

# LearnxDesign

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## Dialogue and PhD design supervision

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**Abstract:** *A doctorate in design stretches experience, acuity and knowledge in design practice into analysis and long form expository writing in an academic oriented thesis. The PhD in design is a mix of theory and practice, with innovation in practice-based inquiry and acknowledgement of insights and articulations based on design work. Supervision of design PhDs is a largely unresearched domain of design studies, culture and pedagogy. Much may be gleaned from this supervision that has wider import for other domains of doctoral mentoring where praxis is significant. The paper addresses these thematics through the dialogical reflections of four doctoral design educators and supervisors from two settings, one in Australia and one in Norway, and education systems experience in four continents. We have coordinated and taught PhD programmes in design and supervised numerous students from different countries and language backgrounds. As learning by design and designing for learning, our paper takes the form of a themed reflection on our supervisory challenges, experiences and reflections in engaging in dialogues of socio-culturally framed pedagogy in doctoral design along with our own changing professional, teacherly and research practices. We suggest extending the arguments and reflections presented to additional educational and cultural contexts.*

**Keywords:** *doctorate, supervision, practice, dialogue*

## Introduction

### *Situating pedagogy of doctorates in design*

Research reflection on doctoral education specifically in design is relatively recent (Belderbos & Verbeke 2007; Friedman & Justice 2011, Dunin-Woyseth & Nilsson 2012; Dunin-Woyseth & Nilsson 2013) in comparison with other fields in doctoral education more broadly. This in part reflects the emergence of design as an interdisciplinary domain of inquiry in the past two decades or so. The doctorate in design has also developed to include practice-based inquiry and reflexive studies of knowledge developed and communicated through the informational, methodological and rhetorical interplay between theory and practice (Yee 2012).

Internationally, PhDs in design range from being full theory theses to hybrid ones that are a balance of practice-theory, to dissertations that are predominantly practice-led and are characterised by displays of design work in for example an exhibition accompanied by a relatively short descriptive account or exposition. Such format aspects have been extended to choosing between the established genre of the monograph, often connected to a longer period of study, or the thesis by compilation, comprising a set of peer reviewed or equivalent quality publications (conference papers, journal articles, book chapters) (e.g. Lee 2010, Morrison 2013) and typically located within shorter and project funded studies. Students taking PhDs in design often come from a diversity of design domains—product, interaction, service, systems, communication—and frequently return to the university take a research related degree from contexts of their own professional practice that may also be interdisciplinary in nature.

The role of motivating and supporting PhD students in design therefore demands that supervisors are skilled at negotiating and engaging in students' processes of learning how to perform design oriented inquiry. There is a growing body of research on supervision and postgraduate research in general (e.g. Appel & Bergenheim 2005), these include handbooks for supervisors. In recent years publications have begun to emerge specifically on supervising doctorates in the 'creative arts', including art, architecture and design (e.g. Allpress et al. 2012, Hockey 2007) and within the context of practice based inquiry (Allen Collinson 2005) and on design (e.g. Lee 2008).

### **Focus**

Our paper is an exploration and issue raising text, not a survey one that is needed to cover wider international settings and variations. The paper has resulted from a number of years of differently located and articulated dialogues (Wells 1991) on doctoral education, supervision, advising and mentoring (labels we discuss below), between four doctoral educators with collective experience of over 20 years in doctoral education in design. We originate in four different countries, have worked on four different continents and are connected to two doctoral programmes in design, one in Melbourne and one in Oslo. It is these two settings that are the focus of this paper. However the focus draws on our experiences in working in these four different continents and with students from many different countries, especially where English is not their mother tongue or first academic language.

Common to both educational settings selected here settings is the strong presence of practice-based research in design and the growing placement of doctoral studies in design within larger, interdisciplinary research projects and teams, extending to industry placements. These are programmes that have considerable throughput, are supported by supervisors with decades of experience and at a content level cover a variety of domains of design inquiry.

We have collaborated in research paper production, strategic seminar series and projects and taught together and examined PhDs across a variety of settings, and from different cultural backgrounds and professional and design education. We have written a number of papers together on doctoral education in design (Vaughan & Morrison 2013, Vaughan & Morrison 2014) as well as in other domains of design research that involve the interface of theory and practice in shaping new knowledge on, through and about design. Our own research training in doctoral schools in design, media and rhetoric - from southern Africa to southern Australia to western Europe Scandinavia, and North America - has influenced our approaches to PhD design generally and to views on supervision taken up specifically in this article. We have all researched relations between technology, making, media, communication and design where 'construction' (e.g. Koskinen et al. 2011) has been an important part of building criticality. We have frequently compared and contrasted our own experience in designing PhD programmes and schools, teaching on them, supervising and examining.

### ***Methods applied***

Methodologically, dialogues have occurred within our curriculum planning for PhD schools of which design is a part alongside, media, art, architecture and urbanism. The dialogues have been a needed and active part of our own sense making, curriculum design and activities as teachers on PhD programmes. They have garnered pedagogies located in a socio-cultural and Vygotskian perspective to teaching and learning (e.g. Vygotsky 1986) entailing knowledge creation and knowledge building practices (e.g. Scardamalia & Bereiter, 2006) based around types of activities, contexts of discursive action and a developmental process orientation to cognition, literacy and communication. Overall, we have a shared interest in seeing supervision as part of a wider programme of building a community of practice (Lave & Wenger 1991) and of forming critical expertise in which dialogue and shared reflection are a key part of shaping the continuing co-design of doctoral pedagogy.

Discussion, consultation and dialogues that are face-to-face and online have been part of the intersection between our collaborative research inquiry and our co-teaching practices and exchanges. Sharing our needs, experiences and contributions to larger PhD education programmes across design, art, media and architecture and urbanism has also been a space of fruitful exchange. The authors believe this community of practice happens through dialogue, not only among supervisors such as ourselves but with our PhD students and our PhD colleagues who also supervise, or may be co-supervisors with us. Through these types of dialogue, we can establish a mentoring, supervisory practice that is based on apprenticeship and self-reflexive approach to learning within the practice- and project-based approaches that mark design work within higher education (Ball 2012). Such a recursive approach to PhD supervision allows for both student and supervisor to learn from each other while forging stronger connections between the practice of industry and the research of the academy.

In all of this wider shared pedagogy within and beyond our individual work settings, we have frequently discussed matters concerning supervision. It is this 'supervision track' that we

shift to now in unpacking what we see as being a set of key concerns that apply to PhD education in design and that we too see as needing to be taken up more fully in international discussions of building a pedagogy and related research into supervision in design doctorates (Vaughan 2012).

## Views

Based on multiple dialogues we four authors have had regarding our experiences in supervision, we take up the following key concerns in doctoral supervision for PhDs in design: *Defining* (Supervisory definition, preparation and training); *Becoming* (From doctoral student to PhD supervisor, Supervising students' transitions from practitioner to researcher); *Relating* (Roles and relationships in supervision); and *Strategising* (Teaching and learning about practice and theory, Curricular matters, Collaborative inquiry, Building communities of supervisory practice and critique, Composition and publication).

### *Defining*

What it is that constitutes supervision in design is often not explicitly defined, either for existing supervisors or new ones. In contrast, a parallel research literature exists on higher education (e.g. Kiley 2011) but it does not substantially address the needs and demands of supervising design based inquiry (Lee 2008). In part the lack of clarity and unity about defining supervision in design has to do with how design research has evolved and matured, from its foundation in the crafts and later trade schools to the contemporary university. This evolution has included the increased demarcation of disciplines and specialisations along with moves to include research as part of reflective practice and critical analysis. Little research has traced and related these diverse origins of the design doctorate in theory and practice. This is apparent for example in supervising students in service design, while that field has emerged rapidly, and where their own professional expertise has been in design management. In such a situation, a supervisor may not have the knowledge of the emerging field to the same degree as one's students, nor may the students wish to be adequately critical academically when they do indeed need to terra form a new domain area in design and promote it!

In addition, there is often a lack of unity in the training of supervisors and their own experience is generally not shared with colleagues unless an issue of quality or impact arises in the course of a student's progress in their research. Alongside wider institutional frames, how supervision is understood is typically arrived at by way of supervisor's own experience of supervision (Lee 2008). This may vary within one institution where supervisors may have attended the same doctoral education school in design but that the content and dynamics of that school may have changed considerably since their own 'induction' to research. Or a group of supervisors in a design school may also have attended wholly different programmes of doctoral education in other institutions and this may have been as formal academic training in a university and not expressly linked to design. Design doctoral schools also, for example, often draw on expertise from numerous related fields, such as has been our experience in building expertise in interaction design that has a media, communication and cultural analytical inflection in Norway.

Consequently, what supervisors think supervision in design is and how it might and ought to be carried out may vary considerably. Unless there is a shared space for discussing and

exchanging prior experience of supervising doctoral candidates a design school may move into curriculum planning and public arenas and debates about design research education that has unclear and arguably weak underpinnings. In contrast for example, a former PhD student, now a research project leader and successful academic in his own right, has taken the initiative to seek out dialogues with his former supervisor to assist in his own supervision of interdisciplinary local and international students, where institutionally a needed programme to mentor supervisors is still being planned.

The growth in the number of design PhD candidates is outstripping the number of experienced supervisors. As such supervisors may be involved in supervising a spread of types of doctorates (from theoretical, to exploratory, to practice-led), and across several knowledge domains, and increasingly they are required to advise students on interdisciplinary project linked research. Supervisors of PhDs in design therefore need to be highly responsive, adaptive, insightful and ultimately also critical in advising on analyses that might not be demanded at the same degree in more constrained disciplinary contexts of university centred supervision. This may be illustrated by the range in types of degrees, a selection and balance or weighting of theory and practice, such as has been achieved at RMIT University in Australia. In such settings, it is still often necessary to defend knowledge gleaned from practice that is then directed through doctoral inquiry back to the profession. Such knowledge is crucial as it provides connections between the world of work and the spaces of study and analysis that is different from traditional academic basic research. Each has its place and requires different types of supervision. In many higher education settings, students typically have more formally established academic discipline-based prior education that includes longer forms of master's thesis writing and supervision in contrast to the studio and more presentational formats of design schools.

The practices of supervision are also affected by what the content of design doctorates might include. Rapid changes in technologies and design contexts, such as in the emergence of additive manufacturing, social media and service design, make new demands on supervisors and may require that they extend their own professional and research knowledge considerably as a form of boundary crossing (e.g. Manathunga 2007). In such a context a supervisor in design may take on the role of a mentor (Linden et al. 2013) as discussed in graduate education generally, but she or he may not necessarily have the same special area or specific design knowledge as a student with experience and recently gleaned expertise from practice.

### ***Becoming***

The type of supervisor we become in design is often a matter of what we have experienced in our own thesis supervision –whether this has been in design or an associated field. Yet, as design centred supervisors what is actually needed is a design centred approach to supervision that may need to draw on designerly ways of working and communicating along with practised academic approaches. This potential intermixing of methods and techniques asks that we develop, individually and together, approaches to supervision as a pedagogic practice. Turning our attention and our work as educators and researchers towards pedagogy demands more than a shift of attention from our own experience as a research student to that of each single supervisee.

Rarely in writings on the design PhD do we see any elaboration of related and appropriate learning theories to design or the design doctorate. It is the developmental aspects of learning to become a supervisor and learning to become a doctoral level researcher that are key to the student's success and their future post PhD. These developmental aspects may usefully be framed within a socio-cultural perspective on learning which knowledge is produced through engaged dialogue and understanding relations between contexts, tools and mediation, and not merely via cognitive models and preset formats. A design view on sociocultural learning that draws on knowledge practices and modes of communicating from within design is yet to be very well articulated. However, what is common to these related fields are the transformative aspects.

Clearly there is room for research into reassessing PhD education programmes and their concomitant PhD supervisory pedagogies in a sociocultural perspective on learning, on academic design literacies and multimodal means of communicating research. Here, for example, one of our programmes has centred on design, culture and technology. This has been partly driven by the research agendas of a large research council, but also because of shared interest and differential expertise between a team of supervisors and students in a project on design, urbanism and technology. While formal academic supervision can be hierarchical in an old 'master' apprentice model, in our case supervisors have needed to learn from designers' expertise in interaction design. Equally, students have needed to formalise their innovations through braiding theory and relating selected concepts that supervisors have been better able to place disciplinarily. Here dialogue over time has been fruitful and has resulted in numerous shared publications and subsequent co-authored research applications. Together these elements form a wider ecology of 'becoming' where basic and applied knowledge have been connected not separated and where multiple roles have also been part of an emergent profile and work ethos for a design research centre.

The duration of the doctoral degree has many implications for the development of the student research and for the learning and teaching aspect of the supervisory role. Supervision needs to consider a range of transitions in the learning of PhD design students that will occur across the timespan of the research. In supervising design PhDs we have frequently met the challenge of helping students negotiate moves from asserting and at times defending their practice-based knowledge to finding ways to acknowledge, include, enhance and challenge it with an emerging competency in research. Supervisors need to support students to maintain an integrity of practice while orienting the practice towards academic research, this includes learning how to analyse their newly framed insights critically and reflexively and communicating this to others. Supervisors need to assist students to make transitions in practices from making to writing, from running a business to staging and completing a research project and to appreciating different questions of ethics and representation as applied in a research and not commercial community. Supervising students who have taken a relatively short research training education and who need to work under financial and time pressures may demand far closer contact and discussion than the often inherited older school Humboldtian approach to higher education may proffer.

All of these transitions towards knowing how to and being effective in performing as a researcher are to do with 'becoming' and not simply confirming what is given and known. In this sense we argue that supervision of PhDs in design needs to pay greater attention to the type and status of study each student is undertaking. Both student and supervisor, for example in the case of a thesis that is deeply exploratory in nature and in its claims to

knowledge, need to continually engage in open dialogue about the relations between theory and practice, methods and techniques, writing and communicating research. That said, a supervisor may also need to be fairly firm about when and why such dialogical engagement needs to be topped and specific and deliberate actions carried through to written output. This is a question of each instance of supervision being an event and a relationship in its own right; this is compounded however where joint supervision is present. In a two part qualitative study of supervision in Australia across university disciplines (not including design), Hasle (2011: 568)

... proposes that doctoral supervision involves all supervisors in complex learning and the production of knowledge, capacities, dispositions and practices relevant to contemporary workplace conditions. Such learning shapes the subjectivity and identity of individual supervisors. Thus, doctoral supervision can be theorised as a perpetual process of subjective and identity formation – of ‘becoming a supervisor’.

Hasle argues that we need to address processes of supervision as ‘becoming’. This is a two-way endeavour so that ‘becoming a supervisor’ and ‘supervision as becoming’ are what is needed in a wider reflexive enactment, through dialogue.

## ***Relating***

The dialogical dimensions of a socio-cultural perspective on learning in the PhD in design may be extended to roles and relationships. Here supervisors in design need to take on affective and professional identity issues for designers coming to research who may feel that their professionalism is being undermined through the requirements of the academy. Relationships between supervisors and students can be intense, as a supervisor may need to be closely involved in the many formalities and process-related activities that are required when a student moves from being a designer to being a researcher who produces academic written texts for public examination. There is also the matter in practice-led inquiry that as a supervisor one cannot focus on whether or not one likes a designer’s practice: it needs to be seen as part of a route of study and seen as a phenomenon that is worthy of and a sound means for investigation.

Such intensity can extend over the period of study until completion, and this may vary from project funded and necessary 3-year degrees to ones that are extended over time for various reasons sometimes reaching 8 years. In some cases, what emerges is a co-researcher relationship, with a student becoming a research professional in their own right and being included in additional projects that have the potential to both augment the given programme of study but to also derail it. In the co-learning, or collaborative learning in a socio-cultural frame (e.g. Bruffee 1993), a supervisor may learn alongside the student, with the potential to maximise this in another or subsequent supervision or a project or publication of their own.

Supervisors typically exchange comments about their students and their own needs in informal settings with other supervisors. Most design schools do not have formal supervisor boards or support discussion sessions. Co-supervision in part reduces this needs but an institutional developmental approach to learning to supervise would likely benefit new supervisors and provide fresh views where others may be ossified or jaded. What research in higher education shows more broadly is that supervisors also experience supervising students differently (Franke & Arvidsson 2011). In these relationships, perspective and power may play

out variously between student and supervisor as well as between students and between co-supervisors. Sarja and Janhonen (2009: 628-629) conclude that:

In our analysis of supervisor student interaction covert organisational power relationships emerged. Analysing discourses enabled us to understand 'the history and the rules' of the participants in their organisational context. It seems that in discourse practices the authority (or power) of the superior has often been denied by the superior through not-knowing (Guilfoyle 2003). In the teacher student relationship, especially, there is uncertainty. As a result, it is also important to communicate the superior's not-knowing to the subordinate so as to make the generative dialogue more inspiring. We suggest that especially exploratory dialogue provides opportunities for this kind of change and development within higher education.

Exploratory dialogues may be a useful part of becoming a supervisor and the supervision of becoming. However, these need to be more closely understood in terms of strategy in how student and supervisor alike relate to a formal course of PhD study and the learning design and designs for learning of a formal PhD 'school'.

However such a proposition raises additional issues to do with intimacy and the student progression towards independent learning between writing and research and supervisors' contributory roles, directly and indirectly. Dialogues between supervisors and institutional programme directors and wider allocation of resources are also needed in design schools as is done elsewhere (Hasle & Malfroy 2010) in order to consider more fully how credit is given for supervisory work, the extent to which it ought be carried out and how it is recognised as part of wider allocations and awards of supervision as a professional practice in its own right.

## **Strategising**

While researchers in various areas of design increasingly collaborate in interdisciplinary projects within and beyond their institutions, and are members of networks relating to professional and research practice, the wider pedagogy of PhD education in design often does not address shared learning about supervision by way of formal reflection and curricular linkages. In developing effective and sustainable pedagogy, not just market-led strategic moves within a neo-liberal higher education frame (e.g. Firth & Martens 2008, Manathunga 2009), design doctoral educators again need to look beyond their own institutional and disciplinary areas to research on doctoral supervision more generally where discussion and research exist about the role of consultation, dialogue and strategy, including enabling learning conversations between supervisors and students not just teacherly ones (e.g. Wisker et al. 2003). In our own experience, for example, we have also found it invaluable to discuss our related and varied research, design doctoral education and our won research in relation to this between and within our own settings, and as examiners working internationally.

There are a number of strategic initiatives that can be enacted pedagogically and are not necessarily costly and over time may build a shared practice of facilitating design doctoral study. Missing may be group seminars to support staff that supervise. Annual research events that draw together students with supervisors and make spaces for shared meaning-making about research and design inquiry across and beyond individual PhDs and single supervisory experiences are few and far between in design schools.



Overall, unlike the research practices of more formal university programmes where there may be formal training and support for supervisors and exchanges between researcher-supervisors on their own research, in many design schools there are weak formal venues for the cross-institutional presentation and reflection of research by design researchers. It is proposed that the development of an overall research culture within a design school, will have flow on benefits to doctoral supervision, and the student experience. Reader reports for full draft of theses, a review of students wholly revised proposals at the close of a PhD taught course, and an annual PhD review conference are some of the ways this may be strategised. In addition, a more regionally situated and thematically framed doctoral design programme, such as based in Sweden, and through related conference links as in the case of NORDES, has provided structure and means to developing strategies and longer term cross border collaboration. Here as in for example across Australia and the UK, it is possible for supervisors to self-strategise as well through informal networks and thereby also build additional project and positions for post-docs that are a critical part of extending young or fresh research talent into active and future growth.

However, design located contexts and often rapidly changing conditions, such as in interaction design, or rapid manufacturing, make it difficult to quickly develop serious and supportive and adaptive communities of supervisory practice. The notion of communities of practice, involving shifts from peripheral or newcomer entrants to well seasoned and reflective core players provides doctoral design supervision with a clear and well tried model for building professional development for supervisors. It allows for the developmental and the transformational in a socio-cultural learning frame. This may be usefully extended into the collaborative nature of interdisciplinary supervision that so many design PhDs need (e.g. Austin & Hopkins 2004). Seldom have we heard about assistance and professional staff development being extended to such collaborative pedagogical activity (e.g. Watts 2010). Developing communities of shared expertise is an area for development (Hakkarainen et al. 2004).

Further, there is room for wider reflection on methodological matters in supervision (Sarja & Janhonen 2009) when many students need closer attention to distinctions and applications of methods and methodologies, research design and methods and design techniques and tools. Supervision may be collaboratively framed as a shared learning and meaning making activity that reveals its processes and results. In our experience it may be usefully extended pair and group work pedagogies that can involve sets of supervisors and students working together or alongside one another at points in a doctoral research project (e.g. Austin & Hopkins 2004). We tend to stress student collaboration, and encourage co-authorship as part of a design oriented pedagogy, but we tend not to extend this into cross project work by students over the duration of their degrees.

With these many and varying demands and activities in being an effective and supportive supervisor, researchers have an added pressure that is often not taken up in terms of curricular planning and research trajectories of work as a formal part of the educational strategies of design schools. This is that researchers need to be vigilant to maintain their own research practice amidst student supervisions and where productive researchers are supervising many candidates this can be a significant career and work load issue. In addition, there still remains the need to leave enough space to support students who experience specific needs and paths in their learning to be researchers. Some of these may be anticipated but room needs to be left for emergent needs and ones that require closer attention and

additional work with students who are learning what interdisciplinary inquiry involves and how to write long form research texts.

Supervisors perform a major role in supporting the developmental writing of PhD students who often have a stronger background in design practice than academic writing. Supervisors who are active researchers and writers may give their students added assistance. Students still need to find their own voice in writing and in relation to the content of their projects, this not always having been the case with older researcher supervisors who worked less with multimodal research text generation or the growth of electronic online scholarly publishing (Andrews et al. 2012). One recent experiment by three of our students (Martinussen et al. 2014) resulted in a media rich online text that revealed the makings of design artifacts through multimodally rich representations accompanied by close critical analysis. We have not seen many such rhetorically successful works in online journals by senior design researchers. Here identifying suitable journals and conferences places additional demands on supervisors. In some student projects, work does not fall neatly within the handful of leading design journals which may favour a specific mode of inquiry or content orientation.

Co-authorship is an important strategy used by supervisors in guiding students' research development (Thomson et al. 2010). The emergence of the PhD by compilation offers a unique model for learning academic writing by apprenticeship, however, not all supervisors offer the doctorate in this format and may have difficulty in establishing differences between the exegesis and its format and that of a monograph. Further research is also needed at this level (Morrison 2010) that relates to supervisors and their own research compositions and not just formats and students' expository discursive processes of text production.

## Conclusions

These key implications raised through our own supervisory experience and reflections offer further inquiry in the contexts of building socio-cultural perspectives on doctoral education in design in which supervision is included more seriously, on a local and global scale. That said, we see a need to extend our discussion to additional contexts and cultural settings, principally in Asia and the growing body of design research carried out and published, such as in the *International Journal of Design* and programmes such as at PolyU in Hong Kong, as well as in other languages, such as French, Portuguese and German. There is then much awaiting us as a growing community of design educators at post-graduate level and the opportunities posed via organisations and gathering such as CUMULUS, DRS and Nordes to mention a few.

First and foremost, supervision should be a dialogic, learning experience for both students, supervisors and co-supervisors. Franke and Arvidsson (2011: 9) point to research supervision as a learning process that has direct and indirect components. The direct process refers to the content of the process of learning skills, competencies and practices that ensure functioning as an independent researcher. The indirect and more implicit process concerns ways of learning that are influenced by both student and supervisor. Yet it is these implicit views that we have outlined above which need to be made explicit in the supervision process, through dialogue initiated most often by the supervisor (or co-supervisors) as researchers who have already succeeded in obtaining a PhD. This dialogue—between ourselves, our students and our colleagues—can help us locate interests, needs and issues that will facilitate a more formal, yet still flexible and reflexive, approach to supervision practices in design PhD schools.

In order to better understand and share how we define our roles as supervisors, instituting dialogues that support networks across different programmes, institutions and departments, projects, languages and cultures will help design PhD schools create support networks that help us better connecting our own research practices to students PhD processes. (These networks may also have the added effect of choosing external readers for PhD theses.) Through professional and supportive exchanges at meetings or other shared spaces including publications, supervisors can better begin to work with and through challenges, special demands and cases, and identify emerging needs and trends in research designs that tax our current insular supervisory strategies. Such collaborative inquiry and dialogue would also foster exchange outside of design schools, into industry, and with other researchers and design professional groups/networks. How we define, become, relate, and strategise as design PhD supervisors with our students and colleagues inter- and cross-institutionally sets the stage for increasing research production in design, which serves to raise the profile of design PhDs for the better.

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