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## Towards a Technology of Supervision: Use of the OASIS Model in the Delivery of Distance Supervision

### Wykorzystywanie technologii nauczania dystansowego w czasie szkolenia klinicystów do pracy z dziećmi z autyzmem: Model OASIS

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#### Summary

The supervision of students and professionals learning a new trade is standard practice in professional fields. In the behavior analytic community, Behavior Analyst Certification Board® (BACB) has recently developed a Supervision Task Force to examine supervision practices (1). This task force is focused on establishing "(a) more clearly defined approved experience activities, (b) supervisor qualification, and (c) guidelines for the format of supervision" (1, p.1). The current lack of research and appropriate technologies for consistent, high quality supervision is a potential liability for the field as a whole. The current project was developed in response to the significant increase in demand for behavior analytic services and the corresponding need to increase providers well trained in best practice, techniques. The training was developed in 2 phases: 1) coordination with an existing distance-program that had acknowledgement as meeting the course sequence of the BACB®, and 2) modification of an existing training and supervision program that could be delivered via remote/distance technology. General outcomes are positive with trainees increasing in both knowledge and skill application from entry into the distance supervision program until successfully exiting the program. Pass rates for trainees participating in the distance supervision program were higher than those reported by the Behavior Analyst Certification Board for the past exam cycle.

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Key words: technology, online instruction, rural supervision

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#### Streszczenie

Superwizja studentów i profesjonalistów zdobywających doświadczenie w nowym zawodzie jest standardową praktyką w wielu dziedzinach. W środowisku psychologów behawioralnych, Rada Certyfikacyjna Analityków Zachowania (*Behavior Analyst Certification Board*® – BACB) powołała ostatnio grupę roboczą mającą za zadanie ocenić sposoby przeprowadzania superwizji (1). Do celów grupy roboczej należą: określenie „(a) lepiej zdefiniowanych aktywności mogących być uznanyymi jako „doświadczenie praktyczne”, (b) kwalifikacji superwizorów, (c) wytycznych dotyczących formatu superwizji” (1, str. 1). Istniejący obecnie brak badań i opracowanej technologii przeprowadzania wysokiej jakości superwizji może stanowić zagrożenie prawne dla całej dyscypliny. Impulsem do wykonania opisywanego eksperymentu był coraz to większy popyt na świadczenia w zakresie analizy zachowania i wiążąca się z tym konieczność kształcenia osób do poprawnego stosowania technik behawioralnych. Program szkoleniowy był tworzony w dwóch etapach: 1) uspołnieniu z obecnie istniejącym kursem treningowym, który już odpowiada standardom BACB i 2) modyfikacja programu w celu przeprowadzania nauczania dystansowego. Ogólne wyniki są pozytywne, ponieważ osoby uczące się uzyskały wzrost wiedzy i umiejętności w czasie uczestnictwa w programie szkoleniowym. Odsetek osób zaliczających testy był większy niż procent osób zdających egzamin certyfikacyjny przygotowany przez BACB.

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Słowa kluczowe: technologia, nauczanie dystansowe, superwizja na odległość

## INTRODUCTION

The supervision of students and professionals learning a new trade is a long established tradition with roots as far back as the ancient Greeks and is recognized in the Hippocratic oath (2). As a relatively new credentialing program, effective supervision practices have been a concern for the behavior analytic community and in 2011 the Behavior Analyst Certification Board® (BACB®) developed a Supervision Task Force (1). This task force is focused on establishing “(a) more clearly defined approved experience activities, (b) supervisor qualification, and (c) guidelines for the format of supervision” (1, p.1). Despite this discussion there is limited research or guidance on best practice in supervision of behavior analysts. Lack of research and appropriate technologies for consistent, high quality supervision is a potential liability for the field as a whole.

The creation of the BACB certification process has led to the availability of practitioners who have demonstrated knowledge in core outcome areas that are related to evidence based practice and data based decision making ([www.bacb.com](http://www.bacb.com)). These practitioners’ (Board Certified Behavior Analysts – BCBA) use of data driven techniques have led to better dissemination of evidence-based practices in fields such as special education and autism intervention. The practice of making data-based decisions has led to increased demand for BCBA services, particularly for autism therapy, resulting in increases in funding streams (3). As the demand for services has increased so has the number of candidates taking the certification exam (BACB, 2012). This, by definition, has resulted in increased demand for supervision.

However, having advanced training as a BCBA or other clinical personnel is no guarantee one is able to effectively transfer both knowledge and skill to those they are supervising (4). The consequences of an unsuitable BCBA supervisory experience can lead to a deficiency in both demonstrated knowledge in core outcome areas and related use of evidence-based practices. The result of this could be far-reaching as a poorly supervised BCBA goes on to perpetuate the supervisory experience with other, upcoming, professionals. Behavior analysis has incorporated technology since its inception (5). In their seminal article, Baer, Wolf, and Risley described a “rule of thumb” for evaluating the technological aspects of a procedure as appropriate if “typically trained reader could replicate that procedure well enough to produce the same results”. Currently there is little research on procedures of effective supervision for even well trained BCBA’s to replicate. The creation of a technology for guiding the format of supervision is an important next step for not only increasing the consistency of experiences for BCBA’s, but also for maintaining quality in the field.

Recently, Redmon (6) discussed the need for the adoption of behavioral technologies at a system level, stating most strategies were neither analytic nor well defined and that “Some individuals are effective...

some are not, little analytic work is available to explain the difference” (p. 441). This challenge pertains to our current state of affairs in the behavior analytic community with regards to producing qualified BCBA’s: some are good at supervision while others are not and there is currently no body of research to explain, or quantify, the difference. An increase in BCBA candidates increases the need for a technology to bridge the gap between academic experience and independence, outlining differences between good and poor supervision, thus setting a “standard” for the supervisory experience.

This discussion must also grapple with the explosion of distance options now available for behavior analytic training and to address the needs of individuals living in geographically remote areas. Approximately 50% of the lower 48 states are rural, with close to 20% of the US population, or over 53 million US citizens living in these rural areas (7). Key to the behavior analytic community is the international dissemination of the BCBA credential: world-wide 50% of the population resides in rural communities (United Nations, 2007). In many remote areas travel to and from appropriate training sites can be difficult and in response the use of distance technology has increased. Distance delivered education has potential to be an effective model for the dissemination of BCBA University training. The BACB® reports a similar pass rate for distance students compared to traditional students when taking the certification test for BCBA’s (1). Students who are studying at a distance often do not have access to onsite, traditional supervision and must look to distance supervision as their only option. The nature of distance supervision makes the need for distance technology and structure paramount.

One distance training program, the Online and Applied System for Intervention Skills (OASIS) provides a structure to address the training needs of those living outside urban areas. The original version of this model used components of distance technology (online education) to train community-based providers working in homes with children and youth with ASD (8, 9). In 2005 the OASIS training was modified for use by parents of children with ASD in rural and remote areas with similar success, creating a training structure that was delivered entirely using distance technology (10). Use of the OASIS model provides a vehicle for the dissemination of a structured experience for professionals living in non-urban areas who are actively seeking professional supervision.

When looking at the foundations of behavior analysis (5) there is an obvious need for a more structured technological approach to ensure BCBA’s have appropriate skills to practice effectively in the community. The following project was a partnership between two predominantly rural regions, used an iteration of the OASIS model to provide students in a geographically remote area access to BCBA’s, and was developed in response to the significant increase in ASD and the need to increase providers well trained in best practice techniques.

## METHODS

### Development

The program was developed in 2 phases: 1) coordination with an existing distance-program that met the course sequence requirements of the BACB®, and 2) modification of an existing training and supervision program that could be delivered via remote/distance technology. This program reflects the BACB® requirements for the Independent Field Supervision including 1500 hours of field experience and a minimum of 75 hrs of direct supervision time. It was anticipated that trainees would take a minimum of 24 months to complete the requirements of the program and the BACB. In order to better structure the pace and ensure appropriate content was covered, a supervision manual with 17 topics was used. Each topic had a series of informational content based on current literature and included an ethics discussion as well as written assignments directly tied to the content of the monthly topic. Direct contact with supervisors occurred, at minimum, every other week. All supervision sessions (group and individual) we completed via video conference. Supervisors traveled on a bi-monthly basis to complete on-site face-to-face supervision as well as to complete fidelity checklists on supervisee skills.

### Recruitment and Participant Information

Participants were recruited through online announcements and word of mouth. Trainees had to apply to and be accepted into a distance BACB® approved university course, and were required to complete an online application for funding support. Of the trainees accepted into the program for Cohorts 1 and 2, 25% held a Master's degree in Education, 30% in Early Childhood, 30% in Social Work, and 17% in Psychology/Other. Seventy-five percent of trainees were female; 25% were male (tab. 1).

Table 1. Trainee Demographics Cohorts 1 and 2.

	Academic Degree					Gender
	Education	Early Childhood	Psychology	Social Work	Other	F
N	3	3	2	3	2	9
Percent	25%	30%	17%	30%	17%	75%

Note: Numbers do not equal 100% due to some students reporting more than 1 degree.

### Field Experience

All trainees in the program were full-time employees in addition to their student status. The majority of field experience was accumulated in the context of their current employment. Additional field placements were identified for Cohort 1 members whose employment did not allow for direct access to clients. Later cohorts were required to participate in early intensive behavior interventions with clients with ASD served by the program.

### Setting

Trainees were all residents of Alaska; Supervisors were located in Kansas. Trainees used an online "home", or learning management system, to interact with supervisors, access the 17 topics, assignments, and discussion boards, and submit assignments and receive feedback.

## MATERIALS

### Program Guide

A Program Guide was modified based on the previous work of Heitzman-Powell (9) as a text for trainees. The researchers used the BACB® task list, the University course syllabi, and their own experience as professionals to create a sequence of 17 topics that corresponded to the course (topics available upon request). A new topic was presented at each group supervision meeting. Each topic contained objectives and definitions, narrative text based on current literature, and assignments. Additional information was presented in group supervision sessions, including examples and practice opportunities.

## PROCEDURES

### Assignments

Assignments consisted of three to twelve questions regarding information contained in the Program Guide. Trainees were required to submit written responses for each assignment. Assignments included items such as the creation of operational definitions, writing programs, creating data collection systems, and constructing behavior intervention plans. Documents were submitted via email or through an online course site. Assignments were collected to satisfy exit criteria and gave trainees reference materials for later use.

### Online Discussion Board

Prior to each group supervision, trainees were required to initiate 2 posts with questions or comments based on the current topic and respond to at least 2 of their peers' posts. Supervisors used points from within the discussion to guide group supervision.

### Distance Group Supervision

Supervisors and trainees met for group supervision meetings once every four weeks using video conferencing technology. Trainees were encouraged to meet as a group at one location. Trainees who had difficulty making the meeting could access the group meeting from their individual computer provided they had a web camera and microphone. On very rare occasions trainees would phone in to the meeting. Supervisors began the session with a review of discussion board posts and provided additional information regarding that month's topic. Trainees had an opportunity to practice techniques described in the topic.

### Distance Individual Supervision

Supervisors and trainees met for individual supervision meetings once every four weeks. Trainees connected with their supervisors using Polycom video conferencing or Skype internet video conferencing; telephone meetings were discouraged but used when necessary. During individual supervision, supervisors reviewed and provided feedback on assignments submitted by the trainee. Supervisors also provided individualized discussion with the trainee regarding his/her work with clients.

### Bi-monthly in-person supervision

Supervisors travelled to Alaska on a bi-monthly basis to meet face-to-face with trainees, observe client contacts, and complete skill fluency checklists for each trainee. Results of the skill checklist were discussed with trainees following observations.

### MEASUREMENT

#### Pre/Post Knowledge Assessments

A 72 item “mock” exam (based on the breakdown of topics from the BACB® content areas) was used to assess trainees knowledge gains. This measure was administered prior to the beginning of any university or field work/supervision, following the completion of the university training program, and again immediately after completing all 17 topics presented in the Program Guide. The exam consisted of multiple-choice, true/false, fill-in-the-blank, and graphing items. The final exam was a timed event with each trainee having 2 hours and 15 minutes to complete the test.

#### Pre/Post Skill Fluency Assessments

Trainees were observed, either in person or via video recording, working with clients prior to the introduction of topic 4. Supervisors scored the trainees on a checklist of skills during a 30-minute observation. Supervisors scored a + for the correct demonstration of the skill, a – if the trainee did not demonstrate the skill, or a “P” if the supervisor prompted the trainee to engage in a particular skill. An “N/A” was recorded if an opportunity to demonstrate the skill did not arise. Mastery criterion was set at 80%.

Skill Fluency checks were completed as the trainees moved through the 17 topics presented in the Program Guide. After each observation, trainees were provided with verbal and written feedback regarding their performance of the behaviors on the checklist.

#### Demographics and Satisfaction with Training

All trainees completed a demographic survey upon entry into the study and all trainees were expected to complete a satisfaction survey upon exiting the study. This survey assessed their satisfaction with the distance supervision program and the social validity of the training (11, 12). Each survey was scored on a 6-point

Likert-type scale with 0 being the poorest rating and 5 the best.

### RESULTS

**Satisfaction with Training.** Satisfaction data are presented in table 2. Overall satisfaction ranged from 3.0 to 4.8. Trainees in Cohort 1 reported higher satisfaction with all aspects of the academic/supervision experience than did those in Cohorts 2 & 3.

Table 2. Overall Satisfaction with the Distance Education/Supervision Program Components.

Overall satisfaction with the...	Cohort 1			Cohort 2	
	N	Mean	SD	N	Mean
Academic program	4	4.0	0.816	1	3.0
BCBA supervision	5	4.8	0.447	2	3.0
Field experience	5	4.8	0.447	2	3.0
BCBA program implemented through Departmental Support (including Course work, supervision, and field experience).	5	4.4	0.548	2	3.5

Note: Rated on a scale of 0 to 5, where zero is equivalent to “not at all satisfied” and five is equivalent to “highly satisfied.”

**Pre/Post Knowledge Assessments.** Figure 1 shows the percent of correct responses to the 72 question mock exam. The data demonstrates an increase in knowledge over time.

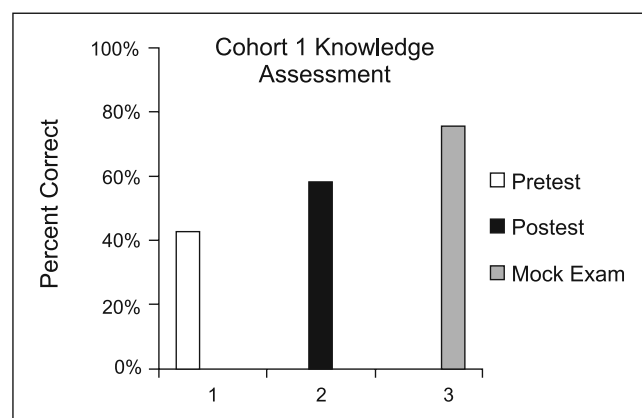


Fig. 1. Cohort 1 Knowledge Assessment on a Mock Exam.

Initial measurement shows trainees’ responses at just over 43% correct. The second measurement demonstrates close to 20% gain. The final measurement, after additional time under supervision, was an average test score just under 76% correct.

**Pre/Post Skill Fluency Assessments.** Figure 2 shows the first cohort of trainees’ skill fluency at baseline and end of years 1 and 2 (trainee 5 dropped from the program). Trainees had the lowest percentages at baseline (range 50-82%) and demonstrated an increase at the end of year 1 (gain scores from 2 to 44%). Percent correct decreased slightly at the end of year 2 for trainees 1 through 3 (range 74-95%) with trainee 4 continuing to show an improvement in skill, demonstrating 100% on the final checklist.



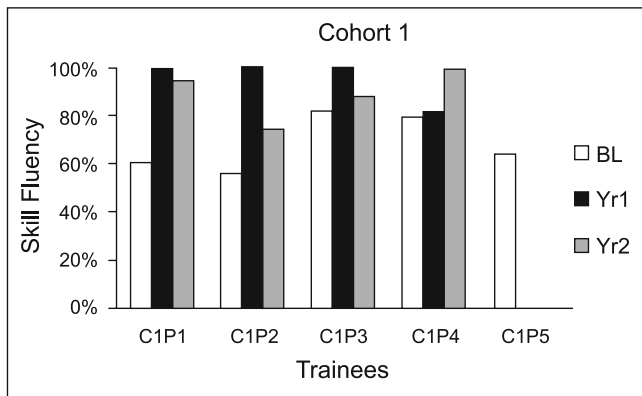


Fig. 2. Cohort 1 Skill Assessment for Basic Behavioral Strategies.

Figure 3 shows a similar graph for the two trainees enrolled in the second cohort. These trainees were undergoing supervision and had not yet completed program supervision. The grey bar shows the baseline for C1P1 (31%) and C1P2 (57%) on the criterion-based skill checklist. The data for C1P1 shows a trend similar to cohort one with a low baseline and dramatic increase with the second assessment (84%). However, data for C1P2 demonstrates a slightly higher baseline score than the follow-up assessment (decrease of 4%).

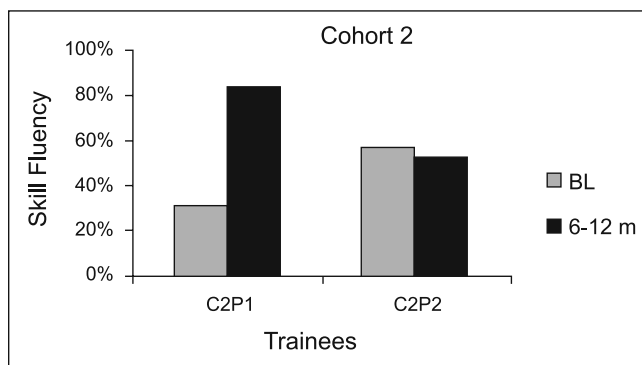


Fig. 3. Cohort 2 Skill Assessment for Basic Behavioral Strategies.

**BACB Pass Rate.** At the time of this writing three trainees from Cohort 1 had completed the supervision process and taken the exam. Two trainees passed the exam on the first attempt; one trainee failed the exam on the first try but passed on the second attempt. This resulted in a 75% pass rate overall with a 66% pass rate on the first attempt and a 100% pass rate on the second attempt. It is important to note that the BACB website for the May 2012 administration of the exam reports a 54% pass rate for first time test takers and a 23.4% pass rate for retakes, suggesting that participation in this project facilitated passing the BACB credentialing exam.

## DISCUSSION

The supervision project described in this paper is the result of an objective, data-based analysis of

trainee performance as a prerequisite for taking the BACB certification exam. The results demonstrate increased knowledge in most of the trainees. The criteria that were set for completion of the program ensured that the trainee had the knowledge to take the test. This is confirmed by the higher pass rate than is generally found in the overall population of test takers. The mock exam data over subsequent measurement periods showed an ever-increasing trend highlighting the importance that supervision and field experience had on trainees' knowledge of behavior analytic concepts. While these are preliminary results, they suggest that completion of a University course, in and of itself, is not sufficient to fully ensure good training outcomes. These data would suggest that the use of this knowledge in an applied situation was also beneficial at increasing trainee knowledge, possibly due to the repetition and discussion during the supervision. This further speaks to the need for a technology of supervision to ensure that students have access to a robust supervision experience, providing a knowledge base that will enable them to help alleviate behavior concerns for their future clients.

One of the unique features in using OASIS as a model for supervision is the focus on increasing skill as well as knowledge. Using skill checklists as a measure of progress ensured all trainees acquired the use of skills in basic behavioral strategies as well as the ability to write teaching programs that could be successfully implemented by others. Although the data between cohorts were not directly comparable, skill data were useful in guiding the supervision experience and allowed the process to be data driven. The development of a technology of supervision could address the areas in which trainees must demonstrate competencies in key skills such as identification of potential reinforcers, starting points for intervention, shaping new skills, arranging the environment to support appropriate behavior, and development of adequate instructions and data collection to document outcomes. Whether one is supervised working with children with autism or is completing supervision in organizational behavior management, these basic foundational skills should be included in a technology of supervision.

Finally, the use of an online "home" for supervision is possibly one of the more important components of this program. This home allowed trainees to interact on a regular basis, submit and receive feedback and enjoy the benefits of a cohort structure.

## Strengths and Limitations

This was a pilot project that used an iterative process across cohorts. Based on this approach, feedback from supervisors, trainees and administrators were used to change program components, process, and timelines for each cohort. Due to the iterative design, the data were variable and not directly comparable. For instance the first cohort was delivered a mock exam after the first 2 classes and 6 months of su-

pervision, the second cohort started supervision after the first 2 university course were completed. However it must be noted that this process was necessary to develop a strong distance supervision program. In addition, these data are representative of a small cohort of trainees. Thus, these data should be interpreted with caution. However, having data available to gauge each trainee's progress is a powerful approach that is unlike most supervision, traditional or distance, and potentially could set the standard of supervision practice at a more robust level.

### Future research

The expansion of OASIS to the use with a distance supervision program highlighted several areas in which we, as a field, could extend our examination of a technology of supervision. As distance learning con-

tinues to evolve, research could explore differences between traditional supervision practices and those administered from a distance, including the overall quality of the supervision experience. In addition research could examine whether the incorporation of a structured skill-based requirement would affect the pass rate of the BACB® credentialing exam. Finally, as the first cohort of trainees was completing the supervision sequence, it became apparent that a new series of skills for behavior analysts may be beneficial to add to the skill set: teaching behavior analysts how to become good mentors and supervisors to those that follow. As the field grows, the questions raised through the development and implementation of this technology of supervision become ones that our field would benefit from having answered, and we suggest sooner rather than later.

### BIBLIOGRAPHY

1. Behavior Analyst Certification Board. (September, 2011). Behavior Analyst Online Newsletter. Retrieved 8/23/2012 from [http://www.bacb.com/newsletter/BACB\\_Newsletter\\_9-9-11.pdf](http://www.bacb.com/newsletter/BACB_Newsletter_9-9-11.pdf)
2. Milne D: Evidence-Based Clinical Supervision: Principles and Practice. Blackwell Publishing Ltd., Oxford, UK 2009; retrieved 8/24/2012 from [http://media.wiley.com/product\\_data/excerpt/92/14051584/1405158492.pdf](http://media.wiley.com/product_data/excerpt/92/14051584/1405158492.pdf)
3. Autism Speaks In: Autism Votes 2012; retrieved 8/23/12 from [http://www.autismvotes.org/site/c.frKNI3PCImE/b.3909861/k.B9DF/State\\_Initiatives.htm](http://www.autismvotes.org/site/c.frKNI3PCImE/b.3909861/k.B9DF/State_Initiatives.htm)
4. Martin FA, Cannon WC: The necessity of a philosophy of clinical supervision. 2010; retrieved 8/28/2012 from [http://counselingoutfitters.com/vistas/vistas10/Article\\_45.pdf](http://counselingoutfitters.com/vistas/vistas10/Article_45.pdf)
5. Baer DM, Wolf MM, Risley TR: Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis* 1968; 1: 1-97.
6. Redmon WK: Pinpointing the technological fault in applied behavior analysis. *Journal of Applied Behavior Analysis* 1991; 24: 441-4.
7. United States Department of Agriculture. Economic Research Service 2012; retrieved 8/27/12 from <http://www.ers.usda.gov/topics/rural-economy-population/population-migration.aspx>
8. Heitzman-Powell L, Buzhardt J, Suchowierska M, Morrison K: Behavioral Aide Training Program [Online]. McLouth 2003; KS: Integrated Behavioral Technologies, Inc. Available: <http://www.ibt-inc.org>
9. Buzhardt J, Heitzman-Powell L: Training Behavioral Aides with a Combination of Online and Face-to-Face Procedures. *Teaching Exceptional Children* 2005; 37: 20-6.
10. Heitzman-Powell L, Buzhardt J, Rusinko L, Miller T: Formative Evaluation of an ABA Outreach Training Program for Parents of Children with Autism in Remote Areas. *Focus on Autism and Other Developmental Disabilities* (under review July 2012).
11. Schwartz I, Baer DM: Social validity assessments: is current practice state of the art? *Journal of Applied Behavior Analysis* 1991; 24: 189-204.
12. Wolf M: Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis* 1978; 11: 203-214.

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