safety professionals for the company that hired the construction firm did not intervene. Rather, they stood at a distance and watched Joanne and the other responders. I assume these experienced safety professionals have both competence and commitment for their job, but that day they lacked courage.

Responding to a Risky Condition

While waiting in the lobby of a Fortune-500 company, Bob Veazie – safety consultant and former culture-change agent for a Fortune-100 Company – noticed a bothersome at-risk behavior. A maintenance worker had climbed to the top of an eight-foot step-ladder to change a light bulb. Because the ladder was not tall enough for this job, the individual was standing with one foot on the top step of the ladder. A coworker was looking up and talking to the man on the ladder, but was not holding the ladder steady.

Imagining a serious injury from a fall to the hard marble floor of the lobby, Bob walked to the ladder and called up to the at-risk worker. Holding the bottom of the ladder, he requested the man to come down because “It doesn’t seem safe to stand on the top of that ladder.” Then he asked whether a taller ladder was available.

Bob showed *moral courage* by interacting with this at-risk stranger in the face of potential embarrassment, public humiliation, or an unpleasant confrontation. Bob’s competence and commitment as a safety trainer and scholar certainly contributed to his inclination to speak up in this situation, but competence and commitment were not sufficient for the courage he showed. In fact, Bob’s training partner who has extensive competence and intense commitment for safety saw the same at-risk behavior, but did not say or do anything about it.

How Can Courage Be Encouraged?

While courage reflects a human characteristic distinct from competence and commitment, these three qualities of leadership are interdependent in some respects. Specifically, individuals with greater competence and commitment in a given situation are more likely to demonstrate courage. Thus, one’s propensity to show courage under certain circumstances is increased whenever relevant competence or commitment is augmented.

Developing Competence

Behavior-focused training increases one’s competence at a particular task. This involves: a) describing and demonstrating a desirable behavior or skill set, b) giving specific behavior-based feedback during a participant’s role-playing of designed target behavior(s), c) practicing the desired behavior(s) with both corrective and supportive feedback, and d) implementing the new competency in real-world situations (Geller, 1996, 1998, 2001b). Subsequently, when learners have opportunities to teach the skill set to others, their perception of competence increases further, along with their personal commitment.

Developing Commitment

Simply put, commitment develops from recognizing the positive consequences gained and the negative consequences avoided when applying one’s competence. As detailed elsewhere (Geller, 1996, 2001b, 2005, 2006, 2007), motivation or commitment to do something is determined by the intrinsic and extrinsic consequences of a task, as well as one’s personal interpretation of those consequences. While many tasks are performed for expected soon, certain, and significant consequences, we use self-talk to avoid impulsive at-risk behavior and work for long-term goals.

Developing Courage

The moral courage of Joanne Dean and Bob Veazie was due to many factors, and suggests cultivating courage is more complex and less straightforward than developing competence and commitment. For example, Joanne Dean and Bob Veazie are extraverts. They both gain energy from interacting with people, and are naturally outgoing and inclined to communicate with others.

Another of the Big Five personality traits (cf. Geller, 2008; Geller & Weigand, 2005) that facilitated the courage of Bob and Joanne is conscientiousness. The author knows each of these individuals very well and it's obvious they each take their safety profession very seriously – on and off the job. Beyond personality *traits*, certain person *states* increase one's propensity to show safety-relevant courage. The author has discussed these states as actively-caring person states (e.g., Geller, 1991, 1994, 1996, 2001, 2001a, 2003).

Actively-Caring Person States

The notion that beliefs, expectancies, or person states influence one's propensity to perform in certain ways is analogous to the behavior analysis concept of "establishing operations" (Agnew, 1998; Michael, 1982). For example, behavior therapists have shown significant behavior change in both developmentally-disabled and non-developmentally-disabled children as a function of simple manipulations of the social context (Gewirtz & Baer, 1958a, b) or the temporal proximity of response-consequence contingencies (Vollmer & Iwata, 1991). Thus, the point that certain operations or environmental conditions (past or present) can influence (or establish) psychological states within humans, which in turn affects their behavior, is not new. However, this indirect and evidence-based approach to behavior change is not commonly linked to the management of safety-related behavior.

Self-Esteem and Belongingness

Exhibit 1 depicts a model the author developed and has shared publicly for more than a decade to stimulate discussions among industry employees of specific situations, operations, or incidents that influence their willingness to participate actively in safety-improvement efforts. Factors consistently listed as affecting self-esteem include communication strategies, reinforcement and punishment contingencies, and leadership styles. Participants have suggested a number of ways to build self-esteem, including: a) providing opportunities for personal learning and peer mentoring, b) increasing recognition for desirable behaviors and personal accomplishments, and c) soliciting and following-up a person's suggestions.

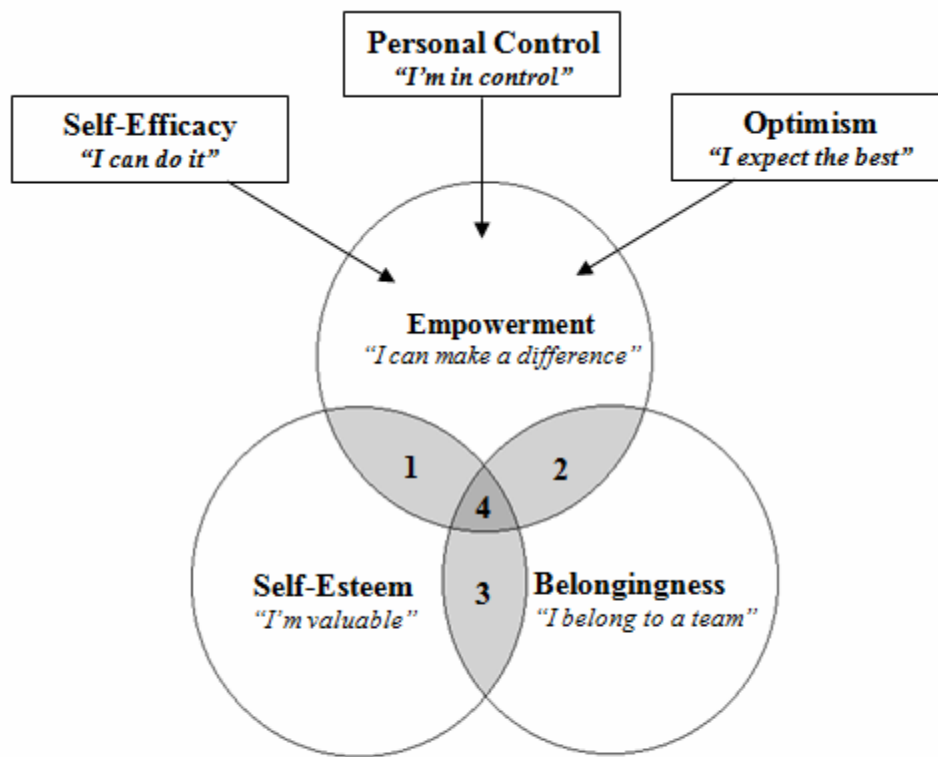


Exhibit 1. The five person states that influence people's propensity to actively care for others.

Common proposals for increasing an atmosphere of belongingness among employees have included decreasing the frequency of top-down directives and "quick-fix" programs, and increasing team-building discussions, group goal setting and feedback, group celebrations for both process and outcome achievements, and the use of self-managed (or self-directed) work teams.

Empowerment

In the management literature, empowerment typically refers to delegating authority or responsibility, or sharing decision-making (Conger & Kanungo, 1988). In contrast, the psychological perspective of empowerment focuses on the reaction of the recipient to increased power or responsibility. In other words, this view of empowerment requires the personal belief "I can make a difference," and this belief is strengthened with perceptions of personal control (Rotter, 1966), self-efficacy (Bandura, 1977, 1997) and optimism (Scheir & Carver, 1985; Seligman, 1991). Such an empowerment state is presumed to increase motivation (or effort) to

“make a difference” or go beyond the call of duty, and there is empirical support for this intuitive hypothesis (e.g., Bandura, 1986; Barling & Beattie, 1983; Ozer & Bandura, 1990; Phares, 1976).

Employees who participated in the author’s actively-caring training sessions have listed a number of ways to increase empowerment, including: a) setting short-term goals and tracking successive achievements; b) offering frequent rewarding and correcting feedback for process-related activities rather than for only end results or outcomes; c) providing opportunities to set personal goals, teach peers, and chart “small wins” (Weick, 1984); d) teaching employees basic behavior-change intervention strategies (e.g., behavior-based feedback and recognition procedures), and providing them time and resources to implement and evaluate intervention programs; e) showing employees how to graph daily records of baseline, intervention, and follow-up data; and f) posting response feedback graphs of group performance.

Culture and the Courage to Actively Care

Many factors that influence one’s propensity to demonstrate actively-caring courage can be subsumed under the general label – culture. Certain cultural factors related to the development and cultivation of courage are readily influenced daily by workers. Another, real-life case study not only illustrates special courage, but also demonstrates some practical strategies for promoting the kind of courage needed for interpersonal intervention relevant for injury prevention.

Physical Courage to Actively Care

On January 16, 2007, Dr. Kevin Brothers, Executive Director of the Somerset Hills Learning Institute, was wheeled into St. Barnabas’ Renal Surgery Center. He was in top physical and mental health, and had never before experienced surgery. He received a three-hour surgical procedure – not for himself but for someone else.

Dr. Brothers donated his kidney to his mentor and professional colleague – Dr. Patricia Krantz, Executive Director of the Princeton Child Development Institute. Seven months earlier Dr. Brothers had learned Dr. Krantz was in severe kidney failure, and without a transplant, would require dialysis within a few months.

Unbeknownst to Dr. Krantz, Dr. Brothers and several other colleagues agreed to donate one of their kidneys to Dr. Krantz. Among all of Dr. Krantz’s family, friends, and colleagues who received extensive blood work and tissue sampling, there was only one viable match – Dr. Kevin Brothers.

The difference between physical and moral courage is implicated in the three real-world events reviewed here. When we risk social embarrassment or interpersonal confrontation for safety, we are showing *moral* courage. In contrast, when we risk physical harm to ourselves when looking out for another person’s health, safety or welfare, we are demonstrating *physical courage*. While Joanne Dean and Bob Veazie demonstrated moral courage, Kevin Brothers’ elective surgery exemplifies physical courage.

The actively-caring courage of Dr. Brothers was extraordinary. Beyond a number of person factors, including Dr. Brothers’ self-esteem, and sense of empowerment and belongingness, a

number of cultural factors facilitated this display of courage. These factors are explained here as potential guidelines for promoting actively-caring courage in the workplace.

A Group Commitment

Dr. Brothers' first courageous act was to pledge to give one of his kidneys to Dr. Krantz. Prior to his surgery, Dr. Brothers talked to the author, and he admitted it was relatively easy to muster the courage to sign the donor pledge, because the probability of being the best antigen match was seemingly low. Surely one of Dr. Krantz's family members would be a better match than he.

Although surprised he was the best match, Dr. Brothers affirmed strong motivation in honor his commitment. We discussed the value of this two-part approach to motivate his actively-caring behavior – first the promise and then the action. This two-stage approach is applicable to the workplace.

Suppose each member of a work team were to sign a group declaration to give each other corrective feedback wherever they saw an at-risk behavior. You could call this commitment a "Declaration of Interdependence" (Geller, 2001, p. 378). This group obligation would likely increase people's acceptance of behavior-based feedback, as well as increase the probability a worker would deliver a coaching communication. Of course, a number of other safety-related behaviors could fit this two-phase process, beginning with a group commitment to actively care for each other's safety.

Group Support

Both before and after his surgery, Dr. Brothers received substantial social support for his actively-caring courage. His wife Debbie, a registered nurse, and their four daughters were totally behind Dr. Brothers' decision "to move ahead to give *our* kidney as soon as possible." Dr. Brothers said, "our" kidney "because this was a well-informed family decision made with the support of Debbie and our girls." In addition, a dedicated support group of friends and colleagues was defined by all those who pledged to donate a kidney.

Two weeks after a successful surgery, Dr. Brothers returned to work. "What an outpouring of support our family received from our school's parents and staff," reported Debbie Brothers. The parents and staff of the Princeton Child Development Institute were also extremely supportive, sending thank-you cards to Dr. Brothers for helping to prolong Dr. Krantz's life and thereby enabling her to continue her important work worldwide.

Substantial research documents the beneficial impact of social support on human performance, from enhancing motivation to engage in a challenging task to facilitating recovery from physical illness and injury (Reif & Singer, 2000; Sarasson, Sarasson, & Pierce, 1990; Sarasson, Sarasson, & Guruoff, 1997). This factor relates directly to the person state of belongingness, which increases one's propensity to actively care for another individual's health or safety. Thus, cultivating social support throughout a work culture is critical to increasing the frequency of actively-caring behaviors for occupational safety.

As Discussed above, various interpersonal activities can enhance social support, including group celebrations, team goal setting, interpersonal coaching, and collaborative work projects. Relationship-building conversations are also critical. The author describes specific methods for

cultivating and increasing social support through these various mechanisms in other sources (e.g., Geller, 2001b, 2002, 2005, 2008).

A Trusting Culture

When Dr. Brothers honored his pledge to give Dr. Krantz one of his kidneys, he trusted all of the others in his special donor group would follow through on their commitment if they had the best antigen match. He also trusted the expert medical staff at St. Barnabas Medical Center would give Dr. Krantz and him the very best healthcare. He expected a successful kidney transplant.

The topic of interpersonal trust, including the need to distinguish between trusting an individual's ability vs. his/her intentions, is addressed in other ASSE publications (Geller, 1999, 2002). These same publications entertained various ways to increase interpersonal trust in a work culture.

Consider asking employees what specific events, policies, or communications impact their trust levels. Then, solicit ideas for eliminating barriers to interpersonal trust and adding policies and/or procedures that could enhance people's perception the intentions and abilities of their supervisors and coworkers can be trusted. You'll likely receive a number of practical action plans, but just the process of soliciting ways to impact interpersonal trust will have a positive trust-building effect.

A Common Worthwhile Purpose

Dr. Brothers and his colleagues in the kidney-donor group admired and greatly appreciated the teaching and research of Dr. Patricia Krantz. Indeed, Dr. Krantz has pioneered the application of behavioral science for the treatment of autism, and she mentored Dr. Brothers while he was a research intern and Ph.D. student. In Dr. Brother's words, "Dr. Krantz gave me the opportunity to learn science, and her teachings continue to be the underpinnings of my career... (and) her guiding me into the field of autism treatment has given more children a chance for a better life."

Thus, the group that pledged to donate a kidney for Dr. Krantz had a common and commendable purpose. Likewise, advocates for occupational safety and health – all readers of these *ASSE Proceedings* – have a common and worthwhile mission. In fact, there is perhaps no more esteemed purpose than to actively care for another person's health or safety.

As illustrated earlier in this report, it takes more courage to actively care for a stranger than a colleague. And, attending to the safety and/or health of a family member is usually not considered courage but rather an obligation. Plus, when members of a work team think of their coworkers as "family," actively caring for the safety of these individuals becomes more an act of interpersonal commitment than courage. Thus, you increase the likelihood of interpersonal actively caring whenever interpersonal behavior supports a family mindset among coworkers.

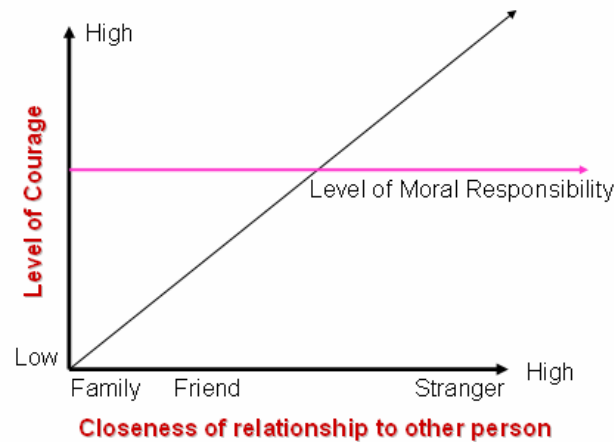


Exhibit 2. Level of courage as a function of the relationship between the change agent and the target individual.

The Moral Courage to Actively Care

Would you undergo elective surgery in order to give a kidney to a coworker? Fortunately, actively caring for the safety and health of your coworkers does not require the *physical courage* shown by Dr. Brothers. Indeed, you don't even need physical courage – only the *moral courage* to face possible embarrassment, rejection, or conflict when asking others to alter their behavior in order to prevent the possibility of personal injury. But a supportive *family* mindset among coworkers removes any fear of negative consequences from actively caring.

Many actively-caring actions on behalf of another person do not require any courage, but only a little inconvenience. For example, identifying or removing an environmental hazard, completing a near-hit report, or making a safety suggestion involves no risk for personal injury or interpersonal confrontation, yet the benefits to people's safety and health can be dramatic.

If you saw a member of your immediate family get behind the wheel of a vehicle and neglect to buckle up, you would not hesitate to intervene. But what would you do if you got in a hotel shuttle van at the airport and noticed the driver and several passengers did not buckle up? Would you offer some actively-caring feedback? In other words, would you have the moral courage to intervene on behalf of these at-risk strangers?

You have several excuses for not speaking up in the van, right? It's only a short trip to the hotel and the probability of a crash is miniscule. Besides, these folks are adults, and if they want to travel at-risk, that's their choice. Plus, if you say something about this, another occupant might be offended by your meddling and call you a "safety nerd." So why actively care in this situation?

Here's a thought: Consider your moral courage sets a memorable leadership example. You could start a constructive safety conversation and plant a safety seed for the occupant's present and future safety-belt use. Imagine someone is moved by your actively caring today and later reminds another person to buckle-up prior to a vehicle crash.

Do these possibilities activate some disconcerting tension between what you think you would do in this and similar situations vs. what you know you should do? The more you hold safety as a personal value, the greater the tension. Your relevant moral courage eliminates such tension and exemplifies actively-caring leadership.

Now consider the following interpersonal intervention strategies shown to be effective at increasing the occurrence of safety-related behavior. Do you have the moral courage to implement any of these, and encourage others to do likewise?

The Flash-for-Life

Developed initially in 1984 (Geller, Bruff, & Nimmer, 1985) and replicated in several other situations (e.g., Thyer, Geller, Williams, & Purcell, 1987), this rather intrusive but effective intervention merely involves the change agent holding up a card to request a certain safety-related behavior (e.g., vehicle safety-belt use); and if the target individual complies, the “flasher” flips the card over to reveal “Thank You”. Exhibit 3 shows the front (top portion) and back (bottom half) of this card which measures 11 x 14 inches and is brightly colored with bold lettering as depicted.



Exhibit 3. The front (top) and back (bottom) of the “Flash for Life” card.

In the first study (Geller et. al., 1985), the “flasher” was positioned in the passenger seat of a vehicle stopped in the left lane at an intersection. If the driver in the adjacent vehicle was unbuckled, the passenger held up the flashcard so the driver could see it. Table 1 depicts the impact of this simple promoting intervention by specifying the percentage of vehicle drivers who buckled up after viewing the card.

Flasher (Name & Age)	Number of Observations	Number Who Looked	Number Who Buckled	Percentage Who Looked	Percentage Who Buckled
Blacksburg, VA					
Karly—3 ½	179	154	37	86.0	24.0
David—5	31	21	5	67.7	23.8
Abby—7	68	47	16	69.1	34.0
Carrie—7	64	48	9	75.0	18.8
Dane—10	56	43	6	76.8	14.0
Hollie—22	206	177	43	85.9	24.3
Tim—23	183	148	41	80.3	27.6
Total	787	634	157	80.9	24.6
Christiansburg, VA					
Tim—22	145	123	19	84.8	15.4
Hollie—23	155	133	16	85.8	12.0
Total	300	256	35	85.3	13.7

Table 1. Percentage of drivers who looked at the flash card and buckled up as a function of the “flasher” and the town (Blacksburg vs. Christiansburg, VA)

As shown in Table 1, seven different passengers of varying ages, ranging from 3.5 to 23 years of age, “flashed” a total of 787 unbuckled drivers in Blacksburg, VA, home of Virginia Tech; whereas only two of these passengers (i.e., Tim and Hollie) showed the Flash-for-Life card to 300 passengers in the adjacent rural town of Christiansburg, VA. Some drivers did not turn their head to look at the sign, and therefore the compliance percentages are based on only those who looked at the sign. It’s noteworthy that this prompting intervention was significantly more successful in the university town than in Christiansburg (i.e., an average of 24.6 vs. 13.7 percent compliance, respectively). The age of the “flashers” did not have a reliable impact on the driver’s compliance with the buckle-up prompt.

The first applications of the “Flash for Life” occurred before safety-belt use laws, when only about 20% of U.S. drivers buckled up. Twenty years later, with about 80% of U.S. drivers using their vehicle safety belts, the author and his students compared the impact of a positive reminder (“Please Buckle Up I Care”) with a more common negative reinforcement prompt (i.e., “Click it or Ticket”) on both behavioral compliance and body language (Cox & Geller, 2008; Farrell, Cox, & Geller, 2008).

Table 2 reveals the percentage of unbuckled drivers who buckled up after viewing one of the two types of cards. This table also shows the number of positive vs. negative hand signals and facial expressions given per type of prompt. It’s noteworthy the positive “I Care” prompt was not only more effective at activating buckle-up behavior than the threatening reminder, it also elicited

more positive and less negative body language than did the negative reinforcement prompt. These differences are statistically significant (all p 's < .05).

Intervention Sign	% Who Buckled-Up	% of Positive Hand Gestures	% of Negative Hand Gestures	% of Positive Expressions	% of Negative Expressions
Flash for Life n=895	33.6%	13.2%	.9%	25.0%	3.9%
Click it or Ticket n=927	25.6%	7.8%	2.6%	18.9%	9.2%

Table 2. Percentage of drivers who buckled up, and gave positive vs. negative hand gesture and facial expressions after receiving a positive or negative buckle-up prompt.

The Safe-Behavior Promise Card

This nonintrusive and straightforward strategy is suitable for numerous circumstances and target behaviors (Geller & Lehman, 1991). It's been used effectively to increase the occurrence of specific safety-related behavior (e.g., the use of safety glasses, gloves, and vehicle safety belts, cf. Streff, Kalsher, & Geller, 1993), as well as to promote a generic approach to occupational safety (i.e., interdependency, cf. Geller, 2001, p. 378).

Based on the powerful social influence principle of consistency (Cialdini, 2001), this change tactic merely asks target individuals to sign an individual "promise card" or a "group pledge" that declares an explicit commitment to regularly perform a particular safety-related behavior for a specified period of time (Geller, 2005). For maximum behavioral impact, the pledge-card signing should be public and voluntary. Exhibit 4 depicts a generic promise card that can be used to increase a number of safety-related behaviors.

Safe Behavior Promise Card

I promise to _____

From _____ until _____

Signature _____ date _____

Exhibit 4. A versatile safe-behavior promise card with many potential applications.

The Polite Lite or Road-Rage Reducer

This approach to reducing negative emotions while driving and road rage involves the use of a vehicle light to signal a simple code under relevant conditions. Specifically, one flash means “Please,” two flashes reflect “Thank You,” and three flashes are used to signal “I am sorry”. Vehicle emergency lights can be used to flash the “1-2-3 code,” or a small green light as shown in Exhibit 5 can be affixed to the vehicle’s rear window and operated with the convenient push of a button.



Exhibit 5. The three components of the Polite Lite (left to right): 1) the green light that attaches to the rear window, 2) the push button control, and 3) the power connection that plugs into the cigarette lighter receptacle.

In a community-wide evaluation of this intervention strategy, the polite-driving code was promoted on radio stations and billboards throughout the town of Christiansburg, VA, and “polite lites” were distributed at various workshops. Results were encouraging (Geller & Dula, 2003), but the idea fizzled and died the following year. The success of this intervention relies on marketing to get the word out, and then people need to use the polite-driving code. It doesn’t take much courage to flash a polite code from inside your car, but it does require adjustments in one’s driving routine.

The “Airline Lifesaver”

When boarding an airplane, the small card depicted in Exhibit 6 can be handed to the flight attendant, which requests the following announcement be made after landing, “Now that you have worn a seat belt for the safest part of your trip, the flight crew would like to remind you to buckle up during your ground transportation”. The lifesaver card shown in Exhibit 6 is the first one the author used, beginning in 1985. In 1984, the author began using an incentive card that offered the flight attendants a prize if they read the announcement. The back of this card is depicted in Exhibit 7. Later, by alternating the distribution of these two types of reminders, the author determined the impact of an incentive intervention.

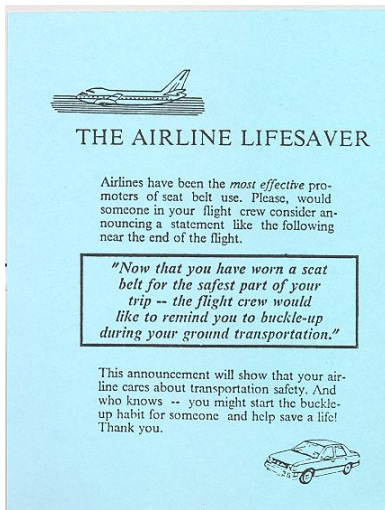


Exhibit 6. The front of the first airline life saver card (the back of the card included the author's name, affiliations, and address).



Exhibit 7. The back of the incentive version of the Airline Lifesaver card (the front of the card depicted the same information shown in Exhibit 6).

A 17-year study, demonstrated substantial compliance with this request (Geller, Hickman, & Pettinger, 2004), but no current airline has adopted this simple intervention and the author knows of no safety leader or consultant using this technique when they travel. When the request was made without an incentive (i.e., Prompt Only), 35.5% of 798 recipients read the message; whereas, when the flight attendant was offered a prize for delivering the buckle-up reminder, 53.3% of 245 recipients complied with the request.

Of course, showing that many flight attendants read the buckle-up reminder when asked to do so does not reveal behavior change clearly related injury prevention. Indeed, it is rare to see such

direct benefits of our injury prevention efforts. However, the author documents two behavior-change benefits of the Airline Lifesaver (Geller, 2005). In one case, a passenger who heard the buckle-up reminder asked the driver of the airport commuter van to buckle up, claiming “if a flight attendant can request safety-belt use, so can I.”

For a second testimony, the author received a letter from a passenger who said he used the back-seat safety belt in a taxi cab because he had just heard the buckle-up reminder at the end of his flight. Traveling over 70 mph, the taxi hydroplaned on a wet road and struck the guardrail. Serious injuries were prevented because this person had buckled up. The actual letter from this individual is printed in Geller (2005, p. 73-74) and Geller et al. (2004).

The Driver-Training Score Card

Over a decade ago, the author (Geller, 1996) documented an effective behavior-change intervention for driver training, which led to numerous adaptations in work settings. Specifically, the author worked with his 15-year-old daughter to develop a Critical Behavior Checklist (CBC) for driving. As shown in Exhibit 8, this CBC lists a number of driving-related behaviors, along with columns to record whether each behavior is safe or at-risk, and a column to write comments relevant for a follow-up feedback session.

While much research and even common sense indicates this process works to improve safety-related behaviors, the author is unaware of a single adoption of this technique for driver education/training. However, this behavior-change technique is the foundation of behavior-based safety (BBS), and there is much empirical support for the BBS approach to increasing safety-related behaviors and preventing injuries (Sulzer-Azaroff & Austin, 2000).

Critical Behavior Checklist for Driving			
Driver:	Date:	Day:	
Observer 1:	Origin:	Start Time:	
Observer 2:	Destination:	End Time:	
Weather:			
Road Conditions:			
Behavior	Safe	At-Risk	Comments
Safety Belt Use:			
Turn Signal Use:			
Left turn			
Right turn			
Lane change			
Intersection Stop:			
Stop sign			
Red light			
Yellow light			
No activator			
Speed Limits:			
25 mph and under			
25 mph- 35 mph			
35 mph- 45 mph			
45mph- 55 mph			
55mph- 65 mph			
Passing:			
Lane Use:			
Following Distance (2 sec):			
Totals:			
<p>% Safe = $\frac{\text{Total Safe Observations}}{\text{Total Safe + At-Risk Obs.}}$ = _____ %</p>			

Exhibit 7. The behavioral checklist used for driver training.

The Taxi-Cab Feedback Card

The author has proposed that safety leaders record safety-related driving behaviors of cab, bus, and limo drivers on a simple observation-feedback card; and after the trip, show the results to the driver for valuable behavior-based feedback (Geller, 1998). Exhibit 9 portrays a sample feedback card applicable in numerous driving situations. The top half of the card depicted in Exhibit 9 is given to the driver, while the bottom half has a return address and stamp on the back. This enables tracking of the driver behaviors observed by the passengers of public-transport vehicles.

This observation-and-feedback technique reflects another adaption of a basic principle and process of BBS, applied in industries worldwide with remarkable improvements in injury statistics. However, the author knows of no large-scale application of this evidence-based process for public transportation. It does take substantial moral courage to use this behavior-change strategy in taxi cabs, limos, and buses. But, is there a more important target for this feedback and coaching intervention?

Your safe driving today:

Always remember to buckle up!

You ☐ did ☐ did not use your safety belt.

During this trip, you used your turn signal correctly for _____ out of _____ turns you made.

You also made complete stops at _____ out of _____ intersections with red lights or stop signs.

For _____ out of _____ speed limit signs you passed, you were not speeding.*

*Please see the back of this card for a description of "speeding."

Driving smart...

How to use this ticket:

Safety Belt: Circle Yes if your driver is buckled up for the entire journey, No if not.

Turn Signal: Place a tally mark in the column under the Yes if your driver uses the appropriate turn signal when approaching an intersection. Place a tally mark in the No column if your driver does not use, or uses the wrong signal when approaching an intersection.

Complete Stops: Place a tally mark in the Yes column if your vehicle is the only vehicle at the intersection and it comes to a complete stop. Place a tally mark in the No column if your vehicle does not come to a complete stop at an intersection. Please DO NOT mark Yes or No if your vehicle is behind other cars at the intersection.

Vehicle Speed: Check your vehicle's speed when passing speed-limit signs. If your vehicle is traveling 5 m.p.h. or less above the posted speed-limit, place a tally mark in the Yes column. If your vehicle is traveling more than 5 m.p.h. above the posted speed limit, place a tally mark in the No column.

Your ticket to a safe ride!

	Safety Belt:	Yes	No
Turn Signal:			
Complete Stops:			
Speed:			

Please remember to fill in the feedback card and give it to your driver, then return this half of the card to the address on the back.

To: The Center for Applied Behavior Systems
5100 Derring Hall
Virginia Tech
Blacksburg VA, 24061-0436

No. 0873

Exhibit 8. The behavioral feedback card used for taxi drivers (the top half is given to the taxi driver while the bottom half is mailed to our research center for tracking purposes).

The Actively-Caring Thank-You Card

For many years, the author has promoted the use of a simple recognition or thank-you card for delivery to people following their performance of notable behavior (e.g., Geller, 1998, 2005). In fact, such "Thank-You Cards" have been customized for particular industrial sites and educational settings. For example, for many years the author has distributed the "Virginia Tech Thank-You Card" shown in Exhibit 10 to about 100 students per semester, but very few students have used this card to acknowledge the actively-caring behavior of others. While student leaders in our Center for Applied Behavior Systems (CABS) have regularly used this recognition technique for two decades, applications beyond CABS are rare. Why?

Virginia Tech
Actively Caring Thank-You Card

Thank You For Actively Caring!

I Thank _____
for _____
From _____

THANKS FOR MAKING A DIFFERENCE BY ACTIVELY CARING!

Actively Caring is behavior that goes beyond the call of duty to help others and protect the environment

Examples of Actively Caring Behavior
-recycling -donating time -showing concern
-teaching someone -being a designated driver
-reaching out to help someone or the environment

Questions? Email cabs@vt.edu

Thank you for caring enough to return us this card!

Card Giver _____
Card Recipient _____
Actively Caring Behavior Recognized _____

Card Recipient is: Male ☐ Female ☐
Student ☐ Staff ☐ Faculty ☐ Other ☐
Relationship to Card Recipient (circle #)
1 2 3 4 5
Family/Closest Acquaintance Stranger

The Reaction From Card Recipient Was:
1 2 3 4 5
Negative Neutral Positive

My Experience Giving Out This Card Was:
1 2 3 4 5
Negative Neutral Positive

To: Virginia Tech
5100 Derrington Hall
Blacksburg, Va 24061-0436

RETURN TO:
5100 DERRINGTON HALL
VIRGINIA TECH

TO: 5100 DERRINGTON HALL
VIRGINIA TECH

Exhibit 9. The Actively-Caring Thank-You Card used at Virginia Tech (the bottom half of the card is detached and placed in campus mail after the card giver completes the survey).

In Conclusion

Many excuses and barriers can be offered for the lack of large-scale application of effective interpersonal interventions analogous to the seven described above. Three dimensions of human dynamics related to leadership were explained: Competence, Commitment, and Courage. It can be presumed that most safety leaders are competent and committed regarding the application of cost-effective interventions to prevent injuries. In other words, they know what to do, and are motivated to do whatever it takes to improve safety.

However, the author suggests the missing link is *moral* courage, or the audacity to step up, take an “interpersonal risk,” and go beyond the routine for safety. Beyond competence (or self-efficacy), four person states that influence courage in this context (i.e., self-esteem, belongingness, personal control, and optimism) were discussed, and guidelines for cultivating an actively-caring culture were presented. Work groups need to entertain ways to increase these person states among themselves and others, and thereby enhance the courage needed to implement the actively-caring interpersonal intervention tactics described here.

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