# Identification and Amplification of Tacit Knowledge: The Positive Deviance Approach as Knowledge Management Praxis

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**Abstract:** Often the answer to solving complex social problems already exists in the community as some type of tacit knowledge, but it is hidden from plain view. By demonstrating how tacit indigenous knowledge can be identified and amplified through a problem-solving approach known as Positive Deviance (Singhal et al., 2014), this article contributes to the understanding of the knowledge externalization process (Nonaka, 1994). The Positive Deviance (PD) approach is premised on the belief that in every community there are certain individuals or groups whose uncommon behaviours and strategies enable them to find better solutions to problems than their peers, while having access to the same resources. We propose five stages for the identification and amplification of the tacit knowledge in the PD approach. The first stage concerns awareness and breakout of the community "mental prisons." The second stage refers to identifying the positive deviants—the carriers of the authentic experience and valuable tacit knowledge. The third stage suggests creation of particular conditions to facilitate the "paradigm shift". The fourth stage indicates self-discovery as the mechanism of knowledge transfer. Finally, the fifth stage highlights the importance of social proof as the justification mechanism for the adoption of self-discovered knowledge as community members embrace the new practice. Through an analysis of two highly effective PD implementations in Vietnam and Argentina, we show how unearthing of tacit knowledge is fundamental to the PD approach, and represents a source of creativity and inspiration for finding efficacious solutions.

**Keywords:** tacit knowledge, externalization, knowledge amplification, positive deviance, knowledge management praxis

## 1. Introduction: The role of indigenous knowledge for social problem solving

Let us begin by invoking a Sufi tale. In one of his hundreds of guises, the mystical Sufi character Nasirudin appears on earth as a smuggler, arriving at the customs checkpoint each day leading a herd of donkeys. The customs inspector would feverishly turn the baskets hanging on the donkeys upside down to check the contents, hoping to nail Nasirudin in an act of wrongdoing. He, however, never found anything of interest, and hence had little choice but to let the smuggler go free.

Years go by, and Nasirudin's legend as a smuggler grew while the inspector grew ever more frustrated. One day, after Nasirudin and the inspector had retired from their respective occupations, their paths crossed. The former inspector pleaded, "Tell me, Nasirudin. What were you smuggling?"
"Donkeys," Nasirudin said.

Nasirudin's donkey story holds important lessons for social change scholars. Often the solutions to highly intractable problems, whether in communities or organizations, stare us in the face, but remain invisible in plain sight. To discover these invisible solutions, we need to be mindful of the concept of tacit knowledge, and how it can be identified and amplified.

This article seeks to contribute to the understanding of the processes by which tacit knowledge of an individual becomes amplified and accessible to a larger group—the process known as externalization (as per Nonaka (1994). Still little is known about how the conversion of knowledge, and in particular, externalization occurs. Recent research in the area of cognitive psychology has provided some insights about how the conversion between tacit and explicit knowledge occurs (see Nonaka and Von Krogh (2009). However, the critique of the available literature is that the research focuses on understanding individual cognition with not adequate attention paid to the wider social context of which the individuals are a part.

In order to obtain a better understanding about the processes underlying amplification of tacit knowledge, we focus on a particular type of knowledge—indigenous knowledge.

In recent years, scholars such as Cortez et al. (2011) have emphasized a wider application of indigenous knowledge for solving complex social problems, especially in communities plagued by high unemployment, extreme poverty, chronic malnutrition, and political instability. Indigenous knowledge is usually tacit, i.e. not explicitly codified and systematized. It belongs to a particular community and is embedded in local practices, relationships, and rituals (Cortez et al. (2011) referring to World Bank 2002). This type of knowledge is argued to have no theoretical underpinnings, but is explorative and experimental in nature. It is in constant flux, being reproduced, discovered and sometimes lost. Indigenous knowledge is culturally-specific and provides solutions for everyday tasks whether in land-based agriculture, food preparation, or health treatment (e.g. Ochieng (2007).

Although indigenous local knowledge can be an important source of prosperity and competitive advantage, this knowledge is often not used effectively. The key challenge is how to identify and amplify this tacit local knowledge. The universal question of importance is: How can valuable tacit knowledge be captured and amplified to be of benefit and value for the whole community?

Tacit knowledge is argued to serve as a foundation of social practice (Tsoukas and Vladimirou, 2001) and a foundation for change (Tsai and Li, 2007). Individuals acquire diverse tacit knowledge as they participate in various social practices. The tacit knowledge of practitioners thus becomes a source of creativity and inspiration for seeing problems in a new light and searching for solutions (e.g. Leonard and Sensiper (1998). However, the general critique of the scholarly literature is the lack of attention to the role of social practices for knowledge conversion (Nonaka and Von Krogh, 2009).

In this paper, we address the issue of identification and amplification of the tacit indigenous knowledge by applying a particular problem-solving approach known as positive deviance (PD). The PD approach was elaborated and for the first time employed by Jerry and Monique Sternin to identify and amplify the tacit knowledge and behaviours of individuals to combat childhood malnutrition in Vietnam in the 1990s (Pascale et al., 2010). Later, this approach was replicated and adopted to solve a number of complex problems in various organizational and social settings. In order to obtain a better understanding about amplification of indigenous knowledge, and to demonstrate how the amplified tacit knowledge can solve social problems at a large scale, we will draw on two particular cases employing the PD approach.

This paper is further organized as follows. Section two presents a discussion about knowledge conversion, and in particular, the amplification of tacit knowledge. Section three introduces the key tenets of the PD approach. The following two sections present the cases from Vietnam (Section four) and Argentina (Section five) in which identifying and amplifying the indigenous knowledge of individual community members served as the key to solving urgent problems of their local communities. In Vietnam, the PD approach helped solve the problem of childhood malnutrition, and in Argentina the problem addressed was school dropouts in elementary schools. Section six discusses how tacit knowledge of individuals was identified and amplified through a five-stage process. Finally, the last section concludes with implications that the PD approach holds for practice, and also proposes an agenda for future research.

## 2. Knowledge conversion: Amplification of tacit knowledge

The issue of knowledge and its characteristics has been widely discussed in the scientific literature. Knowledge has practical value--it permits humans to define, characterize, evaluate, and learn to solve problems (Krogh et al., 2000). Further, knowledge can be of tacit and/or explicit character (Nonaka and Von Krogh, 2009). Explicit knowledge is formulated and expressed in sentences or graphic symbols, and is universal in that it can be employed across the contexts. Tacit knowledge, a term first introduced by Polanyi (1967), stems more from intuition, common sense, or personal experiences. This type of knowledge comes from actions, routines, values, and emotions (Nonaka et al., 1996). Explicit knowledge is rational and objective, while tacit knowledge is experiential, intuitive, and subjective (Nonaka and Von Krogh (2009). Explicit and tacit knowledge are mutually complementary and are situated in a continuum, which means that knowledge varies from tacit to explicit and vice versa. Tacit knowledge becomes accessible if it moves towards the explicit side of the continuum.

The value of the tacit/explicit distinction lies in the potentiality of how people use their tacit knowledge for dealing with everyday tasks (ibid.). In Nonaka's terms, the focus is on externalization--when knowledge moves from its tacit to the explicit dimension of the continuum. This mode of knowledge conversion facilitates expansion of knowledge from the individual into the collective domain, forming a basis for conscious action. Externalization of knowledge is a creative process implying use of dialogue, metaphors and images (ibid.). For instance, in a team, the conversion of tacit knowledge into explicit knowledge (externalization) involves a continuous dialogue between the group members. It is important that the dialogue is constructed in a way that gives members opportunity to express themselves freely and openly, as also to question and negotiate.

Nonaka and Von Krogh (2009) argue that knowledge conversion produces outcomes both for knowledge per se and for desirable social practice. "Knowledge outcomes" may include: product and process change, "enhanced capacity to act," and individual and collective knowledge that ranges from tacit to explicit along a continuum. Outcomes for social practice imply creation of new social practices that appear around knowledge conversion. An important precondition here is a deep interaction between community members who by bringing in specific tacit knowledge from diverse social practices can amplify their knowledge. However, not much is known about the role of knowledge conversion for the emergence of social practices.

In this article, we exemplify how amplification of individual knowledge through the Positive Deviance (PD) approach can influence changes in a wider social context. Toward this end, the next section explains the essence of the PD approach, followed by the cases of Vietnam and Argentina to demonstrate how tacit knowledge was identified and amplified to combat childhood malnutrition and reduce school dropouts.

## 3. Positive deviance approach to solve social problems

The *Positive Deviance* (PD) approach is premised on the belief that in every community there are certain individuals or groups whose uncommon behaviours and strategies enable them to find better solutions to problems than their peers, while having access to the same resources and facing worse challenges (Singhal and Wang (in press), Pascale et al. (2010). "Positive deviants," against overwhelming odds, find ways to solve problems in a more effective manner than their peers. They are "deviants" because their uncommon behaviours are not the norm; and they are "positive" because they have found ways to effectively address the problem, while most others have not. In other words, identifying outstanding micro-behaviours and then amplifying them from an individual into a collective knowledge domain lies at the heart of the PD approach.

The PD behaviours evoke innovations in the social, technical, institutional, organizational and policy areas (Ochieng, 2007). Previous studies have investigated the role of the PD approach for dealing with such complex social challenges as child malnutrition (e.g. Mohammed Imran (2014), Kanani and Popat (2012); school dropouts (Dura and Singhal, 2009); and human trafficking (Singhal and Dura, 2009). Further, the PD approach was found to be of great value for (but not reduced to) the issues of public health and health care e.g. Lindberg and Schneider (2013) and Singhal (2010); hospital knowledge management (Griffith et al., 2013), agrarian development (Ochieng, 2007), and environmental protection (Walls and Hoffman, 2013).

The PD approach has recently got more attention both from the practitioners and academics (Singhal, in press). Meanwhile practitioners see its value in finding solutions that would lead to organizational or community transformation, the academics point to the importance of PD for questioning conventional social science practices, reframing questions, dealing with bounded rationality, and overcoming analysis-paralysis (Singhal and Bjurstrom, 2015). The PD approach focuses on outlier behaviors, seeking answers beyond the normal curve (Singhal, 2013). However, the available literature on PD is still scarce, and more needs to be done to deepen the conceptual underpinnings of this approach. To understand the PD approach, and how tacit knowledge can be identified and amplified to solve complex social problems, let us consider the stories of Vietnam (Mackintosh et al. (2002); Singhal et al. (2009)) and Argentina (Dura and Singhal, 2009).

## 4. Discovering hidden insights in Vietnam

In December 1990, Jerry Sternin and his wife Monique arrived in Hanoi to open an office for Save the Children, a U.S.-based NGO. Their mission: To implement a large-scale program to combat childhood malnutrition in a country where 65% of all children under the age of five were malnourished. The Vietnamese government had learned from experience that traditional feeding programs were not sustainable. When the programs ended, the gains usually disappeared. As traditional methods of combating malnutrition do not yield quick and

sustainable results, the Sternins wondered if the concept of positive deviance, developed a few years previously by professor Marian Zeitlin might hold promise (Zeitlin et al., 1990).

Childhood malnutrition rates were high in Quong Xuong District in Thanh Hoa Province, and the Sternins decided to begin there. After several days of trust-building and consultation with local officials, four village communities were selected for a nutrition baseline survey. Armed with six weighing scales and bicycles, health volunteers weighed some 2,000 children under the age of three in four villages in less than four days. Their locations were mapped and a growth card for each child, with a plot of their age and weight, was compiled. Some 64% of the weighed children were found to be malnourished. The Sternins asked the quintessential PD question: *Are there any well-nourished children who come from very, very poor families?* The response: Yes, indeed, there are some children from very poor families who are healthy! They are few in numbers but they do exist.

The poor families in Thanh Hoa that had managed to avoid malnutrition without access to any special resources would represent the positive deviants. What were these PD families doing that others were not? As part of self-discovery, community members visited six of the poorest families with well-nourished children in each of the four villages. If the community self-discovered the solution, they were more likely to implement it. Their discovery process yielded the following key practices among poor households with well-nourished children:

- Family members collected tiny shrimps and crabs from paddy fields and added them to their children's meals. These foods are rich in protein and minerals.
- Family members added greens of sweet potato plants to their children's meals. These greens are rich in essential micronutrients.

Interestingly, these foods were accessible to everyone, but most community members believed they were inappropriate for young children. Further,

- PD mothers were feeding their children smaller meals three to four times a day, rather than the two big customary twice a day; and
- PD mothers were actively feeding their children, rather than placing food in front of them, making sure there was no food wasted.

With best practices discovered, the natural urge was to disseminate this knowledge. Such was done through household visits, attractive posters, and informational and educational sessions. However, such "best practice" solutions engendered resistance from most households as they did not fit with their established practices. How could one overcome this resistance? One evening as the discussion was winding down, a sceptical village elder observed: "A thousand hearings isn't worth one seeing, and a thousand seeing isn't worth one doing." On the car ride back to Hanoi, the Sternins talked about the sagacity of the elder's remark. Could they help design a nutrition program which emphasized *doing* more than *seeing* or *hearing*?

A two-week nutrition program was designed in each of the four intervention villages. Mothers, whose children were malnourished, were asked to forage for shrimps, crabs, and sweet potato greens. Armed with small nets and containers, mothers waded into the paddy fields. The focus was on action, picking up the shrimps and crabs, and shoots from sweet potato fields. In the company of positive deviants, mothers of malnourished children learned how to cook new recipes using the foraged ingredients. Again, the emphasis was on *doing.* An opportunity was created for people to practice the self-discovered behaviours that delivered better outcomes. Just knowing about them was not enough.

Before these mothers fed their children, they weighed them, and plotted the data points on their growth chart. The children's hands were washed, and the mothers actively fed the children. No food was wasted. Some mothers noted their children seemed to eat more in the company of other children. When returning home, mothers were encouraged to give their children three or four small meals a day instead of the traditional two meals. Such feeding and monitoring continued for two weeks. Mothers could visibly see their children becoming healthier. The scales were tipping!

From the original four communities in Thanh Hoa, the project was expanded to another 10 adjacent communities. In these communities, the Sternins insisted that the community members engage in a process of self-discovering the PD behaviours, as opposed to importing them from neighbouring communities. They had

realized that "the process of self-discovery was every bit as important as the actual behaviours uncovered" (Pascale et al. (2010), p. 42). Malnutrition decreased by an amazing 85 percent in the first 14 PD communities. Over the next several years, the PD intervention became a nationwide program in Vietnam, helping over 2.2 million people, including over 500,000 children improve their nutritional status.

## 5.  Reducing School Dropouts in Argentina

In 2000, a first grader in Argentina's rural province of Misiones would have a 3 in 4 chance of getting to 3rd grade and 1 in 2 chance of making it past the 6th grade. What explained this sharp school dropout rate in Misiones? The answers lay in the deeply-ingrained traditional roles that young children in Misiones played in local agriculture which supported family livelihoods. School-going children dropped out of school to help plant the branches on which cassava, a staple food in North-eastern Argentina, grows; and played a key role in harvesting tobacco which required squatting low to pluck tobacco leaves from the bottom (a task that children carried out with relative ease). For parents, school attendance for their children was a relatively low priority. Survival took precedence over education.

However, not every elementary school in Misiones had such high dropout rates. Some schools did better e.g. the school where teacher Ramon Garcia was an active community citizen. After school hours, Mr. Garcia could often be seen at his students' home, sipping a cup of mate (a cultural practice in Argentina in which one shares an herbal infusion sipped with a metal straw from a hollow gourd). He might ask parents about the well-being of the family pig that appeared to be pregnant and about the tobacco harvest, how much they were selling it for per kilo? Mr. Garcia might encourage Manuel and Lydia, the parents of his ward whom he knew on a first name basis, to continue sending their child to school. The boys and girls in Mr. Garcia's class, as well as their parents, know that Mr. Garcia believed in their potential, and would go the extra mile to encourage their continued presence in school, even when they were absent. Mr. Garcia's behaviours sounded like PD behaviours.

"Senor, Argentina no es Vietnam [Sir, Argentina is not Vietnam]. Your positive deviance approach will not work here in Misiones!" bellowed a senior female teacher. She explained that the teachers haven't been paid in months. The parents of these children who drop-out were disinterested. And that Sternin knew nothing about their problems. Other teachers, with crossed arms and defiant looks, nodded in agreement. Jerry Sternin's story about the success with the positive deviance approach in successfully combating childhood malnutrition in Viet Nam was met with scepticism and resistance in Misiones.

"Senora, lo que usted dice es absolutamente verdad!" [Madam, what you have said is absolutely true], Jerry replied. However, he knew that some of those gathered in the room have been able to retain over 85% of your students. Jerry was sure that the solution to their problem already lurked in that room. An elder teacher noted, that teachers were often blamed for student drop-outs by both the parents and school administrators. But Sternin doubted that it was the case in every drop-out situation and at every school. He humbly admitted that PD was not a magic bullet. Yet, by looking at elementary schools in Misiones that were able to retain and graduate more students without access to any special resources, they might get somewhere.

By the time the day ended, the tone of the meeting had changed dramatically. Some participants noted they looked forward to continuing the discussion the next day. The most surprising for Jerry was that some teachers asked if they could invite parents of some school-going children. Earlier in the day, the teachers had blamed the parents as being the cause of the drop-out problem. Now they felt that including parents in this workshop might bring them closer to a solution.

On the second day of the workshop, 22 parents joined the meeting. Suspicious of the teacher's invitation, they looked palpably nervous. They were not sure what to expect, and didn't know how they could contribute. As poor subsistence farmers, they were certainly not used to being asked for their opinion. Yet as happens in many iterations of the PD approach, the less likely suspects—in this case the parents—were full of ideas and contributions. The parents discussed their own experiences in overcoming hardships to keep their children in school, and identifying ways that their neighbours had been able to do the same. And thus began the process of self-discovery. In Alem and San Pedro, two communities in Misiones, self-discovery was introduced to the workshop participants, followed by a field-based PD Inquiry (Dura and Singhal, 2009).

First, the problem was defined. Workshop participants, comprising parents, teachers, and administrators, agreed on a definition of the problem: "Schools in Alem retain only 56% of students through grade three." Next, participants agreed on a desired outcome: "Schools in Alem would achieve retention rates of 75% or higher."

Second, the group was charged with determining if Positive Deviant schools existed in Alem. To determine if there were schools with retention rates of 75% or higher, each group was given a calculator and a list of schools with data on the number of students enrolled in grades one to three from 1999 to 2001. They would then identify these schools and rank them accordingly. After calculating retention rates for all 63 schools in Alem, eight potential PD schools with retention rates ranging from 78% to 100% were identified. Through another round of review, six were narrowed as being PD schools (Dura and Singhal, 2009).

Third, the teams set out to discover uncommon practices by visiting the six PD schools. The first day they carried out in-depth interviews with teachers and the headmaster/headmistress, and observed classes in session. Parent participants also interviewed parents from PD schools at their homes. The teacher-parent teams were to make general observations regarding the use of physical facilities, food distribution, general cleanliness, and condition and utilization of school materials (Sternin, 2003).

Several groups reported that "teachers in the PD schools showed unusual respect for their students", rather than identifying the specific uncommon behaviours/strategies through which that respect could be observed. Sternin (2003) challenged the group to identify specific, verifiable practices that led to good outcomes, asking: "Since all schools treat their students with love and respect, can we assume that this issue has no impact on retention levels and that schools with 56% retention rates treat their students in the same manner as those with a 100% retention rate?"

This PD Inquiry process helped the group arrive at a more nuanced description of common practices; e.g. how was respect for students operationalized. In a PD school, for instance, teachers warmly greet parents whenever they visit the school. In turn, parents feel comfortable approaching the child's teacher. Teachers also ask parents to RSVP to invitations for meetings, and when parents do not RSVP, teachers go out of their way to contact them. The PD inquiry yielded specific and verifiable practices in the way teachers and parents interacted with students, in the way classes were taught and assessed, in how the community was involved, and how children's nutrition schedule was constructed (See Table 1).

**Table 1:** A Comparison of Common and PD Practices in Schools

| Area of Impact | Common Practices | PD Practices |
|---|---|---|
| **School–Family Relations** | Parents with little or no formal education are not given opportunities to contribute to the educational process. | All parents contribute to the school. Parents hold skills workshops (i.e. sewing, woodworking). They also help maintain the school building (i.e. mend fences) and arrange student games/ parades. |
| **Teaching Methodology** | The whole class is given the same assignment to work on, regardless of ability or age. | The class is broken up into groups. Assignments are modified to reflect the abilities of the students in the group. |
| **Degree of Community Involvement** | There is little communication between the school and community leaders. | Schools identify community leaders (i.e. priest)s and discuss problems with them. Community leaders are actively involved in increasing retention. |
| **Nutrition** | Children are provided with one meal at school (lunch). | Schools recognize that hungry children have difficulty learning. The school provides breakfast instead of lunch. |

Upon conclusion of the PD school visits, and identification of common PD practices in schools with high retention rates, an action plan was developed by parents, teachers, and administrators. Next, the PD program

was designed and implemented, building upon the foundation of making the local knowledge and solutions actionable. In subsequent years, school dropout rates in Misiones dropped significantly (Sternin, 2003).

## 6. Discussion: Amplifying tacit knowledge in the PD

The Vietnamese and Argentina positive deviances case demonstrates how the subtle knowledge of "deviant" individuals, once identified, became explicit knowledge and manifest itself in collective practice. This identification and amplification of tacit knowledge embraced several stages. The first stage involves a recognition that unearthed tacit knowledge can help the community breakout of their normative "mental prisons." The second stage refers to identifying the positive deviants—the carriers of the authentic experience and valuable tacit knowledge. The third phase suggests creation of particular conditions to facilitate the "paradigm shift"—that is, conscious-raising among community members who themselves see the value of questioning old deep-seated attitudes and praxis, replacing them with newly-discovered insights. The fourth phase of knowledge amplification occurs as more and more community members embrace the new practice, spurred by the self-discovery of its beneficial outcomes. Finally, the adoption of new knowledge is being justified by the social proof that other ordinary people like them, within their own community, have solved the problem. The discussion of these stages is summarized in the Table 2, and presented in more detail below.

**Table 2:** The phases of tacit knowledge amplification through the Positive Deviance Approach

| Phase of knowledge amplification | Cases of Vietnam and Argentina |
| --- | --- |
| Elimination of barriers | "Mental prisons" |
| Identifying knowledge carriers | "Positive deviants" as knowledge spanners |
| Creating conditions | Early inclusion & broad participation |
| Mechanism of knowledge transfer | Self-discovery |
| Justification mechanism for the new knowledge adoption | Social proof |

### 6.1 Breaking the shackles of mental prisons

Widespread social change involves change at two levels: at the societal and normative group level and at individual level (Amado and Ambrose, 2011) where the concerns are more grounded in the subjective, experiential, cognitive-affective experiences. In essence, social change involves a psychosocial process where social phenomena are intertwined with the concerns of individuals who are interconnected through personal networks. A close study of the Vietnam and Argentina cases suggests that at least two psychosocial characterized the process of knowledge amplification and conversion: a breaking out of existing mental prisons, and the experience of self-discovery.

Amplification of tacit knowledge is often thwarted by traditional perceptions and habitual ways of doing things. Even though Nasirudin's donkeys stalked before the eyes of the customs inspector every day, they were "unseen" on account of mental traps or cognitive biases (Kahneman and Tversky, 1996). These cognitive biases lead people to create distorted subjective social realities, and to make decisions and choices that are illogical and irrational.

Morgan (1998) used the metaphor of "psychic prisons" to describe how organizational members become imprisoned by own ideas, thoughts, beliefs and actions. With reference to Plato, Morgan recounts the story of the cave dwellers who have never left their cave. Once permitted to leave the cave, the dweller wouldn't be able to return to his old cave life style, and perhaps deplore the pitiful cave existence of his mates. Yet, when other cave mates are told about the existence of another better reality, they would show scepticism and fear of the unknown. The familiar old cave would make sense for them, while the world existing out there wouldn't. Not daring to experience the new and unknown, people become "cave dwellers" – the hostages of "mental prisons."

Both PD narratives suggest presence of such "mental prisons" caused by prejudice, established cultural traditions and undereducation. In the case of Vietnam it was disregard of the greens of sweet potato plants and small shrimps as child food - the simple solution available to all community members. In the case of Argentina, it was disbelief to the new PD approach: "Argentina is not Vietnam", and therefore the PD approach won't work here. Teachers seeing parents as a major cause of school drop outs, and not as a potential ally—is another example of a "mental prison."

To facilitate amplification of tacit knowledge and produce widespread social change, it was important to "release" the prisoners from their "mental prisons" – i.e. to change the ritualistic, habitual way of thinking and acting. But how to do so? Akin to the case of cave dwellers whose original reaction to another better reality was met with scepticism and distrust. Altering old behaviours and customary thinking in Vietnam and Argentina required a credible example that better nutrition outcomes could be achieved, and a safe setting where the actors could dare to question the old ways in order to discover new possibilities.

## 6.2 "Positive deviants" as knowledge spanners

Often individuals whose behaviour deviates from group norms receive social disapproval. Such is particularly the case with "negative" deviance, i.e., when an individual engages in behaviours that are socially disapproved, undesirable, and detrimental (e.g. stealing, hazing, or incivility). However, the situation we observe in the cases of Vietnam and Argentina is one of "positive" deviance, where individuals were identified that engaged in behaviours whose outcomes were desirable and beneficial (e.g. well-nourished and healthy children). These individuals, like Nasiruddin's donkeys, were hidden from plain view. Further, their actions, on account of it being uncommon and of the outlier kind, served as the source of valuable tacit knowledge which when amplified held the potential to produce widespread good for the whole community.

While new knowledge is usually suspect (Hawkins and Rezazade, 2012), the positive deviant households in Vietnam (whose children were well-nourished against all odds) served two key roles: First, they were the source of the valuable tacit knowledge that held salience and relevance for the whole community. Secondly, their perceived similarity with others in the community granted them trust and legitimacy. When mothers of malnourished children discovered what ordinary mothers like them (of low socio-economic status, for instance) did in order to have well-nourished children, they were able to more easily unlock their "mental prisons". However, the mere identification of the carriers of valuable knowledge alone couldn't grant the change in thinking and action. It was important to create conditions for triggering a more rippling social change.

## 6.3 Creating enabling conditions for people-driven change

Introducing a big-scale change program in a community of networked individuals is not an easy task. Unlike organizational development programs, where leaders can use legitimate power to channel employee behaviours in a given direction, implementation of change in the social groups and communities requires invitation, a free-will consent, and participation. Proponents of the transitional approach to the management of change remark that one can't make people change their long-established ways of addressing, processing and solving their problems (Amado and Ambrose, 2011). People can change their customs and habits only when they experience a deep need to do so.

The human mind undergoes a highly complex mix of cognitive and emotional pulls in responding to change—whether complying with or resisting it. This process involves human perception and feelings as well as knowledge of social norms. To assist humans to recognize the need for and possibility of change, one can create particular conditions that may help to increase chances that people "will make changes themselves" (ibid., p. xviii). These conditions should invite people to explore the terrains of the unknown: to see things in a new perspective, to question their old customary ways of doing things, to understand the consequences of the habitual behaviours, and to investigate other existing opportunities which transform the deep-seated beliefs, attitudes and praxis.

In the Vietnamese PD case such conditions were necessary to unshackle mental prisons and for community members to find and adopt new solutions for endemic malnutrition. PD by its very nature is an endogenous change approach--it believes that the knowledge and wisdom to solve the problem resides with the community, not with an external expert change agent. At best the change agent is a facilitator that creates the conditions to bring people together around solving a vexing problem, constantly reminding them that some people among them have already solved the problem, and the collective challenge is to determine who they are, and to discover what they are doing. Therefore, fundamentally PD facilitation begins with a broad invitation to, and inclusion of, a diverse set of community members in the process of solution elaboration and problem solving. In Vietnam, community members were involved in weighing the children to discover the scope of the problem, mapping and identifying households that were poor but had well-nourished children (i.e. determining the PDs), and discovering what is it their peers were doing that resulted in well-nourished children (i.e. the discovery of PD behaviours). Further, to translate the discovered knowledge into action

mothers of the undernourished children participated in a wide range of activities e.g. picking up tiny shrimps and crabs, washing them, bringing them to a cooking session, making food together with the PD mothers, actively feeding their children, breaking the meals into smaller portions and increasing the frequency of feeding, and so on. Further, they monitored the weight of their children observing their improving nutritional status. Similarly, in the story of Argentina, parents of the schoolchildren were invited, right off the bat, to participate in the process of determining PDs, in discovering their PD behaviours and practices, and in making the discovered wisdom actionable by entering into contracts with teachers, participating in school activities, and the like. The parents served as equally important participants as the teachers and provincial educational officers in the process of common discovery of the PD practice.

Early inclusion and broad participation in the problem-solving helped community members to increase their understanding about the essence of the problem and to give each participant the feeling of "ownership" in the collaborative search and elaboration of its solution.

## 6.4    Self-discovery as the mechanism of knowledge transfer

The Vietnam and Argentina cases revealed the importance of community members being intimately involved in the process of knowledge amplification, where major mechanism of knowledge transfer was their own self-discovery of the solutions that resided among them. Once the solutions were discovered, they were "owned" by the community members—that is, they did not have to "buy-into" an external change agency's prescriptions.

Common top-down, expert-driven, outside-in knowledge-sharing practices didn't seem to be effective in Vietnam. Simple telling people what and how they should do wouldn't bring the desired results either. In other words, in order to trust the new knowledge and change the customary practice it was important that community members discovered the new knowledge empirically self. Why?

Thomas Kuhn (1996) meant that the discovery process is based on the subjective and individual grounds, and involves some "mystical experience" that feeds the decision of the person engaged in discovery. Referring to Polanyi (1962), we can understand discovery in terms of an "act of personal knowing". Polanyi argues that the humans engage in the efforts of knowing due to a "sense of obligation towards the truth: by an effort to submit to reality" (p. 63).

Whereas Kuhn described the discovery as the "mystical experience", Polanyi provided rather a detailed description of the discovery process (for the summary see e.g. Milavec (2006). The discovery process can be compared with "trying to remember a forgotten name" (ibid., p. 478). While seeking answers to a problem, the inquirer makes choices about investigative procedures and the design of experiments. Using practical intuition is vital in making robust choices. The recognition of the discovered solution produces intellectual satisfaction, relieves the strain of the long search period, and bursts out as "Eureka!" experience. The discovery represents a contact with a reality that exists independent of the mind of the knower, and hence its truth can best manifest in the future.

Polanyi's description of the discovery process refers mainly to the scientific discovery triggered by the "intellectual passions" of the investigator. However, this description could be equally applied to understand how community members experienced their discovery of the new knowledge/ practice. Like scientific investigators, the community members dedicated their time and intellectual efforts in search of the new solution. Further, they participated in the investigating procedures and designed the experiments: by visiting and studying the PD families with well-nourished children, by observing and interviewing others. Further, it was the practical intuition that helped community members identify "common" and "uncommon" practices. These elements of discovery, together with the feeling of ownership and participation provided emotional and intellectual satisfaction to the participants, and that is why empirical self-discovery was an important mechanism of learning and amplification of knowledge within PD approach.

## 6.5    Social proof - the justification mechanism for new knowledge adoption

Amplification of tacit knowledge cannot be considered complete without the new knowledge being anchored in the changed behaviour. The change of customary routines often requires justification to prove that the new patterns are legitimate and trustworthy.

When people are in doubt about a course of action, they want to know what others are doing—especially their peers. People are inclined to consider the adoption of behaviors in a given situation if they see others performing it. Such behavior is triggered by the principle of social proof (Cialdini, 1993). This principle in particular applies to our judgement about correct and appropriate behaviour that lets us avoid making unnecessary mistakes. The social proof principle is known to operate best under the conditions of uncertainty and similarity. The ambiguity of the situation, coupled with a feeling of being unsure, influences people to perceive the actions of others as correct and encourages them to imitate them. In addition, the decision to act like others is strengthened when people observe behaviour of those who are similar—i.e. "just like them."

Social proof was an important condition for the knowledge to be amplified in the cases of Vietnam and Argentina. The driving force for the adoption of new knowledge and practices among community members was that someone like them, with similar socio-economic and cultural attributes had solved the problem, and so could they. When traditional and customary ways of doing things become institutionalized in the community, the discovery of new knowledge inevitably leads to a collision of knowledge systems. To break the tradition and adopt the new knowledge in practice requires people to justify their choices. One must prove (to themselves and others) that the new patterns of behaviour are proper, legitimate and efficient (Tetlock, 1983). In this way, social proof serves as a justification mechanism for mobilizing the self-discovered knowledge. Providing justification for the adoption of new knowledge in practice leads to behaviour change and thus completes the amplification of tacit knowledge into a collective domain.

## 7. Implications and agenda for future research

In the present paper, we argued that often the answer to solve social problems exists within the community as tacit knowledge, but it is hidden from plain view. By identifying this tacit knowledge, and then externalizing it into a collective domain, the solution space for problem solving can be greatly expanded. Through an analysis of the problem-solving efforts in Vietnam and Argentina, we demonstrated how tacit knowledge can be identified and amplified through the Positive Deviance (PD) approach. The process of tacit (indigenous) knowledge amplification included removing the barriers of cognitive biases ("mental prisons"), identifying knowledge spanners (the "positive deviants"), and creating conditions of early inclusion and broad participation to nurture externalization of knowledge. Additionally, self-discovery served as the major mechanism of knowledge transfer, and social proof – as the justification mechanism to complete the process of knowledge amplification by adopting the new knowledge in practice.

Understanding the PD approach through the lens of knowledge amplification provides an opportunity to view PD as knowledge management praxis, capable of addressing complex socio-economic problems by affecting the way social groups think and behave. Seeing PD in terms of a knowledge management praxis increases the span of knowledge management tools at hand for the economic development of the countries and communities in distress (Cortez et al., 2011), Further, being aware that the PD approach facilitates the amplification of knowledge positions it as a managerial intervention, and allows for the coordination of knowledge in various social contexts and organizational settings. From this point of view, one can elaborate practical solutions for enabling the flow of tacit knowledge into a collective domain, as well as exposing and managing it through reporting practices (Slettli and Grønhaug, 2016). In order to advance our understanding about PD as a knowledge management praxis, further research is necessary. Some questions of interest might be: How can one obtain leveraging effect from the knowledge developed through the PD intervention? Can this effect be measured, and if so, how? What is the effect of knowledge amplification for achieving resilience of communities? What are the characteristics of environments/contexts that facilitate the amplification of tacit knowledge most effectively and efficiently? What are the advantages and disadvantages of the PD approach compared with other knowledge management practices aimed at improving situation in the impoverished contexts? These and other questions set a manifold agenda for future research.

## References

Amado, G. & Ambrose, A. 2011. *The Transitional Approach to Change*, London: Karnac Books.
Cialdini, R. B. 1993. *Influence : the psychology of persuasion*, [Rev. ed.]. New York: Quill.
Cortez, E.-M., Britz, J. & Mullins, P. 2011. Applying knowledge management strategies to economic development in sub-Saharan Africa. *Inkanyiso: Journal of Humanities and Social Sciences,* 3(2)**,** pp 140-147.
Dura, L. & Singhal, A. 2009. Will Ramon finish sixth grade? Positive deviance for student retention in rural Argentina. *Positive deviance wisdom series,* 2(1-6.

Griffith, J., Fear, K., Lammers, E., Banaszak-Holl, J., Lemak, C., Zheng, K. & Mazer, S. 2013. A Positive Deviance Perspective on Hospital Knowledge Management: Analysis of Baldrige Award Recipients 2002-2008. *Journal of Healthcare Management,* 58(3)**,** pp 187-203.

Hawkins, M. A. & Rezazade, M. H. 2012. Knowledge boundary spanning process: synthesizing four spanning mechanisms. *Management Decision,* 50(10)**,** pp 1800-1815.

Kahneman, D. & Tversky, A. 1996. On the reality of cognitive illusions. *Psychological Review,* 103(3)**,** pp 582-591.

Kanani, S. & Popat, K. 2012. Growing Normally in an Urban Environment: Positive Deviance among Slum Children of Vadodara, India. *The Indian Journal of Pediatrics,* 79(5)**,** pp 606-611.

Krogh, G. v., Ichijo, K. & Nonaka, I. 2000. *Enabling knowledge creation : how to unlock the mystery of tacit knowledge and release the power of innovation*, Oxford: Oxford University Press.

Kuhn, T. S. 1996. *The structure of scientific revolutions*, 3rd ed., Chicago: University of Chicago Press.

Leonard, D. & Sensiper, S. 1998. The role of tacit knowledge in group innovation.(Special Issue on Knowledge and the Firm). *California Management Review,* 40(3)**,** pp 112.

Lindberg, C. & Schneider, M. 2013. Combating infections at Maine Medical Center: Insights into complexity-informed leadership from positive deviance. *Leadership,* 9(2)**,** pp 229-253.

Mackintosh, U. A. T., Marsh, D. R. & Schroeder, D. G. 2002. Sustained positive deviant child care practices and their effects on child growth in Viet Nam. *Food and nutrition bulletin,* 23(4 suppl2)**,** pp 16-25.

Milavec, A. 2006. How Acts of Discovery Transform Our Tacit Knowing Powers in Both Scientific and Religious Inquiry. *Zygon,* 41(2)**,** pp 465-486.

Mohammed Imran, M. S., Subrahmanyam G., Jayashree Seeri, Pradeep C., Mini Jayan 2014. Positive Deviance Approach and Supplementary Nutrition under ICDS Scheme on Improvement of Nutritional Status of 2–6 year Children in Rural Bangalore. *National Journal of Community Medicine,* 5(1)**,** pp 109-113.

Morgan, G. 1998. *Images of organization*, Executive ed., London: Sage Publications.

Nonaka, I. 1994. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science,* 5(1)**,** pp 14-37.

Nonaka, I., Umemoto, K. & Senoo, D. 1996. From information processing to knowledge creation: A paradigm shift in business management. *Technology in Society,* 18(2)**,** pp 203-218.

Nonaka, I. & Von Krogh, G. 2009. Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory. *Organization Science,* 20(3)**,** pp 635-652.

Ochieng, C. M. O. 2007. Development through Positive Deviance and its Implications for Economic Policy Making and Public Administration in Africa: The Case of Kenyan Agricultural Development, 1930–2005. *World Development,* 35(3)**,** pp 454-479.

Pascale, R. T., Sternin, J. & Sternin, M. 2010. *The power of positive deviance: How unlikely innovators solve the world's toughest problems*: Harvard Business Press.

Polanyi, M. 1962. *Personal knowledge : towards a post-critical philosophy*, Corr. ed., Chicago: The University of Chicago Routledge & Kegan Paul.

Polanyi, M. 1967. *The tacit dimension*, Garden City, N. Y: Doubleday.

Singhal, A. 2010. Communicating what works! Applying the positive deviance approach in health communication. *Health communication,* 25(6-7)**,** pp 605-606.

Singhal, A. 2013. The Value of Positive Deviations. *Monthly Developments,* June)**,** pp 17-20.

Singhal, A. in press. *Positive Deviance: A New Paradigm for Social, Organizational, and Behavioral Change*: Sage Publications.

Singhal, A. & Bjurstom, E. 2015. Reframing the Practice of Social Research: solving complex problems by valuing positive deviation. *International Journal of Communication and Social Research* 3(1)**,** pp 1-12.

Singhal, A., Buscell, P. & Lindberg, C. 2014. *Inspiring change and saving lives : the positive deviance way*: Plexus Press.

Singhal, A. & Dura, L. 2009. *Protecting Children from Exploitation and Trafficking: Using Positive Deviance Approach in Uganda and Indonesia*: Save the Children in collaboration with Social Justice Initiative.

Singhal, A., Sternin, J. & Dura, L. 2009. Combating malnutrition: Positive deviance grows roots in Vietnam in the land of a thousand rice fields. British Columbia, Canada: The Communication Initiative Network.

Singhal, A. & Wang, H. in press. An introduction to the volume. *In:* Singhal, A. (ed.) *Positive Deviance: A New Paradigm for Social, Organizational, and Behavioral Change.* Sage Publications.

Slettli, V. K. & Grønhaug, K. 2016. On the two perspectives on coordination of knowledge flows: knowledge-enabling and control. *Beta: Scandianvian Journal of Business Research,* 30(2)**,** pp 158-173.

Sternin, J. 2003. Positive deviance and student retention and educational enhancement program,  (Unpublished report).

Tetlock, P. E. 1983. Accountability and complexity of thought. *Journal of personality and social psychology,* 45(1)**,** pp 74.

Tsai, M.-T. & Li, Y.-H. 2007. Knowledge creation process in new venture strategy and performance. *Journal of Business Research,* 60(4)**,** pp 371-381.

Tsoukas, H. & Vladimirou, E. 2001. What is Organizational Knowledge? *Journal of Management Studies,* 38(7)**,** pp 973-993.

Walls, J. L. & Hoffman, A. J. 2013. Exceptional boards: Environmental experience and positive deviance from institutional norms. *Journal of Organizational Behavior,* 34(2)**,** pp 253-271.

Zeitlin, M., Ghassemi, H. & Mansour, M. 1990. Positive deviance in child nutrition. *Tokyo: The United Nations University*.