

The Thai traditional learning process in folk culture: implications for the companion modeling approach¹

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Résumé : Depuis 2001, la méthode de modélisation d'accompagnement est utilisée en Thaïlande. Cette méthode a été testée et développée auparavant dans de nombreux pays et on observe des résultats qui sont communs à toutes les expériences (aide à l'apprentissage collectif, utilisation des simulations informatiques pour faciliter les discussions). Cependant les résultats obtenus semblent dépendre grandement du contexte social et culturel.

Cet article présente une recherche sur l'utilisation de la modélisation d'accompagnement en milieu Thai. Afin de mieux comprendre les résultats obtenus lors des expériences nous avons mené une étude pour comprendre comment les modes d'apprentissage des agriculteurs. Ce travail est effectué à partir d'une analyse de textes religieux, de littérature traditionnelle, de contes et chants populaires. Dans un deuxième temps nous tentons d'analyser nos observations à la lumière de ces enseignements. Il semble que la méthode de modélisation d'accompagnement soit assez adaptée aux modes d'apprentissage car elle est basée sur l'expérimentation et le jeu. Cependant elle ne semble pas favoriser le processus de discussion collective, en raison de la combinaison d'une individualisation de l'apprentissage, de très fortes contraintes sociales et d'une très grande importance accordée à l'évitement de conflits.

Abstract : A group of researchers working in the field of renewable resource management tries to apply simulation tools when dealing with these complex systems in order to understand the institutions and norms that drive the interactions among actors, and consequently between actors and their environment. This method can be used in many cultural contexts and leads to generic outputs (collective learning process, good understanding of computer simulation by stakeholders). But the effectiveness of the method seems to be very dependent on the social and cultural context. We decided to do some research on the learning process in Thai traditional culture. It aims at identifying and understanding such villagers' worldview through religious texts, traditional literature and poetry, folk songs and music, ceremonies, and festivals. We try to understand how the Thais interpret their social environment and learn to act accordingly within it. It seems that the companion modeling approach is quite successful in the Thai learning context because the method is based on experience and fun derived from the game process, but the collective discussion aspect that is supposed to emerge from the use of this tool does not really occur, probably because of individualism, a strong cultural structure, a fundamental culture of conflict avoidance, and difficulty in distinguishing reality from virtual scenarios.

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The scientific background of companion modeling is presented in the first chapter of this book. The inspirational sources of this approach come on the one hand from the community of researchers working on common property and co-management applied to the management of renewable and natural resources and on the other hand from the community of researchers working on multi-agent simulations, policy simulations, role-games, and participatory modeling. These communities are strongly influenced by results obtained in different cultural contexts, and they sometimes conduct anthropological studies to understand the institutions and norms that drive the interactions among actors, and consequently between actors and their environment. However, the companion modeling approach was conceptualized and then assembled by Europeans. Since the beginning and thanks to the CIRAD mandate, it has been tested in various cultural contexts, in Senegal, Madagascar, Vietnam, France, and then Thailand. These first experiences led to a paradox: on the one hand, the method can be applied in many cultural contexts and can lead to generic outputs (collective learning processes, a good understanding of computer simulations by stakeholders, etc.) and, on the other hand, the management of the different steps of the method seems to be very dependent on the social and cultural context.

As we decided to use this companion modeling approach in Thailand for natural resource management issues, we did some research on the learning process in Thai traditional culture. How do we understand what villagers believe to be important? What concerns or motivates the villagers? How do they perceive the world in terms of the nature of humans, and the relationship between one person and another, humans and nature, and humans and a supernatural being?

This paper is organized in two parts. The first part aims at identifying and understanding such villagers' worldview through religion, traditional literature and poetry, country music, games and folk plays, ceremonies, and festivals. At the same time, we will highlight rules, plans, and categories that influence how the Thais interpret their social environment and learn to act purposefully within it. This analysis corresponds to the culture from the northeast of Thailand. In the second part of the paper, we try to relate the main observations presented in the first part to the companion modeling approach: Which parts of the companion modeling approach and the associated methodology suit the Thai learning process? Which parts do not suit it? What indications can be derived to improve the methodology and its application to the Thai context?

Fundamental aspects of the learning process in northeast Thailand

Thai ways of thinking

Life is just for fun. One Thai national characteristic that almost all research studies have defined is enjoyment of living (*sanuk*). Thais consider that everything happening in their life is for fun. The person who knows how to do something in a funny way will be socially accepted. Thai folk culture demonstrates well the "just-for-fun" life style. Every step of life, even death, is inseparable from playing. Therefore, working must be done in a pleasant way. When gathering together to work or to celebrate any event, Thais are skilled at creating simple entertainment to cheer up the atmosphere. So, playing serves for both work and social adaptation. In the old days, Thais were mostly peasants and lived in a rural agricultural society in which rice cultivation was the dominant activity. Villagers gathered together to work at critical periods of the rice cycle when widespread labor was needed within a very short time, for example, for soil preparation, transplanting, the harvest, and rice polishing. To keep people working faster and more efficiently in pleasant and relaxed conditions, folk songs were created and chanted among them to provide rhythm and entertainment. During rest hours, peasants sometimes separated into two groups, women and men, and exchanged improvised songs in the form of short and simple poems, such as in "*Phleng Ten Kam Ram Kiew*." They laughed at words or expressions with double meanings or danced together whenever they felt like doing so. After harvesting, they had to prepare the yard for polishing rice. The way villagers trampled on the yard regularly and simultaneously gave birth to "*Phleng Song Fang*." The family that requested help provided food and drink during that special day. This mutual assistance took turns from family to family around the village and normally villagers rarely refused a request for help from their family or neighbors (Jobkrabuanwan 1982). Folk plays are always accompanied by folk songs and dances. Special characteristics of folk culture are spontaneity, improvisation, simplicity, and outspokenness.

Normally, a folk play can take place spontaneously anywhere (paddy field, yard of a house or temple, even on a row boat during the high-tide season) or any time (daytime or night time). The Thai language is characterized by monosyllables and a musical tone that are easily compatible with short poems recited in folk songs. Everyone feels free to participate or not at any moment of the folk play. People can stop playing whenever they get bored. The number of players, women or men, is flexible. The most important aspect is that everyone has the same opportunity to rejoice and have fun (Jobkrabuanwan 1982, Sawadiphanit 1991).

Life as a result of previous meritorious acts. If life is just for fun, then how do Thai villagers manage to cope with serious problems that occur frequently in their lives? Since Thai villagers consider themselves Buddhists, the temptation to act according to Buddhist teaching is still highly valued by their mentality. To understand Thai popular Buddhism in its entirety, one must analyze the villagers' intellectual conception of Buddhist principles and doctrine and specify to just what extent Buddhism motivates their daily actions. For the average villager, concepts such as nirvana, the philosophical intricacies of the *dharmma* teachings, or the involved form of meditation have little meaning. Villagers draw more meaning from karma, rebirth, merit, sin, and *anicang* (impermanence). Villagers understand these concepts in simple terms. They believe in them and, as such, these concepts affect their lives. Villagers are certain that their present existence is the result of accumulated actions, both good and evil, in both their former existence and present one. In their point of view, all human beings are born according to their individual karma and thus one should not be jealous or envious of differences in status, rank, power, and wealth. However, it must be stressed that villagers are fully aware that they can change their present status and condition by their own deeds in the present. Their present actions are directed toward bettering their merit position so as to achieve a better life, both now and in a future existence. For Thai people, a better life means one of riches, power, prestige, perfect health, beauty, and very little physical labor (Suphap 1985). It is in expectation of such a life that merit is earned. If sin is higher than merit on one's karma's scale, then a life of poverty and hardship will necessarily follow. Thus, one views his or her condition with a sense of psychological balance, not rebelling against one's condition of birth while at the same time preparing to change and to view the helping of others as a meritorious act. As the villagers are ever-anxious to build up their store of merit, it is quite natural that they strive to tie the merit label to every act possible. Thus, one is impelled to show kindness toward others and render assistance willingly, show compassion towards others and alleviate their suffering, rejoice with those who are fortunate, avoid envy, and preserve equilibrium in the face of other adversity or success and view all without prejudice or preference, thus appreciating that all is subject to karma (Conze 1961, Klausner 1981).

If something happens in an unexpected or unpleasant way, or some serious problems occur in a way in which it is difficult or impossible to find a solution, the Thais just say "*mai pen rai*" (never mind). Thais are able to say "*mai pen rai*" when facing missed appointments and the lack of successful and timely task completion. Certainly, Thais find more psychological fulfillment in the chase than in the attainment. For a voyage or journey that is fun, the end result is less important. Thus, one should not be too discontent or concerned if one is some minutes or some hours late. It is preferable to fulfill one's work or to live in a funny way. To comprehend this attitude, one must realize that one of the central concepts of Buddhist philosophy is *the law of Nature*, something which naturally exists. Whether Buddha will appear or not, it is a natural, unchanging truth that all compounded things are impermanent, stressful, and not-self. Impermanence (*anicang*) means that compounded things are constantly being born and dying, appearing, and passing away. Stressful (*dukkha*) means that people are constantly being conditioned by conflicting and opposing forces. People are unable to maintain any constancy. Not-self (*anatta*) means that they are not a self or intrinsic entity, they merely follow supporting factors (Payutto 1995). For the villagers, they believe in the concept of the transitory nature of the material world in which they live and the uncertainty and impermanence of all. Thus, one must realize the futility of worrying about material things or events. Therefore, each provisional situation is considered as a path way to another provisional one. This will continue successively without ending. Only the enlightenment (*nirvana*) can terminate this cycle of life. But the villagers consider the enlightenment as far beyond their reach, so they are content to attach themselves to life while trying to reduce any stressful suffering by detachment as much as possible from the impermanent nature of the material world.

Confrontation avoidance: social harmony. The Buddhist religion emphasizes the positive virtue of avoiding the extremes of the emotional spectrum. In doing so, Thais believe in performing some meritorious acts. Theoretically, this applies to socially acceptable emotions such as love and friendship as well as socially disruptive emotions such as anger, hatred, and annoyance. Although overt expression of socially accepted emotions is less curbed, it is nevertheless kept well in hand, at least in terms of observable behavior. One endeavors to keep personal relationships and social interactions at a superficial, pleasant, and emotionally neutral level to preserve an aura of emotional contentment. One must not become too emotionally involved, entangled, or engaged, for too deep involvement and attachment can only lead to disappointment and suffering. As happiness translates into tranquillity and peace, to live in a proper and meritorious manner, one should, at the very least, curb the expression of one's antisocial feelings. The fact that villagers live in close and intimate physical and social contact accentuates the need for such behavior. In such an interdependent society in which mutual aid and cooperation are strongly required, overt social confrontation would make it difficult to carry out cooperative activities. Villagers mask their antisocial emotion well and preserve the facade of harmony. A complex of forces within the community is directed at maintaining the set of harmonious human relationships (Klausner 1981).

Even if there is a very strong emphasis in village social life on harmonious human relationships with one's fellow villagers and a concomitant avoidance of overt acts that express anger, displeasure, criticism, and the like, disruptive behavior sometimes does occur. To make others aware of one's anger and discontent, one always uses anonymous ways, for example by intermediate persons, by folk plays, by folk tales, or even by supernatural beings.

Ceremonies, festivals, and folklore: social control and safety valve

Though the Thais avoid overt conflict, they often harbor this conflict. Since the direct display of antisocial feelings is not allowed, Thais have an infinite variety of ways of revealing them in a subtle, devious, and indirect fashion. For example, while preserving a smiling, friendly manner toward the object of one's anger, annoyance, and disagreement, one may practice various options such as poker-faced sarcasm, avoiding contact if possible, and cooperating superficially but using the fine edge of continual postponement or imaginary roadblocks to avoid the reality of assistance. The indirect expression of one's feelings is exemplified in a social procedure called, in Thai, *prachot* or "projected vilification" (Klausner 1981). The individual who has been hurt in some manner does not express his or her displeasure directly but turns it toward another object. A lady will often reprimand a child, whereas, in actuality, her words are meant to apply to another adult. The other adult is aware that the displeasure shown is directed against him or her. *Prachot* often occurs with animals used as a direct method of expressing antisocial emotions. In this case, one will slap a dog and speak angrily to it, but the words are usually directed at another person who, in return, will punish his or her cat and reprimand it with the same words and tone. It's not only emotionally satisfying to play this game, but one is able to preserve an outward semblance of friendly social relationships. People hope that the one who has offended and caused displeasure will receive the message of social warning and mend his or her ways.

Words of rebuke, criticism, and annoyance directed toward others are pronounced only in the confines of the family, or, if these words are expressed openly, they are masked in the form of folk songs or folk tales. The villagers feel free and secure to conceal their thoughts under unrealistic situations. In folk songs, bard singers criticized the ruling class by chanting about the miserable life of peasants who had to work hard to earn money to pay income tax, or of villagers who had to pay tax for collecting vegetables in the village's pond (Wongthet 1975). Folk tales, a rich heritage of folk culture, have provided the rural masses with a socially acceptable psychological release mechanism for their repressed antagonisms, frustrations, and anxieties against authority symbols. The *Siang Miang* tales, known as *Srithanonchai* in the Central region, provide a psychological release for the frustrations and antagonisms of a peasantry subject to the arbitrary power of the ruling aristocracy. Siang Miang, who was born of the peasantry, conquered officialdom through wit, guile, and deceit. Not only did Siang Miang challenge and ridicule authority, he emerged victorious in the battle of wits with the ruling establishment. Most of the time, rulers must rely on the peasants' cunning and genius to solve problems of state. These tales serve to caution the ruling class to appreciate the value of the peasants' practical, common-sense approach to life's problems (Kaewthep 1996). These tales also serve as instructional models of ideal behavior, again enabling the villagers to indirectly caution their

elders, mentors, superiors, and rulers not to abuse their authority and to act in a just and moral fashion so as to justify respect and obedience.

If conflicts are unavoidable, an intermediate person such as the abbot, headman, and family head tries to find solutions that are compatible and flexible for every member of the society. It often appears that the villagers consciously use the spirit world as a means of assuring that harmonious social relationships will be maintained. For example, family members are cautioned to preserve smooth social relationships, because, if they argue, show anger, and cause constant friction, the family spirit will be offended and will bring misfortune to the family. The supernatural world is always used in a manner that removes the responsibility of criticism and punishment from the shoulders of the villagers in instances in which someone is publicly criticized for committing an action detrimental to village security and stability. Such criticism is expressed through the spirit, who is supposedly offended by such antisocial behavior. Thus, the wrongdoer will be responsible for the misfortunes that may befall the village. He will have to correct his behavior and make amends for it to placate the village spirit. The wrongdoer will try to make amends. It will be very difficult for this person to get angry with his fellow villagers, who have only asked him to follow the decision of the spirit doctor. Thus, the animist beliefs and practices preserve, in a variety of ways, the pattern of serene and harmonious social relationships (Sathienkoset 1957).

Traditionally, the yearly cycle of ceremonies and festivals performs a vital function as a stabilizing social force. This is particularly true in the skyrocket festival (*Bun Bàng Fai*) in the northeast region in which villagers perform the skyrocket ceremony in May. As might be expected at that time of year, these ceremonies involve assuring abundant rains. Since fertility is a basic theme of these festivals, there are sure to be overt sexual overtones to the festivals. These ceremonies are important for the welfare of the village, not only in assuring adequate rainfall but also in connection with the actual health and well-being of the villagers. The villagers believe that, if they do not hold these ceremonies, ill fortune will befall them: there will be a drought and sickness. In these ceremonies, sanction is given to drinking, fighting, and speaking and acting in sexually improper ways. If men in the same village have borne a grudge silently, that grudge may surface and result in an open fight. Sometimes two villagers that have a history of ill feeling engage in a group fight. Such actions would be severely disapproved of during the rest of the year in the context of a culture in which it is mostly a sin to show dislike, discontent, and hatred and, in which one seldom sees people engage in any angry discussion, let alone a fight. These improper actions are accepted and, in fact, are expected and are forgiven during the festival (Wongthet 1975).

The Thai New Year's festivities or *Songkran*, in April, which coincide naturally with the end of the rice harvest, are normally celebrated at the temple compound. On this day, nobody, particularly women, is allowed to work. Before New Year's Day, villagers clean their house and polish an amount of rice sufficient for family consumption during the festivities. In the morning, young people undertake the ceremony of the "ritual bath" for revered monks, elders, and parents. In pouring a few drops of perfumed water on their raised hands, they wish them a happy and long life. Water symbolically purifies the soul, takes away sins, and brings back mutual forgiveness, compassion, and reconciliation to the family or local community. Later, in the afternoon, is a time for a *safety valve*. The ceremonies and festival offer more than just an opportunity for gaining merit and having fun. They also serve as an acceptable channel for giving vent to suppressed feelings and carrying out activities that ordinarily are not sanctioned in the village. Thus, women, who traditionally are not allowed to drink, to enjoy themselves in public, or to talk about sex, take the liberty to do all forbidden acts publicly once a year. This unusual habit is very helpful for keeping them in their place during the rest of the year! Once the social pressure decreases, people return to their normal life with more capability to discuss or overcome problems. These aspects are an integral part of the ceremony and festival pattern of the village. Even if not consciously realized and expressed thusly in any study of village ceremonies and festivals, these social and cultural aspects cannot be neglected.

The Thai way of learning

In the social context that overt criticism of someone is bad manners, Thai learning behavior consists of listening, observing, imitating, and repeating, and gives importance to "experience first, theory after."

Listen, imitate, and repeat. Long ago, only a few knew how to read and information was not attainable by everyone. To get people informed, *Pho Phleng* and *Mae Phleng* (wordsmiths who had skill to improvise poetic songs) were in charge of passing on useful and practical information on

special occasions. In southern Thailand, a group of wandering poets came to the villages to announce the end of the year and new events for the following one. The broadcast information was composed of memorized songs called *Phleng Bork*. Villagers became informed about when and how to plow their land and sow rice. Rice varieties were selected according to the rainfall conditions of each year. Wandering poets also predicted a good, average, or bad harvest depending on normal rainfall distribution or drought. This information was taken from sacred books belonging to a few elite persons or monks in the community (Patamadit 1983). It is common to notice local bard singers who are capable of reciting hundreds of poems or reproducing new ones without knowing how to read any words. Nevertheless, the words used in these poems are surprisingly smart, witty, and sensible. These singers enjoy a certain prestige because of their knowledge and their genius as professional wordsmiths. Their knowledge includes both current events and religious lore, philosophy, local history, and customs.

Folk tales are also the source of popular wisdom. Folk tales teach and caution proper respect and reverence for one's parents, superiors, and elders. Often, the spirit world will be called upon to attest to the validity of such cultural imperatives. Clear explanations of the cause and anticipation of the effect are strongly emphasised in folk culture's transmission. It is clearly indicated that, to maintain harmony in society, all people have to do their best to meet the obligations of their social class. Doubt, questioning, and discussion are considered as a lack of respect toward elders. Therefore, misfortune could befall the one who manifests his or her ill respect. Sometimes, the sin is so serious that all the community receives punishment. Whenever there is drought, flood, or famine, these events are believed to be the effect of an immoral governor who does not govern the country with good dhamma, transparency, and justice, or of laymen who do not well respect Buddhist precepts or violate certain laws of the community.

If one persists in acting uncommonly or disobediently, society will restrict that individual by condemning that person as a fool or haunted by bad spirits; therefore, he or she has no right to stay in the community. Two solutions could be found: chase away the bad spirits by using supernatural power or exile that person. Normally, after receiving a series of traditional curative treatments (beating, threatening), the haunting spirits are supposed to be frightened and obliged to leave the body. The person is cured and becomes normal and regains the right to stay in the community. Social excommunication is the final sanction used in the case of persistent behavior. Many examples are seen in the north and northeast region (Kanjanaphant 1984).

Experiences. Exile is used not only as a way to eliminate social rebellion, it is also the crucial step in life that permits young men to grow up. But does growing up mean that one has to revolt and be exiled before returning to normal life? This way of thought is in contradiction to the concept of avoiding overt social conflict in Thai culture. Folk tales can reveal this contradictory aspect. In studying folk tales, we can illustrate the predominant themes existing in the stories as follows: the hero has to leave his birthplace for an adventurous journey to gain experiences and supernatural power, then return to his original place to impose his authority. Adventure, experience, and discovery seem to be the central interest of the audience.

Adventure is considered as the best education for life. The experiences that the hero gains are real and more important than knowledge acquired by listening to others. Departing for an adventure means that the hero has to face unexpected problems. Uncertainty is unavoidable in life. The capacity to react to uncertain and unpredictable events in a successful manner is more important than theoretical well-planned work. The famous Thai proverb "(Listening to) ten mouths does not equal what is seen with one's own eyes" confirms this idea. In rural society where oral tradition is still the most efficient way to popularize information, knowledge does not come from textbooks or theoretical discussions. Laymen acquire their knowledge by doing and experiencing. The villagers learn by participating in the activities that elders undertake. First, they observe, select, and reproduce by imitating the activities that serve them best. Later, they add new techniques or new elements discovered during their repetitive work or picked out from others' way of doing. "Try to see whether it is good or bad" are key words for the layman's learning process. Through this way of learning, elders are the most valuable human resources. Elders acquire knowledge by risky experiences undertaken during their entire life, and only in that way do they become venerable. So, the knowledge transferred by elders is normally more credible than that from the young because elders have spent a longer time testing, selecting, and modifying their knowledge. Young people, though possessing academic knowledge as well as information and news of the world beyond the village border, do not yet enjoy prestige and influence.

However, as a youth, one must act properly in relation to one's parents, monks, and elders if one is to be accorded respect when maturity and seniority are finally reached.

Collective information. In the past, other kinds of news such as political, social, or economic news, whenever villagers got news from any source of information, they did not believe it totally without verifying it. In the northeast, they had a special process for verifying information called *sokan*. First, they gave high credit to the person who broadcast the news. If that person was credible, the news was believable. In rural society, in which social behavior was tightly controlled, villagers recognized highly credible persons. Normally, these were the abbot, senior, and heads of the village or schoolteachers. Villagers came together at the village's temple or school to discuss and analyze the news with these people. The abbot or chief of the village often became a referee or jury in these circumstances. These people first asked everyone to give his or her idea, to present strong and weak points, and then to choose together the best solution. The community considered it each person's responsibility to broadcast and verify news. The most important news always concerned food, for example, the time to catch fish in rivers, collect vegetables, hunt in the forest, or slaughter a buffalo or a cow, so that village members could participate in the activities in time. If some people got the news and kept it for themselves, the community punished them by boycotting them: these people were not informed of any news for the next occasions (Sawadiphanit 1991).

Implications and observations from concrete experiments

The analysis presented above points out many features that are important for understanding both individual and social behavior of northeastern Thai stakeholders in general. More precisely, it gives insight into the way stakeholders may perceive the companion modeling approach and act during the collective learning process. In the discussion below, we try to relate the above analysis to the theoretical elements of the companion modeling approach. For this discussion, we also extract some observations from three experiments conducted in 2002 and 2003 in northeast Thailand (see Suphanchaimart et al, this volume). While establishing these relationships we try to propose some lessons for the use and adaptation of the companion modeling approach.

We divide the discussion into three parts. The first part discusses the individual features and the second part discusses the social influence. The third part discusses the uses of artifacts for collective learning processes.

The individual path

A very important aspect presented earlier is the concept of karma and merits, which is the foundation of autonomous behavior. In addition to this notion of given karma is the role of individual experience in the learning process. Each individual has to gain experience by himself/herself and learning comes from experience. Although learning and experience are essentially individual, observation and imitation of others are also considered in the learning process. The role of theory and discussion is not as important.

These elements correspond with what was observed during the role-games in the villages. The players took part in the action proposed by the role-game in a very individual way. Certainly, in the game, farming is an individual activity that can be done without exchanges. However, few discussions on crop choices occurred during the experiences. Imitation processes may have occurred during the role-games. For example, during the games, some farmers introduced farm ponds in their fields. During the following steps, other farmers gradually introduced ponds on their farm, but there was no discussion about that (at least visible discussion). During the games, farmers experienced original land uses. In one game, one farmer used his plots for fishponds. Another farmer split his land in two to have orchards on the upper land and rice in the lowland. These experiences were certainly observed by the other players, but not discussed. This is consistent with the notion of individual autonomy, whose foundations are presented above.

Because of this autonomy and the emphasis on the individual path, there seems to be less room for what Jager (2000) calls social comparison in the individual decision-making process. Social comparison means that a player will quantitatively and socially compare his/her conditions with

another stakeholders' conditions. The observations made during the experiences confirm this. We did not observe farmers' decisions based on discussed quantitative comparison. This can be observed also during the other steps of the companion modeling approach. First, it is almost impossible to have group discussions on the behavior of such or such a player (we will come back to that point in the next section on social control). Second, during the individual interviews, even if one player knows what the other players did during the game and can restate it, he/she will not easily comment on behaviors, reasons, and differences.

Thus, the role-game method that is used as a step of the companion modeling approach seems to correspond well with the individual learning process at stake in northeast Thailand. This leads us also to think that the individual process of social comparison is very difficult to investigate. Companion modeling seems to be a relevant approach but the first experiments do not show its efficiency for that purpose.

Social structure and social control

The second important aspect discussed earlier is social control. The structure of Thai society appears clearly during the experiments. There are different classes of stakeholders: farmers, traders, administrators, researchers. Mixing people from these different classes in a common role-playing game is something very challenging that needs to offset some perceptions of the society. The first challenge is to invite together stakeholders from different social statuses. A role-playing game corresponds to an arena of social confrontation where people will be forced to interact, as in reality. If there are no interactions in reality, no interactions occur during the role-playing game. This is what happened during the experiments. Invited stakeholders coming from upper organizational levels did not participate at all in the role-game but delivered a discourse after the experiment. What makes these tensions acceptable is the fact that the game is *sanuk* (fun). Some transgressions of the social structure are possible during the role-game. This will be discussed in the next section.

Among members of the same social classes, social control is also very strong because of the social harmony principle. One should not express an opinion on differences in results with other actors. One of the companion modeling principles is that this modeling should help in collective discussion. In other cultural contexts, collective debriefing of role-games is very important: players explain the reasons for their choices, which helps in the common understanding. During the role-games, we never succeeded in having the collective discussions. Stakeholders cannot collectively justify their own actions (which may show too much self-esteem) or comment on others' actions (underestimation of the others). Stakeholders cannot express any comment that could be interpreted as a competition. For that aspect, the companion modeling approach is not suitable. However, surprisingly, the computer multi-agent systems (MAS) model can be helpful for this aspect. During the experiments, we realized that we had good discussions when we presented the simulations as "actions of other players". Then, the stakeholders were active in commenting on the observed actions. For instance, surprised by actions observed at the interface of the model, they said, "these players are not Lao" which relates the players' actions to their culture.

The last point discussed here is the importance of the social network. As stated earlier social harmony is based on the stability of the social network. Several observations during the role-games confirm this conclusion. We give here two examples observed during the role-games. In September 2002, an important trader was invited to play with the farmers. When the game took place, we realized that the middleman who usually acts as an intermediate between the farmers and the trader was playing the same role in the game, and that the selected players were actually members selling sugarcane to this trader in reality through the quota leader. This allowed the trader to stay relatively apart from the farmers during the game, but to control the sugarcane exchanges. The second observation occurred during a game in April 2003. We realized that the players acting as middlemen between the factory and the farmers and who were supposed to compete for sugarcane were in fact exchanging sugarcane among themselves in a complex and not economically rational way. When interviewed about that fact, the players explained their kinship relationships and expressed the need for sharing the resources among the stakeholders. Thus, the earlier analysis and observations during experiments converge to emphasize the very important role of social structure. The maintenance of the social structure is a very important objective of the players, and it is a means for performing the actions proposed by the game. The consequence for the companion modeling is that the organizers

have to analyze the social structure of the group they will play with, and strengthen markedly the ability to observe and analyze the interactions among stakeholders during the game.

Tools for mediation

The companion modeling approach proposes the use of two kinds of artifacts, role-playing games and computer simulations, to mediate the discussion and enhance the collective learning process. How do stakeholders perceive these artifacts? How relevant is this idea of tools for mediation in collective learning processes?

The first point we discuss in this section is the difference between reality and artifacts. It appears from the observations during the experiments and from the interviews the day after that it is very difficult for players to differentiate reality and role-playing games. The participants play in the game like they act in reality. The game imposes some constraints that they do not have to face in reality and, conversely, the game does not reproduce the full complexity of reality. However, during the individual interviews after the game, we noticed that the players did not understand well why we asked two times what is their decision-making process, in reality and in the game. The differences that can be discussed are the differences brought about by the structure of the game and not by the decision-making process. This commitment in the game is observed in all the countries where we played role-playing games. But it seems to us that in northeastern Thailand this assimilation between virtuality and reality is much stronger. This may be related to the *anicang* (impermanence) concept of Buddhist philosophy. Life itself is one experience among others, one scenario among others. The role-playing game proposes another kind of virtuality and the gap between the role-playing game and reality is may be less important than in other cultures.

This has consequences for the second point: What is the possible use of the companion modeling approach? Players act in a way similar to how they act in their reality. The realism is individual but also collective. As discussed, players bring into the game their individual decision-making process and their social structure and their social control system. Thus, it is difficult to use the game as a virtual world in which new rules could be discussed. We have seen in other contexts (Gurung et al, this volume) that during the games interactions occur that are almost impossible in reality because the game offers a virtual world offering some freedom, especially social freedom. Earlier, we saw how Thai culture offers some room for the expression of feelings. First is the *prachot* procedure (the role of the intermediary). Second is the role of festivals, which can be used for the transgression of social rules. This happened one time during the experiments in the village. One farmer, a lady, expressed in a very funny way her dissatisfaction with the "big trader". She did it in a very theatrical way to show with her body language that it was for fun. Everybody laughed, but of course there were no consequences or at least no discussed consequences. This correspond more to a process of reduction of pressure, as explained earlier, rather than a commitment in a collective discussion to possible changes. Thus, one could expect the role-playing games to be used as an intermediate, or a mediator, to express feelings and create a new world in which discussions could be possible. This does not happen and seems to be very difficult because the game and reality are too closely related. Thus, the collective learning process is also socially controlled. For that aspect, during our experiments, we did not take into account the *sokan* (process of verifying information) principle, as explained earlier. The experiments took place at the Tambon Administrative Organization, which is a relatively new organization in charge of the local management of resources. This organization did not play any role or express any interest in the process. Thus, before organizing companion modeling experiments, one should try to understand who the reference persons and institutions are for the collective learning process. Again, this emphasizes the need to understand the social system with which we interact.

The last point that we discuss here is the concept of scenario. The companion modeling approach stipulates that the players should collectively propose scenarios of change, which may happen or which they would like to test. But, during the three experiments we carried out, this did not happen. When requested for scenarios to simulate, in the game or in the model, the players were unable to propose anything. This can be partly related to the social control discussed above, which does not favor the expression of ideas on what the system could or should be. But this was not successful also during the individual interviews. One can relate this again to the karma and the *anicang* (impermanence) concept, that actual existence and its events are due to past actions, the uncertainty and impermanence of everything, and the importance given to the journey rather than the achievement. The expression of a theoretical scenario is thus very difficult to achieve. However, this

reinforces the importance of the role-playing game. Players do not propose scenarios, but they act out scenarios. During the experiments, we could observe innovations in the introduction of new crops, farm ponds, a new allocation of land, new activities such as fisheries or integrated farming, and new systems of exchange. Players also react well to scenarios imposed by the organizers such as changes in the prices of commodities. They do not comment but they adapt their behavior.

As a brief conclusion to this section, we realize that the distinction between the game and reality is very fuzzy, that the companion modeling approach facilitates the collective learning process through experience and observation (among players themselves and between organizers and players), and that one should not expect much collective discussion. With the kind of realistic games proposed, virtuality cannot be used by the players to step back and collectively discuss reality.

Conclusion

Our conclusions are drawn from our better understanding of some Thai cultural aspects that concern the learning process and the relationships with virtual reality, and from the first experiences we had while applying the companion modeling approach. As this is the first analysis, we cannot be very firm in our conclusions but rather can give some indications.

- The tools proposed by the companion modeling approach are suitable to the Thai cultural background because this method is based on tools that use experiences and games. Experience with and observation of others are the main driving forces of the collective learning process. Thai learning behavior gives importance to “*experience first, theory after*”. This is learned by listening, observing, memorizing, experiencing, imitating, and repeating. Furthermore, the fun aspect (*sanuk*) is of great importance in the learning process.
- The collective discussions that are supposed to emerge from the use of these tools in the framework of the companion modeling approach do not really occur. This is due, on the one hand, to a convergent effect of individualism, strong social structure, and a fundamental culture of conflict avoidance, and, on the other hand, to the great difficulty in distinguishing reality from virtuality and theorizing scenarios.

Although these first indications should be confirmed by new experiments, scientific discussions, and more theoretical investigations in social sciences (on the concept of scenarios, for instance preliminary recommendations can be derived from this work. The first is the importance of the social organization. One should have a good knowledge of the social organization before playing the game. Emphasis should also be given to the observation of social interactions during the game. This task requires the involvement of well-trained social scientists. The second recommendation is to emphasize experience, both individual and collective. Culturally, people learn individually and collectively by experience and observation. Involvement in role-playing games and the interactive use of simulations correspond to that behavior. It is also through games that people express scenarios and adaptations to external constraints. This guides us to adapt the companion modeling approach so that it will emphasize role-playing games, lead to game organizers proposing scenarios of change, and use computer simulations more interactively.

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