

PSYCHOLOGICAL MODEL OF COMBAT STRESS

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ABSTRACT

Combat stress denotes the onset of psychological, physical and behavioural reactions brought about by the exposure to traumatic experiences in the battlefield.

Whether traumatic experiences will result in combat stress depends on a number of factors. Presented below is the psychological model of combat stress as derived from the experience and research run during the Homeland Defence War. (Figure)

The onset of combat stress is conditioned by three groups of factors; the first group containing factors related to battlefield (ratio of attack and defence force, and general conditions in the battlefield. The situation characterized by equal attacking and defending force (manpower and material potential) is expected to have equally traumatic impact on both sides. The conflict of the attacking force far more powerful than the defending one will also be much more traumatic for the latter.

The next group involves stress-coping factors which, facilitated by well-conducted prevention, can fairly reduce effects of traumatic events in the field (especially in the case of acute combat stress and post-traumatic stress disorder). Quality combat stress prevention requires systematical efforts towards enhancing personal, unit and social coping factors (where unit psychologists have an important role).

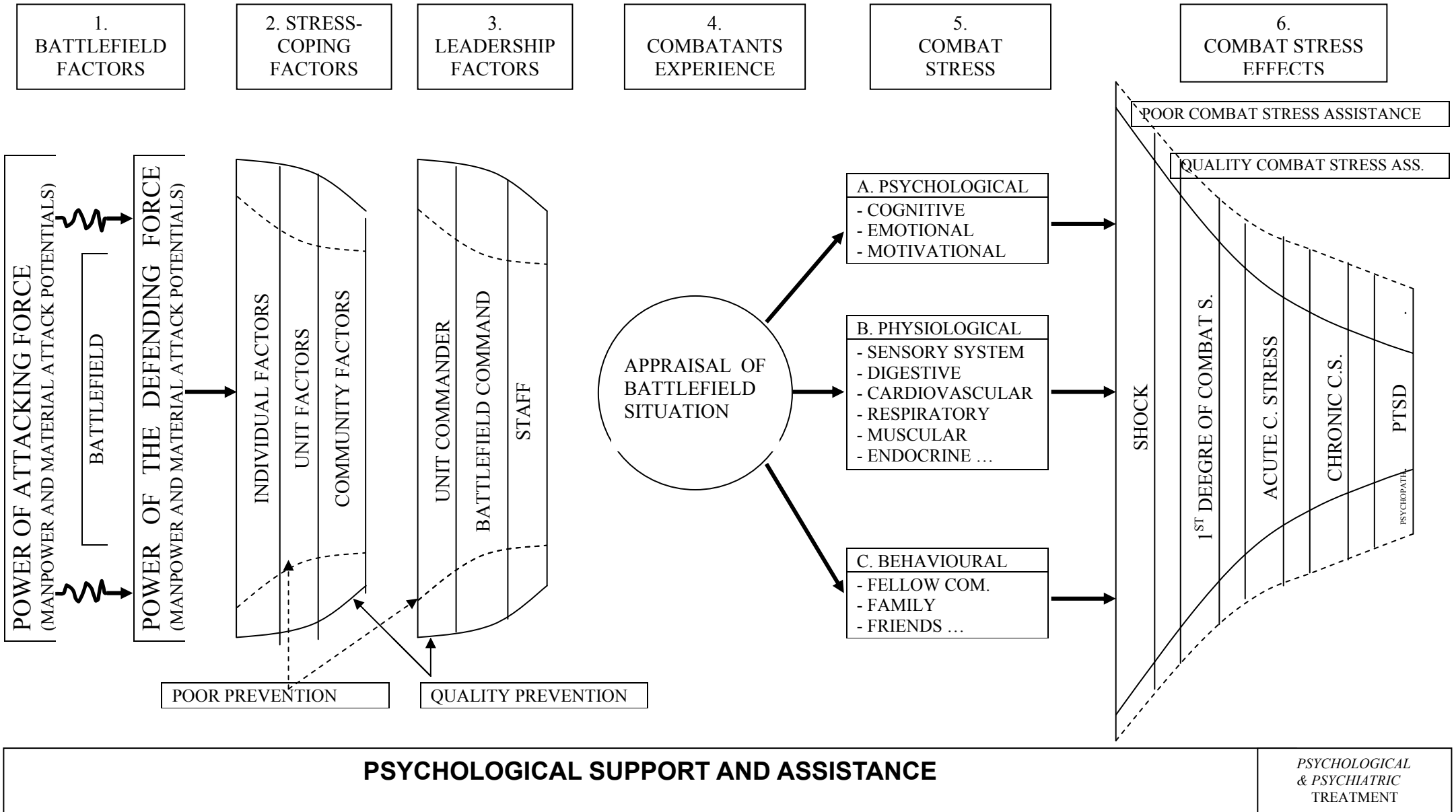
Leadership factors make the last group of factors, with special emphasis on unit commanders, battlefield command and senior and top-level staffs. Quality combat stress training and prevention by unit commander, command and staff will contribute significantly to minimize negative effects of traumatic events in the battlefield.

In heavy combat conditions combatants, moved by naturally activated defence/coping psychological mechanisms, go through and assess the battlefield situation. Conditions perceived as severe life threat will result in a series of combat stress reactions, which can be categorized into three main groups psychological reactions (cognitive, emotional, motivational), physiological reactions (sensory reactions, digestive system reactions, cardiovascular system reactions, respiratory and muscular system reactions) and behavioural reactions (directed towards fellow combatants, commanders, family members, friends etc).

The factors and processes related to traumatic events in the battlefield will result in differential severity of combat stress. Almost all exposed experience psychological shock, which most soldiers do manage to get over while still in the battlefield, whereas a small portion develop the initial (first) degree of combat stress. However, after a short recovery a few steps away from the battlefield, aided by fellow combatants, commanders, unit psychologist and physician, the soldiers affected overcome this degree and resume their duty. A small percentage of soldiers, though, fails to recover within short time and develops acute combat stress. Even then some individuals will not recover but will suffer the onset of chronic combat stress, or even fall victims of post-traumatic stress disorder or different psychopathological conditions.

Again, to emphasize is appropriate prevention and assistance, the responsibility mainly of military psychologists, as a powerful tool in reducing the impact of combat stress.

MODEL OF SOLDIER'S EXPERIENCE AND BEHAVIOUR IN COMBAT STRESS CONDITIONS



The term “combat stress” is used to denote psychological, physical and somatic reactions resulting from exposure to traumatic battlefield events. In combat situations, says S. Noy (1991), the conflicting sides employ all the power available to discourage the enemy and to force him to surrender.

The research in the field highlight the problem of combat stress. Studies by American researchers reported combat stress reactions in as many as 33% of personnel deployed in heavy combat during the ww II. In the Pacific front combat stress reactions victims equalled the number of wounded. In the Yom Kippur war combat stress victims in some Israeli units accounted for 70 % of the wounded (Levav, Greenfedl and Baruch, 1979). In an Israeli unit with a heavy toll from the Lebanon War in 1982 the wounded-combat stress casualties ratio was 1:1,2 (Noy, Nardi and Solomon, 1986).

There have been instances of battles and wars lost to combat stress reactions that incapacitated soldiers from fighting on (Noy, 1991).

Table 1 contains data on physical and psychological toll of recent wars:

Table 1: Comparison of data on physical and psychological casualties of modern-age conflicts

Wars	Deaths	Psychological casualties
US A. Forces-Korean war	33.629	48.002
US.A Forces-Vietnam war	16%	12.6%
Israel –“Yom Kippur War”(1973)		30%
Israel – Lebanon War 1982		3 times more

Presented in Figure 1. is the model of combat stress developed by Croatian psychologists (Pavlina, Komar and Filjak, 1997), based on the Croatian Homeland War experience, research by home and international experts (e.g. Noy, 1991; Foy 1994; Pavlina, Došen, Filjak, Marić, 1993; Drenovac, 1996), and the psychological model of combat stress by R. Gal and F. D. Jones (1995).

Below presented are the basic facts related to the model, as well as to the following six aspects:

1. battlefield factors
2. stress protection factors
3. leadership factors
4. experience and appraisal of combat situation
5. combat stress reactions
6. combat stress effects

Also, the paper highlights the benefit of psychological support and care in fighting and prevention combat stress, and contains the guidelines to unit commanders on procedures for minimising the impact of combat stress risk factors.

1. BATTLEFIELD-RELATED FACTORS

These are combat stress-related factors involving combat conditions as principal source of stress arousals:

- a) intensity and duration of combat operation

- b) power (human and material factor respectively) ratio
- c) general battlefield conditions
- d) observing of international norms and conventions on armed conflict

Severity of combat stress reactions is primarily a function of combat intensity. Sustained, deploring combat operations take far more psychological casualties compared to those of lesser duration and intensity.

Operations carried out in general conditions and strategies and between adversaries matching in personnel and material are likely to have comparable traumatic impact on both sides. Should one side dominate, be it in manpower, arms, ammunition, equipment and position, and resort to atrocities, it places the opponent under the threat of severe stress arousal with quite expectable negative stress effects.

There is, however, a time-honoured notion relevant in this regard, and had been articulated by the ancient philosopher Xenophanes, saying that it is human potential and its combat spirit, not a massive force or arms, that wins the war.

The extent of combat stress is partly determined by the very battlefield conditions too. Launching an attack from an adverse position will expose soldiers to heavy stress arousals and consequently to severe combat stress.

Warfare strategy is another important battlefield factor. Namely, the respect of the international warfare norms and conventions is known to reduce the incidence of stressful situations and consequently stress effects too, whereas atrocities and internationally prohibited tools (cluster bombs, toxic gases, napalm bombs) used to destroy hospitals, kindergartens, schools, churches etc. cause far heavier combat stress.

2. STRESS PREVENTION FACTORS

The next group of factors determining the extent of combat trauma involves stress prevention factors. Quality prevention has been proved to "damp" the effect of traumatic conditions (acute combat stress and post-traumatic stress disorder). Primary prevention of combat stress encompasses:

- a) individual prevention factors
- b) unit prevention factors
- c) social prevention factors

Primary prevention of combat stress is focused on one's proper prevention factors, and is conducted through

- a) selection and classification of the military personnel (especially for specific assignments)
- b) combat readiness promotion through proven psychological preparing techniques and combat training

According to the research in the field, identifying the individuals likely to develop combat stress is impossible, i.e. there have been no evidence to claim predisposition to combat stress (and likewise for bravery). Combat stress is rather determined by the situation factors, primarily unit characteristics. However, proper selection and classification enable matching of assignment with soldier characteristics, i. e. leaving out soldiers lacking the required psychological criteria and personality profile. In that way the military is manned by individuals physically and psychologically fit for effective military performance, which in its turn helps minimise combat stress reactions (Filjak, Komar and Pavlina, 1997).

Psychological preparation and combat training of soldiers, and instruction on psychological and physiological reactions emerging in life-threatening situations, on

dealing with fear and anxiety and on effective behaviours in such conditions proved to be a most effective prevention tool. Therefore, a set of handy guidelines was prepared advising commanders on how to keep fear under control, and soldiers how to control combat stress (a group of authors, 1992).

Unit prevention factors, primarily togetherness among the members, help reduce the impact of traumatic event and enhance self-confidence in the heaviest conditions, whereas loss of confidence in one's peers and leaders opens the door to combat stress reactions and failure.

Elite units, by definition characterised by elevated combat readiness, suffer fewer casualties to combat stress compared to ordinary units. Studies have revealed unit psychological combat readiness can be promoted, and to a high level, by selecting psychologically fit soldiers and commanders, by quality training, proper stimulation, and the like.

Social support is another trauma- and combat stress-reducing factor. Soldiers deployed in operations disapproved by their environment (family, community) as a rule face considerable psychological difficulties. Some are faced with family problems that add to the concern, which undermines their concentration and coping with combat stress. Studies have shown that combatants frustrated by inability to deal with family problems (especially if serious) develop internal conflicts, frustrations and anxiety all of which render them more susceptible to combat stress. Instructions in this regard were issued by a group of authors in the Armed Forces, 1992; Pavlina, Filjak, Bender-Horvat, 2000).

3. LEADERSHIP FACTORS

The following group of factors involves leadership factors. Proper selection and training of leaders on the combat stress issue, in conjunction with competent preventive policy by unit commanders and senior command levels, can do much to mitigate traumatic impact of combat. The responsibility in this regard is shared among:

- a) unit commanders*
- b) field command*
- c) senior levels commands*

Soldiers perceive stressful combat situations less threatening when backed up by a competent and reliable commander and senior command staff. Kallai (1983) reports on Israeli soldiers crediting competent commander the most with instilling the sense of safety and self-confidence into them. The study by Noy, Nardi and Solomon (1986) revealed the highest incidence of combat stress reactions in units where soldiers lacked trust in their commander.

Studies have revealed combat stress prevention most exercisable through competent commanders, the rest of factors are hardly possible to influence, as reactions to life-threatening situations are mostly inborn. Military experts recommend developing the command aspect (unit commanders in particular), in terms of capabilities (by means of selection and classification), trainedness and motivation (i.e. stimulation) for the demanding, long-term and highly responsible unit leading duty, particularly with regard to enhancing psychological combat readiness of soldiers.

Military psychologists in Croatia have developed highly effective procedures for minimising combat stress risk intended for commanders (Koren and Zelić, 2000; Pavlina, Filjak and Bender-Horvat, 2000).

4. COMBATANT'S EXPERIENCE

Combat situations involve three different types of combat stressors:

- a) psychological stressors
- b) physical stressors
- c) physiological stressors

Psychological stressors impair soldier's psychological condition, which then manifests either as *cognitive stressors* (sensory overload versus deprivation, information overload versus lack, ambiguous situations, isolation, hard choice) or *emotional stressors* (fear, anxiety, resentment, anger)

Physical stressors too undermine soldier's resistance thus paving the way to combat stress reactions (e.g. heat, cold, humidity, explosions, vibrations, noise).

Physiological stressors (e.g. sleep deprivation, dehydration, poor hygienic conditions, physical exhaustion, poor nutrition) destroy soldiers' resistance to trauma.

Exposed to life threat in the battlefield, combatants experience fear of dying or heavy wounding, particularly in sustained operations. Such conditions lead to an intensive inner psychological conflict between the survival instinct and the commitment towards one's duties as a soldier. In extremely dangerous situations, deprived of social support, soldiers perceive and visualise imminent death threat, leading to high stress and anxiety level and the sense of helplessness. Combat stress reactions are a natural result of this.

5. COMBAT STRESS REACTIONS

Traumatic combat events are a source of a number of reactions of different type, intensity and duration:

- a) *psychological reactions (cognitive, emotional, motivational)*
- b) *physical reactions (in sensory, digestive, vascular, respiratory and muscular system,*
- c) *behavioural reactions (towards fellow-combatants, commanders, family, friends...)*

When a combat situation is perceived as life-threatening, soldiers may develop one of the following main types of reactions:

- a) *positive experience and behaviour in combat stress situation*
- b) *dysfunctional experience and behaviour, i.e. combat stress and disobedience*

Positive experience and behaviour manifest in enhanced unit togetherness, loyalty to one's fellow combatants and the commander, increased endurance, alertness and vigilance, increased tolerance to discomfort and pain, sense of purpose, increased faith in favourable outcome, courage, bravery.

Dysfunctional behaviour manifests either as *combat stress* or *misconduct*.

Fear, anxiety, depression, anger, insomnia are common combat stress signs, affecting the best combatants, heroes included. More severe signs may ensue too (depletion, apathy, impaired memory or loss of memory, hearing and the like) that call for commander's, psychologist's, medical personnel and fellow combatants' assistance to alleviate the affected soldier's condition and prevent even worse effects (Koren and Zelić, 2000).

Some soldiers may display misconduct as a form of dysfunctional or harmful responding. Most acts of misconduct are nowadays considered violation of civilisational norms of behaviour and of international war norms. Modern armies treat misconduct differently from combat stress, and have established two main forms of misconduct intervention:

- 1) sanctionable behaviours within the military command and law responsibility (e.g. killing enemy prisoners of war, mutilating enemy dead, torturing enemy prisoners, looting, rape, killing civilians, unallowed leaving the unit, refusing to obey orders, threats or actual killing of soldiers or commanders etc)
- 2) behaviours requiring procedures in the personnel system and the military command (e.g. simulating, self-wounding, wounding due to neglect or ignoring of protection measures, alcohol and drug abuse, health neglect etc)

6. COMBAT STRESS EFFECTS

The factors and processes described above result in different stages of combat stress effects:

- a) psychological shock
- b) immediate (1st) stage of combat stress
- c) acute (2nd) stage of combat stress
- d) chronic (3rd) stage of combat stress i.e. post-traumatic stress disorder and different pathological forms)

Traumatic events in the battlefield inevitably lead to psychological shock, the severity and duration determined by a number of factors, primarily the trauma intensity, individual, unit and social stress coping factors, leadership, unit psychologist' and physician's intervention. Most soldiers, however, recover from shock quickly and successfully. A smaller portion that failed to recover will develop combat stress. Combat stress is not a static occurrence, it develops in a cycle. S. Noy classified combat stress into three stages - immediate (1st stage), acute (2nd) and chronic (3rd) stage of combat stress, each bearing four main features

- a) manifestation
- b) onset
- c) duration
- d) recovery changes

Table 2 contains the basic data on the four main features of combat stress stages (Pavlina, Filjak and Bender-Horvat, 2000).

Table 2. Summary of features of combat stress cycle

1. Immediate (1st) stage of combat stress
a) manifests as: severe anxiety, manifested also in moods and behaviour changes
b) onset: during the traumatic event
c) duration: a couple of hours or days following the trauma
d) recovery chances: substantial, as a minor part of soldiers fall victims to the 2nd (acute) stage
2. Acute (2nd) stage of combat stress
a) manifests in: anxiety, depression, conversion reactions, physical discomfort, pain, behaviour changes

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| b) onset: a couple of days or weeks following the traumatic event
c) duration: several weeks or months
d) recovery chances: rather good (not many soldiers develop the 3rd chronic stage) |
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3. Chronic (3rd) stage of combat stress
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| a) manifests in: particularly severe disorder (post-traumatic stress disorder) or otherwise (nightmares, anger or violence bursts, anticipating new accidents, disrupted interpersonal relationships, sexual dysfunction etc)
b) onset: several months following the trauma (often 6 months later)
c) duration: extended (especially in the case of personality disorders)
d) recovery chances: positive, especially in the absence of serious personality disorders |
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A small number of combatants will actually develop the initial (1st) grade of combat stress, for failing to recover from trauma-induced psychological shock. Following a brief recovery close to the battlefield, assisted by fellow combatants, commanders, the unit psychologist and the physician, most soldiers indeed recover from the 1st grade of combat stress and resume their duties.

Acute stress affects the few combatants whose treatment of initial grade of stress had no effect, and who need transporting to further echelon.

Still fewer combatants fail to resolve acute stress, and get affected by chronic (3rd grade) stress. Some of them develop a severe type of post-traumatic stress disorder or a form of psychopathology.

Combat stress effects are successfully fought with quality combat stress prevention and care, where unit psychologist has a prominent part. Proper prevention and treatment measures can significantly reduce psychological casualties.

Half the victims of combat stress reactions actually need evacuating from the battlefield. Some 50-85 % evacuated recover from combat stress and resume their duties within 1-3 days. The rest will do so within 1-2 weeks, with the support from the peers, commanders and unit psychologist. Recovery from combat stress and return to soldier duty preclude the risk of recurrent combat stress.

As few as 5 % soldiers despite the treatment fail to recover, mostly due to underlying neuropsychiatric disturbances (Noy, 1991; Bender-Horvat, 1994; Koren and Zelić, 2000; Pavlina, Filjak and Bender-Horvat, 2000).

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