

# Creativity and the Bottom Line:

An Interview with George Prince and Vincent Nolan of Synectics, Inc.

Marilyn Darling

*"He who would do good to another must  
do it in minute particulars;  
General good is the plea of the scoundrel,  
hypocrite and flatterer:  
For art and science cannot exist but in  
minutely organized particulars."  
— William Blake*

Recently, I met with George Prince, co-founder and former Chairman of Synectics, Inc. in Cambridge, Massachusetts, and Vincent Nolan, who joined him 20 years ago to found Synectics, Ltd. in England.

Synectics is an international consulting firm which, since its founding, has been dedicated to exploring and applying principles of innovation, creativity and learning in organizations. Synectics now offers both training and consulting services that focus on new product and technology development, information technology, cost management, and management development. You may have come into contact with some of the many products that have sprung from Synectics sessions. They include the Black & Decker Handymixer, Sunoco's "Dial Your Own Octane" pump, American Express' "Refund Express," or vandal-proof pay phones built into the side of a building.

The Synectics approach to learning focuses on encouraging people to make connections between new information and their own rich ground of experience. George and Vincent consider this ability to make connections between apparently unconnected ideas or things to be the wellspring of creative thinking. During our interview, their conversation was peppered with phrases like, "That connects with an experience of mine . . ." or, "To keep going on that line of thought . . ." or, "That reminds me of a story . . ."

Their particular perspective gives George and Vincent interesting insights into some of the issues we face today, such as stimulating quality effort in work teams. Both men are now semi-retired (though this may be a misnomer!). Vincent is in his 60s and George is in his 70s. I met them at George's home in Weston, Massachusetts. I asked George about Synectics' approach to creativity . . .

**MD:** Everyone is talking these days about the need for creativity and innovation in the 1990s. But sometimes I feel that "creativity" is becoming a kind of catechism. It begins to roll off the tongue almost too easily. What is the real business justification for training people in creativity?

**GP:** I'm convinced that creativity is an artificial separation we make when we think about learning. Creativity is learning. The operations are exactly the same. When people say, "Let's be more creative," they're saying, "Let's be better learners." These days, no one would argue that it's not good business to have people who are good learners. But we managers often worry about "creativity" because it's unpredictable. In spite of what we profess, we fear the chaos and loss of control we imagine may result. A good learner, on the other hand, suggests a person who will quickly understand and carry out the manager's wishes. We managers are caught in an emotionally difficult impasse: we want the product of creativity, but we don't want the mistakes and unpredictability that are a necessary part of the creative trial-and-error learning process.

**MD:** When you talk about learning, you focus on the learner and how he or she makes connections between what's going on in the environment and his or her past experience.

**GP:** Yes, I was walking with my son when he was about three, and he saw a horse — a big horse. He grabbed my hand and said, "Daddy, there's a big cat." And I laughed and said, "No, Winky, that's a horse." He was making a connection between something he knew, "cat," and this new, unknown beast — the essence of learning. Well, I essentially punished him for making that nifty connection. We treat our kids that way thousands of times. And what we're saying, in a way, is, "Don't make connections unless they're precisely correct." The hidden message is, "Don't develop your natural learning skills.

Wait until someone tells you what it is."

**MD:** I understand that one of the traits of those who have ever been deeply involved with Synectics is keeping a pad of paper in front of them. Is this part of making connections?

**GP:** Yes, so that we don't insist that you act in ways that are unnatural. It's not natural to listen to everything. It's natural to get stimulated and go off on your own track and make notes about it. I think most people do that. If they connect or get the beginning of an idea, they make a note, so that they can go back and listen. I *like* to do it also!

**VN:** The logic of it is that most people think very fast. There's much more going on in the listener's head than what is coming out of the speaker's mouth. And you have to integrate those two meetings — the meeting in your head and the public meeting.

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**MD:** We're talking about focusing on learning in organizations. I wonder, if we had our way, and our organizations all became learning organizations, what might happen if we actually succeed?

**GP:** For one thing, people would like to go to work. To my mind, learning is one of the sources of bliss — when I make the connection that transforms confusion into understanding, I feel in touch with the very best part of myself. It validates and reassures me of my own worth. In most work situations people are discouraged from making their own meanings. In a learning organization, being continually alert for opportunities to make connections would be the norm. I think if people had these experiences on a daily basis, they could not wait to get to work.

In the early 1960s, we helped a few clients set up small, very diverse invention teams of four to five people. They were given a lot of freedom. We set up each one with its own facility for making crude implementations. Teams like this are called "skunk works" now. The order of the day was improvisation. This emphasis on inventing created a lot of energy and joy. Invariably, these groups spoke of the pleasure and excitement they felt as a result of this way of working together.

**VN:** That connects to two paired images I have from childhood — one of people going to a football game and the other of people going home from work. You could always observe, as you passed by in a bus or car, who was going to the game and who was not from the way they walked. People displayed the same purposeful and pleasurable anticipation when going to the game as they did when they were waiting for the factory whistle to blow, ready to swarm out the moment they got the opportunity. It's a measure of the hatred people feel for work and what we lose because of that in terms of their natural motivation.

It's not so much the content of the work that is so much disliked — people engage in the same activities and call them hobbies — as the way people are treated. They're discounted and de-validated at work. If people are honored and respected and encouraged to contribute and use their own initiative, work becomes rewarding and enjoyable. And I don't see any reason why going to work shouldn't be as pleasurable as watching football.

**MD:** What would an organization that truly, in your eyes, qualified as a learning organization look like?

**GP:** I think there would be fewer edicts coming down from the top to govern what's going on. There would be a sort of general idea — "This is what we're about." Planning and communication would involve "languaging around" in groups. Decisions made as a group would continually use the group wisdom that has been shared. So you'd have continual learning and invention that is appropriate for right here, for this group and what we're doing...

**VN:** One of the concepts we use is that of "best current thinking." As senior managers, we say, "This is the proposal and this is the direction. We've been thinking about this. And this is how far we've got. This is our best current thinking. We'd like some feedback from you. Tell us what you think about it, and ways that you have problems with it. And then we'd like you to help us solve your concerns with it." And then if they're insoluble, we have to go back to our initial objective and find a better "best current thinking."

**MD:** If managers are to be less directive and more collaborative, then what happens to the notion of strong leadership?

**GP:** People have the notion that if everybody in a group went off in different directions, it would be totally ineffective. I would propose that, if we three develop a relationship where we really know what's going on with each other and then we set out to do something, we can improvise as we go along, and do the most appropriate thing, which we invent right there and then. When I start to move in one direction, you'll know, "George is thinking this. And I'll back him up." And you'll be doing the right thing. In a high-performing, in-touch team, people's signals will be almost like E.S.P. I mean, the team will be much more effective, whatever they do.

**VN:** It reminds me of a shoal of fish. The fish somehow move together as a shoal. And the shoal has an outline of fish who are testing the environment and feeding back information in some way. They don't get too far from the main body of the shoal. The main shoal is pulling feedback in from many different directions. Somehow they manage to move as the shoal. That, I think, is a very good measure for the way an organization needs to move. It's not imposed by a central commander anywhere. It's the collective taking feedback from the periphery.

**MD:** It sounds as though you coach managers to place a great deal of value on the ideas of their employees.

**GP:** Let me give you an example. A big electronics company had a big repair facility, with 200 or 300 production lines. And each production line was made up of eight women. At the time we got involved in this, the production lines were producing at the rate of something like 50% of standard. Standard was something that the union and the company agreed was a decent day's work. But out of that 50%, there was about a 50% rejection rate. So they were really producing only 25% of standard.

They gave us ten lines to work with. We talked with the women — what would help them do better? The first thing they talked about was that the Quality Control inspectors were men. These inspectors would bring the rejects back and throw them at the women, saying, "You broads got to shape up." Their women supervisors were punishing them too because they thought that would help get production up. The women on line wanted nothing to do with either their inspectors or their supervisors anymore.

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So with the agreement of the union, we eliminated both. And then we taught the women how to solve problems and cooperate. Within a very short time they cut their rejections to zero. What had been happening was that everybody was angry.

MD: Everybody was angry at whom?

GP: At the situation — everyone was frustrated. They were all "failing" and the traditional relationships and procedures weren't helping. They were angry at each other, and with the company for feeling de-validated. The women on line were feeling defensive and self-protective. If the first person in line missed a soldering connection, others down the line might see it, but their reaction was, "This isn't my soldering connection. I'm not sticking my neck out!" As soon as they began to cooperate and think supportively, the rejection rate dropped to nearly zero.

Within two months these experimental lines were all producing 100% of standard. (They couldn't produce more because of their union agreement.) As time went by, they began to invent better ways of doing their jobs. They played a game called "Switch," where anybody could call "Switch" and they would all trade places. They had contests to see how quickly they could produce standard. It wasn't unusual for them to do eight hours of work in five and spend the rest of their time playing cards.

What was really unexpected was that it was catching. Not only did they improve enormously, but the other lines, seeing what they were doing, began to be cooperative. That was a perfect example of learning. They learned how to work with each other and found it enjoyable instead of being adversarial. If they hadn't been able to learn, it wouldn't have happened.

MD: And they were being creative.

GP: Yes. I've become convinced that each of us needs to keep demonstrating our own competence to ourselves and others. This need for validation is one of our topmost motivators. If you think about how I treated my son Winky's "big cat" connection, the socialization process creates a lot of uncertainty about whether I'm really okay. My self-esteem is always on the line until I feel safe. I've observed videotapes of a great many normal, effective, intelligent people (I'm talking thousands, not hundreds!) repeatedly demonstrating this sensitivity.

That's why I have my antenna up in any situation. You came to the front door and I met you. I ask myself, "Is Marilyn going to be friendly to me?" and I'm sure you're thinking, "Is George going to be friendly to me?" I feel threatened, and that's the most important thing to deal with. The enormous amount of energy that's tied up in that can't be used in productive work.

A company has so many things that are going to be de-validating. I have to park 500 miles from my office so the big

shots can park right nearby. They have their names on the doors and I don't. Every person's status turns into a discount of someone else. When that's removed, and if I know that I'm going to be treated in ways that validate me, then a whole lot of my energy can turn away from self-protection to learning. I think there's a quantum difference in the amount of energy that would be available, if we could make a group work like this.

MD: As I understand it, George, in 1960, while you were head of the Invention Design Group at Arthur D. Little, you and three of your colleagues became so fascinated by the process of creativity that you decided to turn your attention to that process and eventually went out on your own to found Synectics.

GP: Yes, my colleagues and I started with tape recorders, listening to fellow inventors at Arthur D. Little. We got interested in how inventors got ideas. So we began to tape-record all of our conversations. The thought was that if we got an idea, we could go back and see what we were doing and what we were saying. We later shifted to videotape when that came around.

One of the patterns we began to see was that whenever anyone discounted someone else, there was a revenge reaction that would happen absolutely dependably. This first became clear with a group working on a problem — inventing a new thermos bottle. I was listening to some commotion outside and I missed the first part of the meeting. Then one of the guys said, "Hey, I've got it, let's take a sheet of rubber..." and he was gesturing. There was one woman in the group, and she said, "That'll be too expensive." And I thought, "Now, how did she know that? She doesn't know what he's going to do with that." I was interested, but I didn't really pursue it. But when I was playing back the part that I had missed, right at the beginning this guy had said, "You're the only woman in the group. Why don't you become the secretary?" So she wasn't really interested in his ideas — she was going to nail him.

As we watched for that, it became completely dependable. If someone discounts another person, that person will get even. There are plenty of situations in work and life where I can't afford to get even directly with you because you're my boss or that type of thing. So I unconsciously (or not) forget to do something. I don't put the final screw in this, I don't send out the letter I was supposed to. We think that a considerable number of the mistakes that are made are motivated by anger.

VN: People have an intuitive knowledge as to when they're being conned and when they're being told the truth. A lot of managers play a little bit of a game. They think about a problem privately and come to a conclusion. Then, instead of disclosing their solution as their "best current thinking" and inviting their subordinates to give them feedback, they pretend they don't have a solution and invite ideas to deal with the problem. When somebody comes up with the same conclusion they already decided on, these managers say,

"That's a good idea! We'll do that."

Managers believe they are motivating their subordinates by making them think they've invented the solution. In fact, these managers are dishonoring their subordinates by deceiving them. That's a game called "Guess What's in my Mind?" Lots and lots of managers think that, by doing this, they are involving their people, and of course, it's a sham. And the kind of revenge people can take is to not be very committed to the solutions developed in the meeting.

GP: If, on the other hand, I deal with individuals in an honoring way, I get remarkable results. I use the word "honor" to capture the idea of *appreciatively* acknowledging another person's existence. This doesn't have to be a big deal, but if I don't, they may experience my behavior as a discount, with obvious consequences.

I think that people in training very often are light years ahead of the people who manage companies. People in training have direct daily contact with the old adage, "You can lead a horse to water, but you can't make him drink." Since we don't have the authority to force people to learn, we learn to establish relationships with them that are inviting. We are forced to pay attention to process in order to succeed, where line managers tend to believe they can use authority to get people to comply with their wishes.

VN: So you need to show people how to deal with people in an honoring way — the minute particulars of it. The guy who said to the lady, "You're going to be the secretary," would be astounded if you told him that he wasn't dealing with her in an honoring way. When he looks at himself on the video and looks at the reaction of the lady, then he begins to learn that the effect of what he's doing is quite different from what he intended. And then his evolution begins when he starts to try out some alternatives.

MD: Are you saying that in order to intervene in this revenge cycle you have to intervene in the behavior that provoked the revenge?

VN: I think you have to create awareness of the difference between what I'm trying to do and the effect that I'm having. And that comes out very strongly in video. A lot of people are shocked when they first see themselves on video. And I say the rest of the world sees that every day.

Once you've got awareness, the next thing that you have to do — and this is the important part of the creative process which Synectics has found — is to invent some mechanisms to help people get out of it. So we set three ground rules for a problem-solving session:

First, understand before evaluating by paraphrasing your understanding of an idea. This is a check to see if we're talking about the same thing, which immediately takes you out of the revenge cycle. If I take the trouble to paraphrase your idea, I'm demonstrating that I value you and your contribution.

Second, find value in every idea. Talk about all the good features it has to offer.

And third, use negative words as a signpost for ways to improve. Instead of saying, "This won't work because . . .," say, "We want to find a way to . . ."

These are examples of the ground rules that we've invented — specific things that people can do. George and I are very fond of a particular quotation from Blake which says that if you want to do good to others, you must do so in minute particulars.

MD: So by helping people move out of the revenge cycle and teaching them how to honor their peers, you're giving people a way of doing "minute good." George, I have heard you assert that traditional teaching formats tend to set up a dominant/subordinate relationship. Do you observe revenge behavior in these situations, too?

GP: In a dominant/subordinate situation, the subordinate has to defend himself somewhat. It's just natural. If I harp on my kids — if things are imposed on them — after awhile they begin to rebel. When I'm dealing with an especially dominant person who is instructing me, my tendency, even though I want to learn it, is to say, "I won't learn this." That makes me a slow learner. And that comes right out of the power relationship.

MD: And I suspect you would say that traditional teaching also discourages the "big cat" type of connection-making that we mentioned earlier, which would tend to slow a person's learning even more.

GP: When I'm learning something new, my connection base is my own. It's unique, nobody has one quite like mine. Let's say you're teaching me how an automobile engine works. And I don't know. I have to make a connection. When you say, "The piston goes down and turns the crankshaft," maybe the best I can do is imagine that the piston is like a fist. So I connect with my connection material, whatever it is.

VN: I might say to myself, "I don't know what a piston is, and I don't know what a crankshaft is, so I'd better give up."

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GP: And that's a person who has been punished by our culture. One who's a good learner makes that connection, even though it's very approximate. I need to do that my own way, and when you give me information, it may or may not fit my connection material. The organization of information that you, the dominant person, are imposing on me doesn't necessarily fit my list of needs.

MD: Given that most, if not all, of your clients have been educated in traditional teaching environments, do you find it difficult to re-engage their natural learning abilities?

GP: We used to have a lot of trouble with people coming into our sessions and saying afterwards, "This is nothing new. This is the way we *always* work." It would drive me crazy, because it wasn't how they worked at all! So we developed an opening exercise where we filmed the way they really did work so we would have that in our pocket, so to speak. Then, when they said that, we'd say, "Let's go back and see if that's the way we work."

One of our clients made a wonderful statement. We took him through one of these video experiences, and he said, "The purpose of this was obviously to create in me a learning deficit." I'd never thought of it that way.

MD: That's nice — thinking of the video experience as a way of recognizing what you don't know.

GP: There is something here that I don't have — some way of establishing in me a feeling, "Hey, I have a deficit —."

MD: . . . which opens my mind to learning something new. You talk a lot about "languageing around." As I understand it, Syntectics groups "language around" about a concept or a problem by asking each member of the circle to talk about what it means to him or her.

GP: Gregory Bateson said that every group is "an ecology of ideas." Ideally, the group defines itself by sharing these ideas. Often, because of hierarchy or custom, members of the group don't have the opportunity to know each other's ideas. "Languageing around" is a procedure we use to enhance the sharing of ideas about a situation. The rules are simple: listen, make connections, focus on yourself, take turns and don't discount or give advice.

For example, let's take the production problem we just discussed. In that case, the group is made up of representatives of this "ecology" — the production line. A quality control inspector thinks, "You women have got to pay more attention to your soldering joints. You're doping off and it's my job to tell you so." The languageing around process would require him to translate his thoughts to avoid discounting and blaming, focusing on his personal experience. Something like, "When I see an unsoldered connection, I feel disappointed. I'm going to have to reject this. I wish I could do something that would be more helpful than just rejecting it."

A line worker might say, "I get a lousy feeling when a rejection comes back, and I get angry when I get bawled out too. I wish we had more of a partner relationship with Quality Control."

Then the supervisor might say, "I feel helpless and as though nothing I do is any help." Languageing around is aimed at arriving at an understanding, not at problem solving — that comes later.

VN: You also might pick up that missing clue — that missing piece — that you need to make sense of some problem that you are wrestling with. You can recognize that piece when you hear it. As a teacher, I can't know what that missing piece is. If teaching and learning are based on mutuality and equal respect, everybody's in the same boat sharing their own experiences. Maybe the learner doesn't need the ideas; maybe he or she needs some connection linking two pieces of information he or she already has.

This is a much more traditionally feminine way of approaching learning, as opposed to the much more masculine way of, "I'll tell you how to do it. I'll give you a good idea. I know."

MD: You consider that to be a "feminine" as opposed to "masculine" way?

GP: There is some very interesting work being done at The Stone Center on feminine versus masculine perspectives. The Stone Center is at Wellesley College. It's very much a non-status, non-hierarchical group of women — five of them — who have been working together for the last ten years or so. And they have done some marvelous work around our understanding of the way women develop differently from men. All of the developmental schemes to date have been done by men, and they refer to men. It was thought that women do the same thing, but not quite as well.

Very sensibly, Dr. Jean Baker Miller, the Center's Director of Research and Education, said, "But we have our own way of developing, and we're perfectly good at it." And she articulated that development scheme. One of the really great things that they have defined is the persistence of relationships. A relationship has permanence and you can invest in it, and you'll have payoffs. If I find mostly good things in my relationship with you, then I can make a boo-boo and it won't be ruinous. That idea is delightful to me.

The other way they think about relationships is that the way you build them is through mutuality. When I'm talking with you, I include something of you in what I'm saying and vice versa. It seems to me that's a wonderful suggestion for people who are training. One of the things that we do as a practice that started long ago is that we start out every session with people telling us about themselves. It's not a very high level of self-disclosure — I wish we could get deeper into it. But the more I know about you, then the more I can include you in what I'm saying, which enriches our relationship.

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VN: And the more areas for connecting we have. Which connects me to the island metaphor — the larger the island of knowledge, the longer the coastline for learning. And that's why people who are very knowledgeable get much more from learning opportunities than people who have no previous knowledge because they've got so little to connect with. George is saying the same thing about relationships.

MD: So, after 50 years of working in this field — the both of you — are you still optimists about the possibility of the learning organization?

GP: I am. I believe we are getting closer and closer to reframing the teacher/learner relationship to one that avoids any dominant/subordinate complications. We want to set it up so learners feel entirely safe and available, without any need to defend or impress. We want them to be free to be in charge of their own learning — to be in touch with all of their connection-making resources. As trainers, we want to be in the same frame of mind — safe, available, with no need to defend or impress learners by imposing our temporarily greater knowledge.

When we really succeed in reframing the learning relationship, we will have a new model for the manager/subordinate relationship that will deliver managers from that painful impasse I was talking about earlier between wanting to encourage learning and wanting to maintain predictability at the same time. And it will release a quantum of energy that people can *joyfully* commit to accomplishment and to continually demonstrating their competence, with generous helpings of self-validation. This is my vision of the way things could be in a true learning organization.

MD: Good.

VN: I'd say yes, I'm very much an optimist. I just wish I was 20 years younger.

MD: You could do it all over again.

VN: People like Deming are around, still going strong in their mid-80s. So maybe I *am* 20 years younger than I've given myself credit for. But what I'm particularly anxious about at this stage is that I've got to apply this body of knowledge to the really worthwhile objectives.

MD: It is a lifetime wish of mine to have, as I approach "retirement," the kind of enthusiasm for life and learning that you two seem to have.

VN: I never learned to swim the crawl. I can swim the breaststroke, but I can't swim the crawl. George's wife Kathleen is a great coach. She's teaching me to swim the crawl. What she's doing is, first of all, strengthening my self-confidence. And she's giving me some feedback too, without

in the least damaging my self-respect or self-esteem. I am 62 years of age trying to learn how to crawl, which I should have figured out when I was 10.

MD: You guys are *still* learning.

GP: Isn't that shocking? I've come to believe what I wrote — that the act of learning is one of bliss. It's just marvelous. One of the reasons that children are so joyous is that they're still getting pleasure from learning. They haven't been trained out of it.

After I left George and Vincent, I looked over some of the materials George had given me, and I came across the following quote from George about times when he feels totally validated and blissful:

*"Grandchildren. Mutual moments with my children. Times of complete coordination and empathy with my sailboat, the wind, and the water. Split seconds of joyous empathy with a crow or a chipmunk or a tree. Watching children. Watching/experiencing my wife, Kathleen. When I swim a particularly well-coordinated lap in our pool. The color of the water when I have been able to get it perfectly crystal clear. When I am 'on' when writing. When I am working with a person or group and we achieve a meaning together and they express appreciation for my part in that. These are some of the fleeting moments when I am briefly connected to being."*

I took a walk after I read that and thought about the times when I felt that self-validated. Not surprisingly, it was at those moments when I also felt infused with creative energy. I thanked the people in my life who had helped me to feel that way and hoped that I might have a part in helping others experience that sense of self-worth and self-esteem in the future.

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